The support of the school leadership in the development of a professional learning community: a study in Mauritian secondary schools

RAMFUL, Surehkadevi

Abstract
La thèse évalue la présence de formes de collaboration entre les enseignant-e-s dans 8 établissements secondaires de l'Île Maurice. Le niveau de collaboration est examiné en lien avec l'amélioration des résultats académiques des élèves et leur niveau de bien-être. Les questionnaires sont complétés par des entretiens avec des Directions d'établissement secondaire et des coordinateurs et des coordinatrices de département. Ces données qualitatives ont à la fois permis d'approfondir et d'illustrer les données statistiques mais aussi de mieux cerner le rôle que pouvait avoir les directions pour favoriser et soutenir la collaboration entre les enseignant-e-s. Une comparaison est proposée entre les établissements à statut privé et les écoles d'Etat. Le rôle des coordinateurs et coordinatrices est également souligné en discussion pour encourager une culture d'échanges et de réflexion sur les pratiques au sein des départements académiques.

Reference


DOI : 10.13097/archive-ouverte/unige:102587
URN : urn:nbn:ch:unige-1025876

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http://archive-ouverte.unige.ch/unige:102587

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The Support of the School Leadership
in the development of a Professional Learning Community

A study in Mauritian Secondary Schools

Présentée à la Faculté de psychologie et des sciences de l’éducation de l’Université de Genève pour obtenir le grade de Docteur en Sciences de l’éducation

Surekha RAMFUL
(Mauritius)
Thesis No. 690
GENEVA
Student No. 12-340-261

December 2017
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<th>Description</th>
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<tbody>
<tr>
<td>ANOVA</td>
<td>Analysis of variance</td>
</tr>
<tr>
<td>B.Ed.</td>
<td>Bachelor in Education</td>
</tr>
<tr>
<td>BEC</td>
<td>Bureau d’Education Catholique</td>
</tr>
<tr>
<td>CIE</td>
<td>Cambridge International Examinations</td>
</tr>
<tr>
<td>CPE</td>
<td>Certificate for Primary Education</td>
</tr>
<tr>
<td>EM</td>
<td>Emotional Intelligence</td>
</tr>
<tr>
<td>HOD</td>
<td>Head of Department</td>
</tr>
<tr>
<td>HSC</td>
<td>Higher School Certificate</td>
</tr>
<tr>
<td>ICT</td>
<td>Information and Communication Technology</td>
</tr>
<tr>
<td>IL</td>
<td>Instructional Leadership</td>
</tr>
<tr>
<td>ISCED</td>
<td>International Standard Classification of Education</td>
</tr>
<tr>
<td>LCE</td>
<td>Leader Collective Efficacy</td>
</tr>
<tr>
<td>LMX</td>
<td>Leader Member Exchange</td>
</tr>
<tr>
<td>LSE</td>
<td>Leader Self Efficacy</td>
</tr>
<tr>
<td>MES</td>
<td>Mauritius Examinations Syndicate</td>
</tr>
<tr>
<td>MGI/RTI</td>
<td>Mahatma Gandhi Institute/ Rabindranath Tagore Institute</td>
</tr>
<tr>
<td>MIE</td>
<td>Mauritius Institute of Education</td>
</tr>
<tr>
<td>MLQ</td>
<td>Multifactorial Leadership Questionnaire</td>
</tr>
<tr>
<td>MOEHR</td>
<td>Ministry of Education and Human Resources</td>
</tr>
<tr>
<td>NSCC</td>
<td>National School Climate Council</td>
</tr>
<tr>
<td>NYCBE</td>
<td>Nine year Continuous Basic Education</td>
</tr>
<tr>
<td>OECD</td>
<td>Organization for Economic Co-operation and Development</td>
</tr>
<tr>
<td>PGCE</td>
<td>Post Graduate Certificate in Education</td>
</tr>
<tr>
<td>PIMRS</td>
<td>The Principal Instructional Management Rating Scale</td>
</tr>
<tr>
<td>PISA</td>
<td>Program for International Student Assessment</td>
</tr>
<tr>
<td>PLC</td>
<td>Professional Learning Community</td>
</tr>
<tr>
<td>PSAC</td>
<td>Primary School Achievement Certificate</td>
</tr>
<tr>
<td>PSSA</td>
<td>Private Secondary School Authority</td>
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<tr>
<td>Acronym</td>
<td>Description</td>
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<tr>
<td>PTA</td>
<td>Parent Teacher Association</td>
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<tr>
<td>SC</td>
<td>School Certificate</td>
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<tr>
<td>SDP</td>
<td>School Development Plan</td>
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<td>SMT</td>
<td>School Management Team</td>
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<td>SPC</td>
<td>School Performance Coefficient</td>
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<tr>
<td>TLB</td>
<td>Transformational Leadership Behaviour</td>
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<tr>
<td>TSL</td>
<td>Transformational School Leadership</td>
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<tr>
<td>UNESCO</td>
<td>United Nations Educational, Scientific and Cultural Organisation</td>
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<tr>
<td>UNICEF</td>
<td>United Nations International Children’s Emergency Fund</td>
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Acknowledgements

It would not have been possible to produce this thesis without the support and assistance of many people. They contributed significantly along the way in the realization of this work. I wish to convey my heartfelt appreciation and gratitude to all of them. All the weaknesses herein are mine only.

Above all, I am thankful to Yvon Fréderic, Professor, Faculty of ‘Psychologie et des Sciences de l’Education’ at the University of Geneva. He has been my supervisor, advisor and mentor. His unflinching support at every step has been a great motivational force for me to persevere. Despite his enormous work load, he has always been present, read and provided timely and constructive feedback throughout the process. Through his experience and expertise I have learnt a great deal in the field of educational leadership and research.

I am grateful to Dr Jean Marc Huguenin, School of Public Administration of University of Lausanne. His advice and constructive feedback on the quantitative methodology have been instrumental in the completion of this thesis.

My appreciation also goes to Dr Teeluck Bhuwanee whose discussions and feedback on my work have been highly constructive. Sharing his experience in the field of education both at national and international level has been of tremendous help.

I am thankful to the members of the jury for their contribution and valuable feedback.

I am especially thankful to my two colleagues Puvana and Avishka. Puvana who very diligently worked on all the transcripts for the interviews and Avishka who helped me carry out and interpret the statistical tests. My special thanks also go to Anil Gundooaa who proof read the whole document.

I wish to thank all those who participated in this research; rectors, heads of departments, educators and student who agreed to share with me their views and perceptions about their school.

This work has been possible because of the continual support and motivation from my husband Khemraj who was always by my side, especially in difficult times. He has been the driving force along the way. The inspiration and support from my two kids, Dooshyant and Kamakshi have helped me till the end.

The love and support of my parents have contributed to my personal and professional development. I am forever grateful to them for all their effort and determination.
**Résumé**

Cette étude porte sur le soutien que les directions d’école secondaire peuvent apporter pour développer des communautés d'apprentissage professionnelles (CAP) dans le but d'améliorer l’efficacité des établissements scolaires à l’Île Maurice. Les objectifs de l’étude sont de déterminer si les enseignants travaillent en collaboration sous forme de communautés d'apprentissage professionnelles, de voir dans quelle mesure la communauté d'apprentissage professionnel influe sur le niveau d'efficacité de l'école et de comprendre comment les chefs d'établissement peuvent soutenir les communautés d'apprentissage professionnelles. L'efficacité scolaire a été mesurée en termes de performance académique et de bien-être des élèves. Le leadership scolaire est considéré en termes de capacité d’action incluant le chef d'établissement (recteur), les vice-recteurs et les coordinateurs de département et a été renommée appelé « Equipe de gestion scolaire ». Cette étude a utilisé une méthodologie mixte en deux phases. La première phase a consisté en une étude quantitative s’appuyant sur un questionnaire envoyé aux enseignants de huit écoles secondaires au sujet du leadership scolaire, des caractéristiques de l’établissement et les composantes d’une communauté d'apprentissage professionnelle, un questionnaire complété par les élèves afin d’évaluer leur bien-être et le calcul de la performance académique de l'établissement (différentiel output-input). La deuxième phase a pris la forme d’une étude qualitative dans deux écoles spécifiques caractérisées par un faible niveau académique et des niveaux de collaboration distincts. En utilisant des analyses de corrélation, on constate que dans les écoles où il y a plus de collaboration, la performance scolaire tend à être plus grande. Cependant, aucun lien positif n'a été trouvé entre le bien-être des élèves et la communauté d'apprentissage professionnelle, bien qu'elle puisse permettre d'améliorer la qualité des relations entre les élèves et les enseignants. Le leadership scolaire est considéré comme un facteur important pour promouvoir les communautés d'apprentissage professionnelles. Dans le contexte mauricien, le leadership centré sur l’apprentissage (instructional leadership) montre une plus grande influence sur la CAP que le leadership partagé, probablement en raison de son emphase sur la réussite scolaire. Nous avons également constaté certaines différences entre écoles privées et publiques. Il y a généralement un meilleur apprentissage collectif et une amélioration de la performance scolaire dans les écoles privées à faible niveau académique initial. Cependant, ces résultats ne peuvent être généralisés à toutes les écoles secondaires de l’Île Maurice car ils sont basés sur un trop petit échantillon. Un autre aspect de la communauté d'apprentissage professionnelle mis en évidence est le fonctionnement au niveau des départements. Certains départements sont en effet davantage en mesure de fonctionner en tant que communautés d'apprentissage professionnelles. Le rôle des coordinateurs de département et la discipline enseignée semblent influencer la possibilité de fonctionner sous forme de communauté d'apprentissage professionnelle.
INTRODUCTION

To-day education is going through a serious crisis with the many demands from the political (Fullan, 2001) and the societal needs as well as restraints of the education policies of “No Child Left Behind”, “Education for All” and more recently the “United Nations Sustainable Development Goal 4: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all”. Mauritius is not spared; we have to stand by these international demands so that the national policies and reforms can cater to the holistic development of the child.

The Government of Mauritius has taken a number of steps to increase access, ensure equity and improve quality of secondary education. However, there is still too much competition for academic excellence and the education system is too examination oriented, as it has been clearly stated in the Policy Paper on Educational Reform (1996). In order to address this pertinent issue, the Ministry of Education has, very recently, embarked on a whole system reform in education: The Nine Year Continuous Basic Education (NYCBE). The aims of this reform are to stop the fierce competition at a very young age, to professionalize teaching and learning and to improve student learning at all levels.

Although many initiatives have been taken at the level of the Ministry of Education so as to improve schools, the degree of success differs from one school to another, depending on the initiatives taken at school level, which also directly and indirectly depend on the school leadership. The Mauritius Education Strategy Plan 2008-2020 (2008) aims at re-engineering the whole education system. Special emphasis is laid on school staff development and enhancing leadership and management capacity remains a priority. A Quality Assurance System has been proposed in order to ensure internal efficiency, quality teaching and learning; and to develop a decentralized management and delivery system that supports greater community participation.

Many proposals are found in the educational reports (Ministry of Education and Human Resources, 1996, 2006, 2008) but very few have been implemented successfully. Some have been implemented with a lot of resistance and many have not yielded expected results while others have remained unrealized.
The Head of School (called Rector in the secondary sector) has a dual role, at national and regional level: implementing the national educational policies including the demands of the New Public Management (accountability, decentralization, management by objectives) (OECD, 2003); and at school level: creating an enabling school climate, providing the necessary school structures and supporting educators in developing a learning culture for greater school effectiveness. Hence the rector has the task of translating government policies and decisions together with his own development plan into concrete desired actions in the school community. He is bound by all the educational policies and the Education Act. School governance is controlled to a large extent by regional and national authorities. Yet, at school level, what is happening or not happening depends primarily on the rector: what he communicates, what decisions are taken and how he involves his staff in putting the policies and vision into practice. Educators are at the grass root level and are thus having a key role to play in the implementation process and in the teaching and learning process.

International evidence suggests that educational reform’s progress depends largely on teachers’ individual and collective capacity and its link with school-wide capacity for promoting pupil’s learning. Building capacity is therefore critical. Capacity is a complex blend of motivation, skill, positive learning, organizational conditions and culture, and infrastructure of support. Put together, it gives individuals, groups, whole school community and school systems the power to get involved in and sustain learning over time.

Developing Professional Learning Communities (PLCs) appears to hold considerable promise for capacity building for sustainable improvement. PLC is seen as an opportunity for professionals to learn new practices and to generate new knowledge (Resnick, 2010). PLCs have been adopted by many developed countries and their benefits have been highlighted by several studies. In Mauritius, only recently, with the new reform, the importance of collaborative efforts has been emphasized, but it is not institutionalized.

In Mauritius, there is no published research carried out in the field of school effectiveness and PLC. There are some studies which have been carried out by students
of MSc in education in school effectiveness, school leadership, teacher capacity; however, the validity and reliability of the results cannot always be tested.

This research aims at exploring the extent to which educators in Mauritian secondary schools are working collaboratively; how rectors are providing support in the development of Professional Learning Communities and how the collaborative practices are linked to enhanced school effectiveness. It will enable us to understand the different aspects of the school in the Mauritian context and relating them to school effectiveness. The role of the rector as the school leader, school climate, school culture, school structure will be explored in relation to the existence/creation of a PLC and its influence on school effectiveness.

This research will therefore, analyse certain specific aspects of secondary schools in Mauritius and will propose a support system which can best cater for the development a Professional Learning Community in order to promote school effectiveness, hence, better adapt the schools to the fast-changing needs of society and the global challenges. This is very much in line with the new educational reform that the country is undergoing.
CHAPTER 1. Literature Review

1.1. Challenges Schools Are Facing

As we entered the twenty-first century, most nations around the world undertook major transformations of their government and education systems to respond to changing economic, demographic, political, and social imperatives. Nearly all countries are engaged in serious discussion of school reform to address demands for much higher levels of education for much greater number of citizens – demands created by a new information age, major economic shifts and a redefinition of democracy around the world. These demands are being imposed upon schools that were designed a century ago for a different time. Around the world, the need to prepare future citizens and workers who can cope with complexity, use new technologies, and work cooperatively to frame and solve novel problems, and the need to do this for a much more diverse and inclusive group of learners has stimulated efforts to rethink school goals and curriculum, to better prepare teachers, and to redesign school organizations.

Dalin and Rust (1996) argued that schools are totally unprepared to help their students face the realities of the twenty-first century. They believe that students are faced with an ever increasingly complex world in which they need to define their lives. Schools should not, therefore, prepare for a given future, but first and foremost should help students ‘prepare for the unknown’. With this perspective, some learning needs become more important than others in order to develop these twenty first century skills. Moreover, in a recent paper by OECD-UNICEF (2016) on ‘What makes the school a learning organization’, it is reported that

> “Today’s schools must equip students with the knowledge and skills they will need to succeed in an uncertain, constantly changing tomorrow. But many schools look much the same today as they did a generation ago, and too many teachers are not developing the pedagogies and practices required to meet the diverse learning needs of 21st century learners” (p.1).

Furthermore, Darling-Hammond (2010) reported that the top ten in-demand jobs projected for 2010 did not exist in 2004, thus we are currently preparing many students
for jobs that do not exist, and using technologies that have not yet been invented to solve problems that we do not even know are problems yet.

Meanwhile, knowledge is expanding at a breath-taking pace. In 4 years from 1999 to 2003, the amount of new information produced equalled, approximately, the amount produced in the entire history of the world previously (Varian & Lyman, 2003). As a consequence, effective education can no longer be focused on the transmission of pieces of information that once memorized, comprise a stable storehouse of knowledge. Darling-Hammond (2010) believe that ‘education must help students learn how to learn in powerful ways, so that they can manage the demands of changing information, technologies, jobs, and social conditions’ (p.506).

With these important challenges in mind, schools worldwide need to reflect and reinvent themselves in order to meet the urgent needs of the modern era. Are our schools preparing students for future unknown challenges? Will the learning to-day be translated into meaningful knowledge and skills for future needs of the country? Governments in all countries invest a lot of money in their education sector in order to better prepare their people to serve their country. Are the schools prepared and are they contributing to this end? It becomes imperative for schools to reflect on how they are performing and how they can be better prepared to achieve these educational goals. The main actors, that is the school leader, heads of departments and educators need to be fully aware and be actively involved in this dynamic and ever changing process.
1.2. The Mauritian Context

1.2.1. The Ministry of Education

In Mauritius, education is governed principally by the Education Act and its regulations. The Ministry of Education plays an important role in order to fulfil the rapidly increasing social and economic demands for education. In this perspective, the Ministry of Education has a major role to play in the development of policies and papers so as to enhance the growth of other sectors which depend on a qualified work force. Broadly, the Ministry of Education has the following functions to fulfil:

1. To **make and implement policies** which are in line with the Education Act and its Regulations.
2. To **provide education** from pre-primary, to primary, to secondary and to tertiary level.
3. It acts as a **Regulator** in the sense that it ensures that the provisions made in the Education Act are adhered to and the education provided by the educational institutions is of high quality and geared towards employability in the global village.
4. It is also a **funder** of education. Funds for running of primary and secondary schools are provided by the Ministry as education is free in Mauritius.

In order to fulfil these functions, the Ministry of Education is administratively divided into several departments and works with a number of parastatal bodies. In addition, Mauritius is divided into 4 educational zones and each zone has under its purview primary and secondary schools.

1.2.2. History of Secondary Education in Mauritius

The education system in Mauritius is based upon the structure of the British education system. Mauritius has a 6-5-2 educational structure that is primary education of 6 years, at the end of which students sit for the Certificate of Primary Education (CPE) examination. This is followed by 5 years of secondary education leading to Cambridge School Certificate examination (SC) and a further 2 years leading to the Cambridge Higher School Certificate examination (HSC). Tupin (2010) describes the Mauritian
education as highly influenced by the process of globalization and the imposition of a schooling system from the Northern countries to the Southern countries. The education system in Mauritius favours the elite, starting at a very young age with the CPE examination which is highly competitive. As Tupin (2010, p.150) mentioned, for the CPE exams, 35 to 40% of the pupils fail each year and therefore cannot join a secondary school. (Many of these pupils are admitted to a prevocational school/class where they follow a different curriculum and there are also many drop outs)

The quality of education provided in Mauritius in the first part of twentieth century was quite bleak. Ramdoyal (1977) described learning in all schools at the beginning of the twentieth century as exclusively “bookish and literary”. At that time access to education was restricted to a selected few, mainly the descendants of the French colony. In 1948, Mauritius had a representative Assembly. The priority of the new politicians was to provide additional educational opportunity for those who had been denied the opportunity to go to school rather than to provide further education to those already in schools (Bhuwanee, 1999). Over the years, due to the commitment to ‘Education for All’, access to primary education was rapidly improved. A 48% growth in the number of children enrolled in primary schools in the short period of five years (1955 – 1960). This trend was further enhanced in 1968 when Mauritius became independent. In 1995 primary education was made compulsory. The demand for more education led to strong pressures for more secondary education, which had so far been provided by the British State schools and the Diocesian (confessional) schools. This led to the mushrooming of private secondary institutions of uneven standards. There were approximately 140,000 pupils enrolled in primary school and approximately 40,000 in the secondary sector (Bhuwanee, 1999).

In the 1970s, there were only seven state schools and seats in these schools were reserved for the winners of the Junior Scholarship and for pupils in order of merit after these winners. For these reasons, state schools, which comprised approximately 23% of the total secondary pupils, were regarded as better schools (Ramdoyal, 1977, p. 141). The large majority of students (77%) on their part were educated in private schools. These schools do not have the same elitist connotation as in the West. In fact, these schools are
of a lower standard and have been described as ‘more poorly resourced than the others’ (Bunwaree, 1994, p.121), ‘primarily designed to be profit making...The majority are, in effect, no more than factories for the mass production of certificate holders’ (Ramdoyal, 1977, p. 141).

In 1977, Government decided to make secondary education free for all students attending state, confessional and private schools. State secondary schools of good standards were built to cater for the high demand in the state schools and consequently, many private schools which were of lower standard had to close down. In the year 1975, Government of India funded the construction of the Mahatma Gandhi Institute which comprised of several schools (Music and Dance, Indian studies, Fine Arts) and the MGI Secondary School.

In the year 2003, the Government decided to abolish ranking at the level of CPE in order to eliminate the fierce competition at such a tender age for a child to secure a seat in a ‘good’ secondary school. According to the regionalization policy, the schools were divided into regional schools and national colleges. The elite schools were converted into national schools and admitted pupils all around the island purely on the basis of merit and the other schools became regional schools and admitted students based on two criteria: place of residence and merit. The allocation of seats in the schools is done by the Mauritius Examination Syndicate (MES). At the regional level also there are some high demand state and confessional schools and students are admitted to these schools based on demand. If a school is considered to be a good one, the demand increases, hence the chance to be admitted decreases. A grading system replaced ranking. To cater for more students in state schools, more schools were built including the Mahatma Gandhi secondary schools and Rabindranath Tagore secondary school.

Hence, secondary schools in Mauritius are of three types:

1. The state secondary schools and the 6 secondary schools of the Mahatma Gandhi Institute and the Rabindranath Tagore Institute (MGI/RTI).
   (The MGI/RTI secondary schools are administered both by the MGI/RTI council and the Ministry of Education. The MGI/RTI is a parastatal institution providing secondary and tertiary education)
2. The private secondary schools which are owned by individuals.
3. Confessional schools which are owned by the Catholic Church and other religious bodies (Arya Sabha, Hindu Faith, Muslim Faith).

The catholic confessional schools (17 in all) are managed by the Bureau D’Éducation Catholique (BEC) and they also follow the national curriculum as per the gentleman agreement between the government and the BEC. There are certain educational policies which are initiated by the BEC in order to better adapt the education to our local context and to improve its quality (Tupin, 2010); the example studied by Tupin is the use of the creole dialect (kreol morisien) as medium of instruction in the confessional prevocational sector (termed as Prevok-bek).

There are few fee-paying private secondary schools which do not follow the same curriculum as the above-mentioned schools. The private and confessional secondary schools are grant-aided schools. That means they get funds from the Ministry of Education and they are administered by the Private Secondary School Authority (PSSA) which is a parastatal body under the aegis of the Ministry of Education.

1.2.3. Secondary Schools in Mauritius

At present, there are 194 secondary schools, 188 in the island of Mauritius, 4 in the island of Rodrigues and 2 in the outer islands. 69 of these schools are state administered including the MGI/RTI schools. The other 125 schools are private and confessional schools including 19 fee paying secondary schools (Ministry of Education and Human Resources, 2011).

Secondary Education comprises lower secondary education and upper secondary education as per the International Standard Classification of Education (ISCED) (UNESCO, 2011). Lower secondary education is equivalent to ISCED level 2. It consists of 3 years of education: Form 1 to Form 3. A student is admitted in Form one after the primary education cycle at the age of 12. At the end of the primary cycle, students sit for the Certificate of Primary Education (CPE). Those who pass the CPE join the mainstream general education and those who fail join the prevocational stream which is located in the secondary schools. For lower secondary, there is a broad based curriculum.
After the lower secondary, there is a national exam which is still under piloting stage and applies only to state schools. Students who pass their form 3 examinations are promoted to upper secondary starting with Form 4. Upper secondary education is equivalent to ISCED level 3. For upper secondary, students choose their subjects, according to which stream they wish to pursue: Science, Economics, Art or Technical. After 2 years of upper secondary education, students sit for School Certificate (SC) examinations. Those who pass their SC are promoted to Form 6 and sit for Higher School Certificate (HSC) examinations after 2 years. That is upper secondary education covers 4 academic years of study. The top performers for HSC are awarded scholarships for their higher studies. The table below shows a layout of the secondary education in Mauritius.

**Table 1 Secondary Education in Mauritius**

<table>
<thead>
<tr>
<th>Secondary Education</th>
<th>Academic years</th>
<th>Examinations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Lower Secondary Education (ISCED level 2)</strong></td>
<td>Form 1</td>
<td>School based</td>
</tr>
<tr>
<td></td>
<td>Form 2</td>
<td>School based</td>
</tr>
<tr>
<td></td>
<td>Form 3</td>
<td>School based + National Examinations for state schools</td>
</tr>
<tr>
<td><strong>Upper Secondary Education (ISCED level 3)</strong></td>
<td>Form 4</td>
<td>School based</td>
</tr>
<tr>
<td></td>
<td>Form 5</td>
<td>School Certificate (SC) (National Examinations for all schools)</td>
</tr>
<tr>
<td></td>
<td>Lower 6</td>
<td>School based</td>
</tr>
<tr>
<td></td>
<td>Upper 6</td>
<td>Higher School Certificate (HSC) (National Examinations for all schools)</td>
</tr>
</tbody>
</table>

Students are admitted in a secondary school based on their results at CPE examination. Consequently, this leads to an intense competition to secure a seat in a ‘good’ secondary school.

State secondary schools have very good infrastructure and they are high demand schools. In general, the state secondary schools get the best students. Some confessional schools are also high demand schools and have very good infrastructure. Confessional schools admit only 50% of the number of students from the MES list and they choose the other 50% based on their own policy; hence they get both high ability and low ability students. The private secondary schools are of different standards. Some have good infrastructure and invest significantly in terms of resources and infrastructure, while others have the
minimum requirements to run the school. Generally, private schools enroll students of lower ability that is those who could not secure a seat in a state school. There are few exceptions where parents prefer some private schools.

The SC and HSC results of all schools are rendered public on the website of the Mauritius Examinations Syndicate (MES) and hence the schools are rated according to their performance at SC and HSC. What people consider as a ‘good’ school may not necessarily be an effective one, as the SC and HSC results depend to a large extent on the ability of the students admitted in Form 1. Logically, elite schools (mostly state schools) which get the best students will get better SC and HSC results as compared to schools admitting low ability students.

In Mauritius, research in the field of secondary education is very sparse. There are no internationally published research papers related to this field of study. The Ministry of Education usually carries out studies and present policy papers for action in order to adapt our education system to the country’s needs and in the context of globalization. Also, a few dissertations have been cited in order to better understand the realities of our education system.

In Mauritius, state secondary schools are in high demand compared to private schools for reasons mentioned above. However, Ramdoyal (1977, p.141) reported that ‘state secondary schools have become bureaucratic monopolies organized in a command and control hierarchy with a relatively demoralized workforce’. The quality of the state schools is being increasingly questioned as the School Certificate and the Higher School Certificate examination scores are no more commensurate with the quality of students that they enroll. Those who are admitted in state schools are among the best ranked in the country and yet the results do not reflect the quality of the intake (Bhuwanee, 1999).

In the research on quality education in Mauritian state secondary schools by Bhuwanee (1999), six schools, varying from low to high ability were studied. It was found that the two high achieving schools have the highest percentage of professional teachers and the other four schools have the same percentage of professional teachers. All secondary school teachers need to have at least an undergraduate degree to be appointed as
Education Officers (teachers). Some teachers have a Bachelor in education (B.Ed.) or Post Graduate certificate in Education (PGCE) at the time of appointment. However, the training of teachers at the Mauritius Institute of Education (MIE) is done on the basis of seniority. Thus, the senior most teachers have the first opportunity to be trained. The higher percentage of professional teachers in the high achieving schools suggests that they also have a higher percentage of more experienced teachers. Teachers usually join the teaching profession without any teacher training courses. They follow courses at the MIE while they are in service. However, recently, preference has been given to those who possess a professional degree, diploma or certificate in education.

Concerning the vision and mission of the school, except for one school where an attempt was made to develop a written mission statement, it was totally absent in the other schools; many are even ignorant of what a shared mission for the school is. Yet, there is a common mission seen in all schools that is to get students to pass examinations. This may not have been spelt out or developed by the school (but by the state). Nevertheless, it was there and powerfully shaped the behaviour of all parties (Bhuwanee, 1999). This shows that the schools are exam-oriented and great emphasis is laid on academic success.

Concerning the socio-economic status of the students in the six state schools, it was not found to be directly correlated to the school status in terms of achievement. The perception of teachers, parents and students on school effectiveness correlates were also studied. In all six schools, a large number of teachers saw vandalism and damage to school property as a problem. Concerning the school climate, students in general, were very harsh about their school condition and all schools scored a mean percentage of below 50%, showing that the schools were not perceived to have a positive school climate. The school which ranked first for school climate is actually a low achieving school, showing that though students are not performing well in examinations they feel happiest about the climate of their school. Regarding shared vision, the two average achieving schools scored highest, both by students and teachers. A low achieving school ranked first on clear learning goals and surprisingly the two high achieving schools ranked last on this correlate. These findings reflect the problematic nature of the state schools at the time of study.
Instructional leadership by the rector, in the form of feedback on instruction is provided most in a low achieving school and least in a high achieving school. The students are most pleased with the type of leadership in a low achieving school. ‘They agree that the rector contacts them informally, gives them feedback on instruction, and is accessible to discuss instructional matters with them’ (Bhuwanee, 1999). An analysis of the six schools in the study suggests that there is a serious absence of proper monitoring and evaluation in all the schools. The rectors do not feel directly involved in monitoring the teaching and learning process at classroom level. In the two high achieving schools, ‘parents and students are aspiring for a different type of leadership that fosters shared vision, that develop values, that seeks improvement, that builds relationships and that develops collaboration(p.422)’. The school leadership also reveals some lacuna and lack of support to the school community which is felt by the stakeholders.

Concerning collaboration, it has been reported that:

‘There is some teamwork among teachers in the average achieving schools, and none at all in the other schools. In fact, in the high achieving schools, there is not only an absence of cooperation and sharing but also a strong competition, even some kind of rivalry, among teachers, who use the school and the system for personal gain and to attract more students for private tutoring’(p.368).

Bhuwanee (1999) also found that group learning and interactive teaching are totally absent in all the schools including the high achieving schools. Actually, these schools are examples of long-lasting culture that fosters competition rather than cooperation. It is also noted that teaching practices promote individualism and competition both among teachers and students. According to these findings, we can say that the collaborative culture is not promoted; on the contrary it is prevented due to the competition which exists among the students and teachers.

Moreover, teachers complained of a lack of staff development. Bhuwanee (1999) concluded that in the absence of all types of such development, and in the absence of other forms of self-learning and team learning from colleagues, the teachers focus only on completing the syllabus. How far students learn and how much learning takes place does not seem to be the concern of most stakeholders at school. This is the main reason why most parents feel the need to send their children for private tutoring in almost every
subject that the students have to take for SC and HSC examinations. This gives a bleak image of secondary education in Mauritius, whereby the main concern of students, teachers and parents is to pass the SC and HSC examinations. Learning is reduced to success in examinations instead of its broad sense: the development of skills, attitudes and competencies which can be applied in new situations.

The transfer of rector and teachers is seen as quite alarming. Five of the six schools studied have had a change of rectors at least twice in the last five years and all rectors complained that they lose at least 15% of their teaching staff every year as a result of transfer. This is the situation in the state secondary schools. It disrupts the smooth running of the school and prevents the follow up of the actions taken at the school level.

These findings give an alarming picture of the state schools in Mauritius. The Ministry of Education is already aware of this situation and has shown a willingness to do away with the actual system and replace it with a more viable one (Action Plan, 1998). It is reported that the schools need complete restructuring of the system. A paradigm shift is necessary for the reforms to be meaningful and effective.

Over the last 15 years, a number of initiatives have been taken at the level of the Ministry of Education in order to improve all secondary schools in terms of access, equity and quality. The latest education policy paper which aimed at reengineering the whole education system and adapting it to the fast changing world is the ‘Strategy Plan 2008-2020) following which the new reform: the nine year continuous basic education (NYCBE) is based. The NYCBE will be discussed at a later stage.

In a dissertation, Teckmun (2007) investigated the influence of leadership styles of rectors on Mauritian secondary schools’ climate and effectiveness. He found that in schools under democratic leadership, students and personnel have a strong sense of belonging to the school. In such cases, students and teachers are motivated to the extent of improving discipline on themselves so as to raise the standard of the school. Moreover, working together towards school goals is a motivating factor for all stakeholders at school.
In 2014, Goodoory carried out a case study on the role of the rector in motivating educators of state secondary schools in Mauritius. He reported that the rectors studied do not seem to be very much aware of the importance of motivating staff. He proposed that it is important to consider how rectors can sharpen their efforts or endeavours to promote teacher motivation and to make teachers feel how important they are in the attainment of school goals and functions. Once again, the rectors do not seem to be assuming their roles fully and their support to the school community need to be improved.

Secondary schools in Mauritius have evolved over the years and have tried to adapt to the multiple demands in terms of policies and decisions from the Ministry or internal improvement plans. However, there is a yawning gap between educational policies and their implementations at the grass root level in the schools. Based on the Strategy Plan 2008-2020, a new reform project is being implemented in the primary and secondary schooling sector. This is the nine year continuous basic education reform which is changing the educational landscape especially in the secondary education sector.

*The Nine Year Continuous Basic Education (NYCBE) Reform*

The NYCBE reform in the education sector is aligned with the Sustainable Development Goal 4 which is to ensure inclusive and equitable quality education for all and promoting lifelong learning. It is in line with the vision 2030 of the government (making Mauritius attain high income country status by 2030) to provide highly skilled human resource. It makes provision for all students to successfully complete nine years of basic schooling; that is six years of primary schooling and three years of secondary schooling.

The NYCBE reform is based on six major pillars, namely, Curriculum Change, Innovative Pedagogies, Meaningful Assessment, Continuous Professional Development, Conducive Learning Environment and System Governance and Accountability.

The reform is expected to eliminate the excessive competition generated by the CPE examinations. The CPE will be replaced by the Primary School Achievement Certificate (PSAC). There will be no failures and all students will move automatically to a secondary school for three years, at the end of which there will be a national examination. The
reform also caters for the slow learners where they will be provided with additional pedagogical support.

The national colleges will be converted into academies and will admit the best students after nine years of basic education. After nine years of basic education, a student will have three options; either stay in his/her secondary school to continue the secondary schooling, or move to an academy if he/she has got very good results or move to the vocational stream if he/she cannot continue in the academic stream.

The NYCBE reform therefore, aims at improving student learning at all levels and providing all support for effective teaching and learning and continuous improvement of schools. The implementation of the reform has started in the primary sector with major changes in the curriculum and assessment. As from this year (2017), the CPE will be replaced by the PSAC. As from the year 2018, major curricular changes will take place in the secondary sector.

To what extent will this reform agenda be realized? It will depend a lot on the implementation process, the competencies and commitment of all actors across the educational landscape. The school leaders, heads of departments and educators are the key players.

1.2.4. Secondary School Management

Secondary school management is guided by the educational act and educational policies. The Ministry of Education and Human Resources controls the development and administration of state secondary schools funded by the government and also has an advisory and supervisory role in respect of private secondary schools. State secondary schools fall directly under the responsibility of the Ministry. The MGI/RTI secondary schools which are considered as state school are also managed by the schooling sector of the MGI/RTI and are accountable to the MGI/RTI council. Private and confessional schools are managed by the PSSA. Confessional schools are also accountable to the Bureau d’Education Catholique (BEC). The BEC is the executive office of the Roman Catholic Diocese of Port-Louis for its education services. It is a private partner of the Ministry of Education and Human Resources. In its bid to alleviate poverty through
education, the catholic education sector has, in its admission policy, put emphasis upon the preferential option for the poor.

**State Secondary Schools**

The Ministry of Education functions with a central structure at its Headquarters having the responsibility of Education and Human Resources at the national level, along with decentralized structures or Zone Directorates set up to manage education in the four geographical zones of education. The state secondary schools fall under the 4 educational Zones and are managed by the Zone Directorates.

![Organizational Chart: Zone Directorates and Schools](School Management Manual, 2009)

The **four Zone Directorates** are headed by the Zone Directors who are responsible for all matters pertaining to their respective Zones and especially, for the smooth running of the state schools falling within their purview. With the decentralization of services, the following sections have been set up in each Directorate:

- Human Resource Section
- Finance Section
- Stores and Procurement Section
- Maintenance Unit
- Educational Psychologists and Social Workers Unit

The *School Management Manual* (2009) has been prepared to help Rectors of state secondary schools in their duties. They should stand guided by this document whereby it is stated that:

- *The Rector is responsible for his own school but has to report to the Zone Director.*
- *The Ministry has to be constantly kept informed through the Director of Zone, of the running of the school and of its performance.*
- *The Rector will relate to the Zone Director for all issues pertaining to decentralized services and procedures.*
- *Heads of Schools are empowered and, at the same time, required to take necessary action at their end towards solving problems at their level. Problems should be referred to the Director of Zone only when the means required are beyond the school’s capacity or resources.*

**Private secondary Schools**

Private Secondary Schools play an important role in the education sector in Mauritius, Rodrigues and Agalega by providing education to some 64040 students. Their overall administration of pedagogical activities and disbursement of grants rest upon the Private Secondary Schools Authority (PSSA), a corporate body operating under the aegis of the Ministry of Education and Human Resources. Private schools are of three main types:

1. Private Schools owned by the manager and are grant-aided. They are not fee paying.
2. Confessional Schools which are not fee paying.
   (Both private and confessional schools are under the responsibility of the PSSA).
3. Private Fee paying secondary schools which follow a different curriculum and are not under the responsibility of the Ministry of Education. They have their own school board and examination system.

**Managing the Secondary School**

The School Management Manual (2009) is a management tool for Rectors of state and private secondary schools. Therefore, the management of state and private secondary schools has many things in common (except for the fee paying private schools).
The Rector is accountable to the higher authorities as well as to the community. As the leader, the rector builds and accompanies his team, providing them with the required support and motivation, listening to their views and their problems and valuing their effort, support and contribution.

It is clearly specified in the manual that:

“The rector is responsible for facilitating the implementation of all reforms and educational policies with a view to attaining the national goals for education. These would also include the targets set in the PBB (Project Based Budgeting).”

The Rector has to perform his various duties which are of three kinds: administrative, pedagogical and socio-cultural.

*Administrative:* Setting up of committees, attending and chairing meetings, attending to files, organizing work supervising staff, organizing examinations, enforcement of Rules and Regulations, management of human, financial, material and infrastructural resources.

*Pedagogical:* Controlling the implementation of the curriculum, planning, organizing and monitoring of teaching and learning and other educational activities, management of learning resources and ensuring the quality of the education imparted at school.

*Socio-cultural:* Promoting health standards, enhancing school environment, promoting culture and social values at school and developing partnership with the community (School Management Manual, 2009).

The Deputy Rector provides assistance and support to the Rector for the smooth running of the school. His duties comprise: linking between rector and staff, attending day to day activities, organizing and conducting internal examinations, helping in organizing academic and non-academic activities and enforcing discipline. A clear assignment of roles and responsibilities mutually discussed and agreed upon by the Rector and Deputy Rector is expected.

A number of school bodies help in the school management. The *School Management Team* (SMT) comprises of the Rector, Deputy Rector and Senior members of the teaching staff. They are expected to meet at least once per month. The role of the SMT is to create
and implement a shared vision within the school community. It helps the Rector make important decisions regarding school policy and orientation. It also helps in the formulation of the School Development Plan (SDP) that will usefully direct actions at the level of the school.

The student council is a student body comprises of members who have been democratically elected by the students themselves, in such a way that each class has a spokesperson. Its purpose is to ensure a smooth flow of information between management and students. It is expected to promote positive relationships as the basis of a whole school culture. It assists the management and ensures the good running of the school by working in close collaboration with the Rector, Deputy Rector, Form Teachers, Usher, Head Boy/Girl and Class Captains. It expresses the opinions and feelings of fellow students and share their problems, concerns, wishes and expectations with management. It participates in the organization of school activities.

All parents are de facto members of the Parent Teacher Association (PTA). The Managing Committee comprises a given number of parents elected during an Annual General Assembly and a given number of educators as defined in the Association’s constitution. The role of the PTA is to promote the welfare of the students, to provide support to the school and help towards enhancing its physical environment, equipment and other facilities. Meetings are usually convened every month.

The school is an open system connected to and interacting with its environment. It is important that schools develop dynamic partnerships with the community, enlisting its support in the accomplishment of its mission.

School Management is headed by the Rector. As a manager of the school, the Rector has to attend to two very important tasks among others: planning and controlling the activities of the school (School Management Manual, 2009). School management needs to establish effective communication channels and make use of these to favour proper communication among all stakeholders. Management and all staff, particularly the teaching staff, are responsible for establishing the rule of discipline in the school. A
number of school committees help in managing the school effectively as shown in table 2 below.

<table>
<thead>
<tr>
<th>Committee</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disciplinary Committee</td>
<td>To help the Rector in addressing problems of indiscipline.</td>
</tr>
<tr>
<td>Prefect Body</td>
<td>To help the Rector and educators in maintaining discipline among the</td>
</tr>
<tr>
<td></td>
<td>student community.</td>
</tr>
<tr>
<td>Pastoral Care Committee</td>
<td>To provide support to help students improve their behaviour through</td>
</tr>
<tr>
<td></td>
<td>counselling services.</td>
</tr>
<tr>
<td>Pedagogical Committee</td>
<td>To help towards the improvement of teaching and learning by providing</td>
</tr>
<tr>
<td></td>
<td>feedback, advice and guidance to educators.</td>
</tr>
</tbody>
</table>

*Other School Committees can be set up at the discretion of the Rector*

Heads of Departments (HODs) are designated on a seniority basis from amongst educators. The HODs have to fulfil a variety of functions leading to an improvement in the quality of teaching and learning. The Head of Department is expected to hold regular meetings with members of his department to discuss both administrative and pedagogical issues. The important roles of the HODs are:

- To select textbooks from prescribed lists and other materials for his department.
- To ensure that the assessment process is efficient and purposeful.
- To provide help to the Rector for the organization and smooth running of examinations.
- To plan strategies for improvement.
- To organize and ensure the participation of members in co- and extra-curricular activities.
- To keep abreast, and keep the Rector informed of developments in his area.
- To tender pedagogical advice and act as a mentor to new recruits.
- To accompany the Rector/Deputy Rector for class visits as and when requested to do so.
- To advise the Rector on the efficient and effective utilization of all resources found in the department.
- To encourage innovative teaching methods. (School Management Manual, 2009)

It is also stated in the School Management Manual that the Rector has to identify the developmental needs of staff at all levels and this needs to be reflected in the school Development Plan. Necessary steps should be taken to see to it that opportunities are
provided to all staff members to carry out such duties as will give them experience and enhance performance.

Physical Asset Management is the planning, acquisition, maintenance and disposal of physical assets with due regard to economy, effectiveness and efficiency. Rectors are clearly instructed that this should be in full compliance with applicable government regulations and policy directives.

Rectors are also responsible for the management of funds available to the school to ensure proper and judicious use of financial resources. Imprest money is issued to the Rector to meet expenses such as petty expenses, purchase of goods urgently required and minor works and repairs. Grants are given to the PTA to support school activities.

Mauritius is a developing country which relies a lot in its human capital. Education is therefore, an important aspect and is a priority for the government. Many changes and improvements have occurred in the educational landscape in the past 40 years. We have seen a lot of progress, but still some aspects of the education system are hard to transform. The education system is still very academic and competitive. There is a fierce competition to secure a seat in a ‘good’ secondary school. Because of the competition, students rely a lot on private tutoring in order to achieve their best for the School Certificate (SC) and Higher School Certificate (HSC) examinations.

The aim of this study is to find out how the secondary schools are performing and how the school conditions influence the level of school effectiveness. School effectiveness depends on the school factors including school leadership. One important aspect is the collaborative work focusing on student learning which leads to continuous improvement. It leads to effective teaching and learning. Comparing this aspect in the different types of schools and relating it to the level of school effectiveness will enable us to understand how the schools are functioning.
1.3. School Effectiveness

There is no fixed definition of school effectiveness as there are different expectations from the various stakeholders: teachers, students, parents, school administration, Ministry of Education and the community. Yet, school effectiveness is seen as directly linked to performance, success and results. School effectiveness is becoming increasingly important in to-day’s context, bearing in mind the international and the national demands where accountability is key. According to Uline, Miller & Tschannen-Moran (1998), it has been difficult to conceptualize because it is a complicated construct. It is multifaceted. However, where schools are concerned, the measures used most often are standardized tests of student achievement because virtually everyone agrees that the mastery of basic skills is an important component of effective schools.

1.3.1. School Effectiveness Models

School effectiveness literature spans three decades and a number of extensive reviews already exist (Good & Brophy, 1986; Bryk & Smith, 1993). The purpose here is to chronicle the literature based on conceptual underpinnings and empirical findings; and to relate it to the modern view of school effectiveness.

Early research in school effectiveness, according to the Coleman Report (1966), claimed that teachers, schools and fiscal resources had minimal or no effect on student achievement. Student background was seen as the most powerful determinant of achievement (Coleman, Campbell, Hobson, McPartland, Mood, Weinfield & York; 1966). Subsequent studies during the 1970s revealed substantial evidence that schools do, in fact, make a difference (Stringfield & Herman, 1996).

Continuing on into the 1980s, several researchers considered school inputs such as enrollment, ethnic composition of students and staff characteristics as well as school level processes emphasizing the importance of consensus regarding school goals, instructional leadership, opportunities to learn, school climate, staff development, collegial teacher interactions, shared governance and parental involvement (Purkey & Smith, 1983; Oakes, 1989 & Cohen, 1986). Contemporary studies by Hoy and Miskel (1982, 1991, and 1996)
recognized the complexities of appraising a school’s effectiveness and suggested a synthesis of two commonly applied models- \textit{the goal model and the systems model}. According to a goal model, schools are effective to the degree that they achieve established goals. A systems model speaks to individual actors and to the organic nature of the school; it views a school in terms of growth and survival and evaluates effectiveness as a dynamic process. Hoy and Miskel saw these two models as complementary and interrelated. The Hoy-Miskel model included four additional organizational characteristics: the time dimension, organizational levels, the voices of multiple constituent groups, and multiple criteria on which to judge effectiveness. Hoy and Miskel model proposed four properties of organizational effectiveness as manifested by schools: organizational adaptation, organizational productivity, organizational cohesiveness, and organizational commitment. This model supports Scheerens (1992) five alternative effectiveness criteria: productivity, adaptability, involvement and satisfaction, continuity and responsiveness to external stakeholders.

The Hoy-Miskel model together with other models (Parson 1960; Mott, 1972; Etzioni, 1975) have been useful in conceptualizing school effectiveness. In the late 90’s, Uline, Miller & Tschannen-Moran (1998) proposed a School Effectiveness Model with two functions - the expressive and the instrumental as illustrated in Figure 2.
Expressive Activities
Uline et al. see trust as a vital element in well-functioning organizations. Furthermore, Cunningham and Gresso (1993) claim that “trust is the foundation on which school effectiveness is built” (p.121). The factors that lead to trusting relationships also facilitate school effectiveness. Healthy interpersonal relationships have been related to both faculty trust and to student achievement. As the culture of the school becomes more cohesive, it becomes more open and trust is reinforced (Hoy, Sabo & Barnes, 1996). The authenticity of principal and teacher behaviour relate to faculty trust and according to Tschannen-Moran & Hoy (1997), the construct of trust is one worth exploring when examining the effectiveness of schools.

School health is its own reward. Hoy, Tarter & Bliss (1990) emphasize that a healthy school is a place where people enjoy spending their days, rather than a place to be endured. They link the organizational health of a school to such important outcomes as higher student achievement.
**Instrumental Activities**
When school effectiveness is reduced to a single variable, it is generally student achievement. Although effectiveness is a multifaceted construct, if students are not performing at a high level it would be difficult to make a convincing case that the school is a high-performing organization. School effectiveness is also related to many other outcomes such as social-emotional growth of students, satisfaction of teachers, efficient use of resources, innovativeness, adaptability, and goal accomplishment (Cameron & Whetten, 1995; Hoy & Miskel, 1996).

Uline, Miller & Tschannen-Moran (1998) analysed the correlations between overall school effectiveness and instrumental and expressive measures using the statistical $t$-test in secondary school in New Jersey. They obtained a significant correlation (ranging from $r = 0.56$ to $0.72$) for both instrumental and expressive measures. However the expressive measures were more varied with teacher trust in colleagues and most highly correlated with effectiveness ($r = 0.72$). They concluded that instrumental as well as expressive activities help to make schools effective. Student achievement, faculty trust, and organizational health all are indicators of a school’s effectiveness. They consider both quantity and quality, both action and perception to be measures of school effectiveness.

1.3.2. School Effectiveness Correlates
Few authors in the 1990s (Lezotte, 1991; Sammons, Hillman & Mortimore, 1995; Cotton, 1995) argued that some unique characteristics of the majority of effective schools are correlated with student success; these characteristics are referred to as correlates by these researchers. The correlates are the means to achieving high and equitable levels of student learning. Moreover, the Association of Effective Schools (1996) found that when school improvement processes based upon the effective schools research are implemented, the proportion of students that achieve academic excellence either improve, or at the very least, remains the same.

The seven common correlates include: clear school mission, high expectation for success, instructional leadership, opportunity to learn and time on task, safe and orderly environment, positive home-school relations and frequent monitoring of student progress.
The vision and the mission of the school need to be well communicated among the school community for effectiveness. Lezotte (1991) proposed that in effective schools “there is clearly articulated school mission through which the staff shares an understanding of and commitment to instructional goals, priorities, assessment procedures, and accountability” (p.6). Haberman (2003) puts the onus on the principal to create a clear school mission. Goodman (1997), on the other hand, emphasizes the role of teachers; he believes that teachers should be partners with the principal in creating the vision or they may even be the sole creators.

A climate of high expectations promotes learning in schools. Lezotte (2001) further argues that the climate of high expectations in which the staff believes and demonstrates that all students can succeed leads to effective schools. Lezotte (2001) also states that the school climate in effective schools is not oppressive and is conducive to teaching and learning. Desirable behaviours such as “cooperative team learning”, “respect for human diversity”, “an appreciation of democratic values” (p.2) are necessary in order to create a safe and orderly environment. Teachers according to him must also model these desirable behaviours.

Teacher professional development and commitment add to school effectiveness. Johnson (1997) stated that effective school movement emphasizes teacher excellence, collaboration, and mentoring so that schools become places where students can learn, grow and improve.

Instructional leadership given by the principal is essential. Lezotte (2001) explains that in the effective school, the principal acts as an instructional leader; he effectively and continually communicates the mission of the school to staff, parents, and students. In addition, he understands and applies the characteristics of instructional effectiveness in the management of the instructional program. Lezotte refers to the principal as the “leader of leaders”, empowering teachers and including them in decisions about the school’s instructional goals.

The teaching and learning process is the key for success. Lezotte (2001) further states that knowing what to teach and providing adequate time to teach are essential for
effective instruction. In the effective school, teachers allocate a significant amount of classroom time to instruction in the essential curricular areas. For a high percentage of this time, students are actively engaged in planned learning activities.

1.3.3. General Consensus on School Effectiveness

In literature reviews as discussed in this section, there appears to be considerable consensus on the factors that are seen as effectiveness enhancing conditions at school and classroom level. A summary and comparison of the models illustrate the picture of school effectiveness as seen by the various authors. Hoy & Miskel (1982), Purkey & Smith (1983), Levine & Lezotte (1990), Scheerens (1992), Sammons, Hillman and Mortimore (1995), Cotton (1995) and Uline, Miller & Tschannen-Moran (1998) provide adequate representation of this growing consensus. A summary and comparison of the seven models is given in Table 3.

This general consensus is further reinforced by recent studies. Robinson, Lloyd & Rowe (2008) support the school effectiveness models given in table 3. They elaborated that leadership that ensures an orderly and supportive environment makes it possible for staff to teach and students to learn. Teacher professional learning sustained the changes required for improved outcomes.
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<tr>
<td>Goals</td>
<td>Goal model/established goals</td>
<td>Consensus on school goals</td>
<td>Consensus on school goals</td>
<td>Shared vision and goals</td>
<td>Planning and learning goals</td>
<td>Planning and learning goals</td>
<td>Social and emotional growth of students</td>
</tr>
<tr>
<td>Learning</td>
<td>Opportunities to learn</td>
<td>Effective instructional arrangements and Focus on central learning skills</td>
<td>Concentration on teaching and learning</td>
<td>Assessment (district, school, classroom level)</td>
<td>Professional development / collegial learning</td>
<td>Professional development / collegial learning</td>
<td>Teacher satisfaction / Adaptability</td>
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<tr>
<td>Monitoring</td>
<td>Appropriate monitoring satisfaction</td>
<td>Monitoring progress</td>
<td>Classroom management and instruction</td>
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<td>Staff Development</td>
<td>Organizational commitment</td>
<td>Staff characteristics and development</td>
<td>Practice-oriented staff development</td>
<td>Involvement</td>
<td>A learning organization / Purposeful teaching</td>
<td>Professional development / collegial learning</td>
<td>Teacher satisfaction / Adaptability</td>
</tr>
<tr>
<td>Leadership</td>
<td>Organizational adaptation</td>
<td>Instructional leadership, shared governance</td>
<td>Outstanding leadership</td>
<td>Adaptability</td>
<td>Professional leadership</td>
<td>Leadership and school improvement</td>
<td>Innovativeness</td>
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<tr>
<td>Parental Commitment</td>
<td>Voices of multiple groups</td>
<td>Parental involvement</td>
<td>Salient parent involvement</td>
<td>Responsive to external stakeholders</td>
<td>Home-school partnership</td>
<td>Parent community involvement</td>
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<tr>
<td>Climate and Culture</td>
<td>Organizational cohesiveness</td>
<td>School climate / Collegial teacher interactions</td>
<td>Productive climate and culture</td>
<td></td>
<td></td>
<td></td>
<td>trust / cohesive culture / Healthy interpersonal relationships</td>
</tr>
<tr>
<td>Structure</td>
<td>Systems model / Organizational productivity</td>
<td>Student factors / enrolment</td>
<td>Effective instructional arrangements</td>
<td>Productivity</td>
<td>Curriculum planning and development / Special programs</td>
<td>Efficient use of resources</td>
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<td>High expectations</td>
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1.3.4. Measures of School Effectiveness

The term *input-output* in research on school effectiveness was introduced in late 1980s and is very relevant to day, as schools are being assessed based on certain performance criteria. According to Hanushek (1989) quantifiable school-related characteristics are mostly taken as school inputs and student achievement test scores are mostly taken as a measure of school output. In the wake of quality education, national and international initiatives to measure school effectiveness have been put in place. Two bodies which are directly linked to assessing school effectiveness are Program for International Student Assessment (PISA) and Organization for Economic Co-operation and Development (OECD).

Research shows conflicting views on how school inputs are related to student achievement. Ferguson (1991), Goldhaber & Brewer (1997) and Darling-Hammond (2000) through meta-analyses showed that variables such as student-teacher ratio, teacher certification, education and experience, and per-student funding are associated with student achievement. On the other hand, Program for International Student Assessment (PISA, 2000), Organization for Economic Cooperation and Development (OECD, 2001) and Hanushek (1989) found that many of these input-output variables played a very small role in explaining student achievement. However, Hanushek (1989) considered that existing measures of school inputs are likely to be inadequate to fully capture the true effects on schools. Scheerens (2000) believed that most input-output studies assume a simple and direct relationship between inputs and outputs, while Hill & Rowe (1998) and OEDC (2001) found that none of the factors relate to school climate, teacher autonomy and morale, and school resources are associated with student achievement. Creemers (1994); OECD (2001) and Willms & Somers (2001) positively associated student achievement to classroom climate that is an orderly, disciplined atmosphere where students are attentive during the lesson.

How is student achievement measured in such a way to reveal all its important facets? This has always been a subject of controversy and different stakeholders have different views. According to Hopkins (2001), there is a strong debate among educators on what
should count as an outcome, whether it should be limited to student achievement on tests or if it should try to capture some elements of the quality of student learning.

**School Factors**

Recent studies on school effectiveness have focused more on specific school variables as determining factors. In his study, Heck (2009) tried to find out to what extent the school factors impact on school effectiveness. A survey was carried out in public schools in the USA which involved staff and students. The survey data were used to develop a weighted factor score \((M=0.01, SD=1.03)\) comprised of the six indicators which measure the quality of the school educational processes. The results in table 4 show a strong positive correlation given by the large positive coefficients of alpha \((\alpha)\) for all school indicators. Nevertheless, the most important school factor is shown to be parent-school relationships and the least to be principal leadership.

<table>
<thead>
<tr>
<th>School Indicators</th>
<th>Weighted factor score((\alpha)) ((M=0.01 \text{ and } SD=1.03))</th>
</tr>
</thead>
<tbody>
<tr>
<td>Principal leadership</td>
<td>0.80</td>
</tr>
<tr>
<td>Teacher practices in monitoring of student progress</td>
<td>0.83</td>
</tr>
<tr>
<td>School expectations for student achievement</td>
<td>0.84</td>
</tr>
<tr>
<td>Emphasis on academics</td>
<td>0.86</td>
</tr>
<tr>
<td>School climate</td>
<td>0.89</td>
</tr>
<tr>
<td>Parent-school relationships</td>
<td>0.90</td>
</tr>
</tbody>
</table>

Table 4. School Indicators and their perceived effectiveness

Since school effectiveness is directly related to student achievement, it becomes essential to understand how school effectiveness can be improved. Based on literature school leadership and school effectiveness are believed to be closely related.

1.3.5. Relating School Leadership to School Effectiveness

It is shown that there is strong evidence from many studies that school leaders play a key role in the effectiveness of schools. Yet, there are some disagreement concerning the belief that principals have a direct impact on the lives of teachers and students. According to Hallinger and Heck (1996): ‘The relationship is complex and not easily subjected to empirical verification’ (p.8).
The belief that principals have an impact on schools is long-standing. Studies conducted in recent decades lend empirical support to this statement. Gardner (2000) argued that school leaders should be able to carry out both tasks of a manager and a leader. According to him, a school leader thinks long term and in terms of renewal, putting emphasis on the intangibles of vision, values and motivation and at the same time plans, organizes and evaluates short term and day-to-day activities for the good running of the school.

Different researchers have identified strong leadership as one of the most important factors of effective and successful schools (Bel, Bolam and Cabrillo, 2003; Dinham, 2005; Fullan, 2001; Mortimore, 1993; Townsend, 2007). Day, Harris, Hadfield, Tollet & Beresford (2006) found the quality of school leadership as one of the major factors which affects teachers’ commitment and their motivation to remain at or leave school. Furthermore, Hopkins (2001) and Sammons (1999) argued that quality of leadership positively enhances teaching and learning. Wallace (2002) stated that school leadership has a significant impact upon school effectiveness and school improvement. However, distinction needs to be made between certain declarations and empirical proofs obtained as a result of some scientific studies.

Sergiovanni (1984) noted that school leadership has several aspects, each of which contributes uniquely to school competence and to school excellence. He described competence as marked by mastery of certain predetermined, essential fundamentals whereas excellence is multidimensional and holistic, whereby teachers and students work together with spirit; and accomplishments are readily recognized. Furthermore, parents and teachers provide a more expansive view of excellence, which includes developing a love for learning, critical thinking and problem-solving skills, aesthetic appreciation, curiosity and creativity, and interpersonal competence. Sergiovanni (1984, p.6) focuses on how leadership forces are linked to school effectiveness and excellence. He proposed five forces of leadership that contribute to excellence in schools:
• **Technical**: good knowledge of planning and time management technologies, contingency leadership theories and organizational structure;

• **Human**: human relationships linked to motivation theories and interpersonal competence, conflict management and group cohesiveness;

• **Educational**: including professional and pedagogical knowledge and bearing, teaching effectiveness and clinical supervision;

• **Symbolic**: which provides guidance, modelling, monitoring and mentoring; and

• **Cultural**: that is articulate school purpose and vision; reinforce climate, culture and values to create a highly motivating and enabling environment (Sergiovanni, 1984).

There is a plethora of research that indicates the significant effect of school leadership on students’ outcomes (Bishop, 2004; Leithwood, Day, Sammons, Harris & Hopkins, 2006; Leithwood, Seashore, Anderson and Wahlstrom, 2004; Marzano, Waters and McNulty, 2005; Mulford and Silins, 2003). Leithwood and Jantzi (2000) argued that effective leaders employed an **indirect** but powerful influence on school effectiveness and students’ achievement. Caldwell, Calnin and Cahill (1998) demonstrated that head teachers played a key strategic and empowering role in linking structural aspects of reform to teaching learning process and students’ outcomes.

However, according to Scheerens (2012), what is notoriously lacking in most of the earlier indirect effect studies is the inclusion of well-defined and objectively measured instructional conditions. The connection to comprehensive educational effectiveness models have not been made in the major empirical leadership studies, until very recently. He refers to studies by Ten Bruggencate *et al.* (2010) and Heck and Moriyama (2010), where according to him, there is a better integration between leadership effects studies and model driven educational effectiveness. However, he further argues that

“critical questions should be raised about how exactly school leaders can, most effectively support teaching effectiveness, how much to be expected from “people strategies”, like consensus building and how much from direct support and coordination of curriculum and instructional conditions and optimization of internal evaluation and monitoring practices” (p.135).
The relationships between school leadership and school effectiveness have been supported by these studies and it is shown that a strong school leadership is crucial to increase the school’s level of effectiveness. However, many of the ideas are simple declarations and are not supported by empirical evidence. We cannot therefore, draw general conclusions based on these researches. Moreover, as stated by Scheerens (2012), there is no evidence on how exactly school leadership influences school effectiveness. We need to understand clearly in the ways the school leader is acting in terms of the leadership activities and capacities.

1.3.6. Impact of Leadership on Student Outcomes

Literature reviews reveal a close link between school leadership and school effectiveness as shown in the previous section (1.3.4). Studies by Bell, Bolam & Cubillo (2003); Leithwood, Day, Sammons, Harris & Hopkins (2006); Leithwood, Seashore Louis, Anderson & Wahlstrom (2004); Marzano, Waters & McNulty (2005); and Witziers, Bosker & Krüger (2003) show the direct and indirect effects of leadership on student outcomes.

There is an international interest in the links between leadership and student achievement, since it can be used by policy makers to reduce disparities and to foster school improvement. This fact is supported by the “Organization for Economic Co-operation and Development (OECD) (2001). OECD (2008) sees school leadership as a priority in education policy agendas across OECD and partner countries because it plays a key role in improving classroom practice. It is also reported that within each individual school, school leaders contribute to improve student learning by shaping the conditions and climate in which teaching and learning occur. Further, literature on sustainability also sees the quality of school leadership as a key to continued organizational learning and improvement (Datnow, 2005; Hargreaves & Fink, 2006).

However, according to Witziers et al. (2003) the picture one gains from the qualitative evidence for the impact of leadership is very different from that gained from quantitative analyses of the direct and indirect effects of leadership on student’s academic and social outcomes. From quantitative data, Witziers et al. (2003) reports a very weak or no impact. Subsequent quantitative research has conceptualized the relationship between
leadership and student outcomes as indirect, with leaders establishing the conditions (e.g. provision of teacher professional learning opportunities, forms of student grouping) through which teachers make a more direct impact on students (Marzano et al., 2005). Hallinger & Heck (1998) concluded from quantitative researches that school leaders have small and indirect effects on students’ outcomes that are essentially mediated by teachers.

Leithwood and Jantzi’s (2008) study aims to extend the understandings about how successful leadership at the state, district and school levels improves student learning. They explored the nature, causes and consequences of leader self-efficacy (LSE) and leader collective-efficacy (LCE), including indirect influences on student learning through a quantitative analysis in 180 schools in 45 districts in America. They found that LCE is moderately associated with school conditions (.26) but LSE has no such association. LSE explains 12% of the variation in leader behaviour. Together, LCE and leader behaviour explain 58% of the variation in school conditions. This model suggests both direct effects of school conditions on student learning (.40), as well as indirect effects through classroom conditions (.87) even though there is an insignificant relationship between class conditions and achievement. School conditions explain 57% of the variation in class conditions. The model as a whole explains 19% of the variation in student achievement.

Robinson, Lloyd & Rowe (2008) studied the impact of particular types of leadership on student outcomes. The comparison between instructional and transformational leadership through quantitative analysis shows that the impact of the former is three to four times that of the latter. According to their study,

“The reason is that transformational leadership is more focused on the relationship between leaders and followers than on the educational work of school leadership, and the quality of these relationships is not predictive of the quality of student outcomes. Educational leadership involves not only building collegial teams, a loyal and cohesive staff, and sharing an inspirational vision. It also involves focusing such relationships on some very specific pedagogical work, and the leadership practices involved are better captured by measures of instructional leadership than of transformational leadership” (p.665).
Robinson et al. (2008) consider goal setting as a powerful leadership tool in the quest for improving valued student outcomes as it signals to staff that even though everything is important, some activities and outcomes are more important than others. Without clear goals, staff effort and initiatives can be dissipated in multiple agendas and conflicting priorities. They also believe that “planning, coordinating and evaluating teaching and the curriculum”, lies at the heart of instructional leadership.

Further focus on the knowledge and skills that leaders need to support teacher learning about how to raise achievement while reducing disparity (Stein & Nelson, 2003; Stein & Spillane, 2005) reinforced these views.

Although school leaders play a key role in school effectiveness, their impact is indirect and mediated by a number of school factors. The school factors and their impacts on school effectiveness have been studied extensively by many researchers.

In this section, we have seen that school leadership has a positive influence on student achievement; the reason why there is international consensus that one way to improve schools is to strengthen the leadership capacity. However, there are some disparities between the results obtained from quantitative and qualitative studies. Quantitative studies tend to show a small indirect effect between leadership and school effectiveness. Quantitative studies also tend to show the greater influence instructional leadership and collective-efficacy rather than self-efficacy. These findings support the significant roles of instructional and shared leadership.

1.3.7. Dimensions of School Effectiveness considered for the Research

School effectiveness is a central concept in this research. It has been extensively explored so that the appropriate dimensions could be considered based on the aim of the research and the context. School effectiveness is a vast concept that encompasses all aspects of school inputs, processes and outcomes. There is no fixed definition of school effectiveness and there are many different shades of interpretations as seen in the literature. For the purpose of the research it is essential to define school effectiveness as it will be interpreted and measured. One important aspect of school effectiveness which has been considered in this research is the output measure in terms of what students have achieved after a number of years of schooling. This decision is based on the link between
school effectiveness and the Professional Learning Community. As the focus for the Professional Learning Community is on student learning, it is appropriate to measure student learning and relate it to the Professional Learning Community. As student learning involves both academic and non-academic development of the learner in terms of acquisition of knowledge, skills and attitudes, we decided to measure student academic performance and student welfare. In Mauritius, secondary schools admit students in form 1 on the basis of merit that is on their performance at the Certificate of Primary Education (CPE) examinations. School performance at SC (school certificate) and HSC (Higher School Certificate) examinations depends to a large extent on the CPE results of the students admitted in Form 1. Therefore, in order to remove this bias, the academic performance of the school has been calculated based both on the CPE and SC results in order to provide a fair picture of school academic performance. Student welfare has been measured using a questionnaire as will be described later. In this way, school effectiveness has been simplified and adapted to the aim of the research.

Based on the literature on school effectiveness, we have reviewed the correlates of school effectiveness. There seem to be consensus among the different authors concerning these correlates. On the other hand, there is no consensus on how to measure school effectiveness due to the fact that it has a complicated construct. School effectiveness has been related to student learning and in many studies it has been related to student achievement. As an output measure, student performance is one important aspect of school effectiveness, but we should not ignore the other aspects of the students’ development and wellbeing. Hence for the purpose of this research, both student academic performance and student welfare will be measured. We have seen that school leadership influences the level of school effectiveness. Different studies produced different results and many are not supported by empirical evidence from scientific research. Some quantitative researches tend to show a small and indirect influence of leadership on school effectiveness. If the impact of leadership on school effectiveness is small and indirect, one important aspect is to explore the mediated factors which are influenced by school leadership and which are the determining factors for school effectiveness.
1.4. School Factors

The school as an organization is made up of structural and functional units, all of which working in harmony resulting in an entity. All these school factors directly and indirectly determine school effectiveness and student achievement. **Physical factors** include school structure, infrastructure and the school environment. **Human factors** include teacher qualifications and experience, staff development, student socio-economic factors, staff and student motivation; and **subtle factors** include school ethos, school climate, school culture, organizational commitment and collaboration.

The impetus, the effort and the creativity needed to improve schools come largely from within, that is from the constituent units. Barth (1990) argued that school improvement is most likely to succeed when it is based in the skills, aspirations and energies of those closest to the school. A number of such factors will now be explored.

1.4.1. School Structure

School structure includes all the internal elements of the school as a system. In schools, the positions of the principal, teacher and student are critical ones and each is defined in terms of a set of expectations. According to Hoy and Miskel (2001), ‘bureaucratic expectations are formal demands and obligations set by the organization. They are the building blocks of the organizational structure’ (p.25). They view the school as composed of bureaucratic expectations and roles, a hierarchy of offices and positions, rules and regulations, and specialization.

‘Bureaucratic expectations define organizational roles; roles are combined into positions and offices; and positions and offices are arranged into a formal hierarchy of authority, according to their relative power and status’. (p.25)

They believe that some structures facilitate the operation of the organization and others hinder; and undoubtedly, behaviour in an organization is determined in part by the structural arrangement of the school.
Hoy and Miskel (2001) represent the school structure as follows:

![Diagram of School Structure](image)

**Figure 3. School Structure (Hoy and Miskel, 2001)**

In the bureaucratic organization and management of schools, Darling-Hammond (1990) points out that:

*Schools are agents of government that can be administered by hierarchical decision-making and controls. Policies are made at the top of the system and handed down to administrators who translate them into rules and procedures. Teachers follow the rules and procedures (class schedules, curricula, textbooks, rules for promotion and assignment of students, etc.), and students are processed according to them.* (p.27)

Schools as organizations have adopted the structures and discourses of new public management (Boston et al. 1996) that have re-defined how schools are operated. These systemic changes have stimulated a climate of increasing demands for public accountability and responsibility. According to Codd (2005), one of the immediate consequences has been the ‘creation of managed schools staffed by teachers who have been described as managed professionals’. A study in New Zealand by Fitzgerald (2009) reveals that management tasks and activities dominate teacher’s work and that there is,
consequently, little or no time for leadership. Similarly, Scheerens (2012) considers schools as professional bureaucracies as a potential for efficiency. He views a lean kind of leadership as a perspective that could be helpful in the avoidance of ‘too much management’.

In this modern era of constant change, the hierarchical and highly bureaucratic school system is seen to be very resistant to the process of adaptation to new management styles. Williams (2008, p.11) claims that educational reform efforts and demands for school improvement are too often rooted in a bureaucratic system that is incapable of stimulating and sustaining meaning improvements in teaching and learning. The traditional operational model used in many school, being part of a greater bureaucracy designed to meet the training needs of a more stable industrial society, is incapable of dealing with the demands for flexibility and creativity requisites for a knowledge-based society (Hargreaves & Goodson, 2006).

1.4.2. School Climate

School climate has throughout the ages been considered as a key indicator of school effectiveness and many educational theorists have expressed similar views. Appleberry (1969) described an ‘open school climate’ as one that focused on authentic interactions among members, thus facilitating a humanistic pupil control perspective. Researches on school climate (Hoy, 1972a; Hartley & Hoy, 1972; Deibert & Hoy, 1977) led to the conclusion that openness and humanism in school climate facilitated positive student outcomes; in particular, such schools were less alienating and produced more self-actualizing students.

Freiberg and Stein (1999) described school climate as ‘the heart and soul of the school and the essence of the school that draws teachers and students to love the school and to be a part of it’, and Ornstein (2004) described organizational climate as the ‘total environmental quality within an organization’. He believed that the recent attention to the effectiveness of public schools and their cultures have shed more interest on the importance of climate.
The National School Climate Council (NSCC) (2013) has developed a definition of school climate: “School climate refers to the quality and character of school life. School climate is based on patterns of students’, parents’ and school personnel’s experience of school life and reflects norms, goals, values, interpersonal relationships, teaching and learning practices and organizational structures”.

According to the National School Climate Centre (2013), in New York,

“A sustainable, positive school climate fosters youth development and learning necessary for a productive, contributing and satisfying life in a democratic society. This climate includes:

- Norms, values and expectations that support people feeling socially, emotionally and physically safe.
- People are engaged and respected.
- Students, families and educators work together to develop, live and contribute to a shared vision.
- Educators model and nurture attitudes that emphasize the benefits and satisfaction gained from learning.”
- Each person contributes to the operations of the school and the care of the physical environment.

There is no consensus about what school climate dimensions are essential to assess, however, the National School Climate Council suggests that there are four major areas that school climate assessment needs to include: Safety, Relationships, Teaching and Learning and the external environment.

According to Hoy (2012), a few visits to a few schools will convince even the most casual observer that there are striking differences in the feel of schools. The school climate creates the atmosphere to meet the wide range of student needs. Hoy (2012) relates the school climate to school health. He argued that at institutional level, institutional integrity reflects the school’s ability to cope with its environment in positive ways. He framed the managerial level in terms of:

*The principal’s leadership: initiating structure to solve problems, consideration to assist and support teachers, influence to help and protect teachers, and resource support to secure the materials needed for teachers to succeed.*
1.4.3. School Culture

School culture is considered as the prerequisite for creating an excellent school. Firestone and Wilson (1985) provide a useful framework for the study of organizational cultures of schools. They suggest that the analysis of school culture can be addressed by studying its context, the expressions of culture, and primary communication patterns. The symbols through which culture is expressed often help identify important cultural themes. Three symbol systems that communicate the contents of a school’s culture are stories, icons and rituals. Bates (1987), however, argues that such formulations treat organizational culture as synonymous with managerial culture and are much too narrow to capture the essence of culture. This observation leads to a more general issue of whether most schools have a culture or a variety of subcultures.

Bolman and Deal (1997), however, report that often what is done or said is not nearly as important as its symbolic significance. Examining the culture of schools provides a less rational, more uncertain, and less linear view of organizational life than the standard perspectives on structure, rationality and efficiency. They refer to the culture perspective as the ‘symbolic frame’ for viewing organizations. They argue that the frame is based on unconventional assumptions about the nature of the organization and behaviour.

According to Beae, Caldwell and Millikan (1898),

*When a group of people share the same world view, when their paradigms are consistent with each other or are sufficiently homogenous in their core assumptions, then a common ‘culture’ emerges. That group of people begins to manifest parallel behaviours, similar speech patterns, common ways of explaining their particular universe, in short, the group becomes tribal. Thus the principal, if he or she wishes to develop a strong cohesive culture for his or her school, must address those elements which handle the school’s environment for Learning.* (p.18)

School culture is a deep phenomenon and difficult to understand, but the effort to understand it is worthwhile because much of the mysterious and the irrational in schools become clear when we understand it. Schein (1991) defines culture as

*A pattern of basic assumptions- invented, discovered, or developed by a given group as it learns to cope with its problems of external adaptation and internal integration- that has worked well enough to be considered valid and, therefore, to be taught to new members as the*
Levels of school culture
Schein (1991) describes the three ‘levels’ of culture: ‘Artifacts and Creations’ constructed from the physical and social environment are the most visible level of culture but often not decipherable; a set of ‘values’ pertaining to the school can predict much of the behaviour that can be observed; and ‘Basic Underlying Assumptions’ are taken for granted when they solve problems repeatedly. These implicit assumptions guide behaviour and tell group members how to perceive, think about, and feel about things. Similarly, Hoy and Miskel (2001) describes three levels of organizational culture: ‘Tacit Assumptions’ as the abstract premises such as nature of human relationships, truth and reality and relationship to the environment; ‘values’ as openness, trust, cooperation, intimacy and teamwork; and ‘norms’ as supporting colleagues and principal, handle discipline problems and assistance to students. They also refer to culture as shared norms which directly influence behaviour.

School Climate and School Culture
The concepts of climate and culture have often been interpreted differently or have been used interchangeably in educational research, yet both are closely linked. The relationship between culture and climate was supported by Schein (1985, 1996) when he stated that norms, values, rituals and climate are all manifestations of culture. Hoy and Feldman (1999) refers to culture as shared norms and climate as shared perception; they believe that even though the conceptual distance between the two is small, it is nonetheless real. According to them, this small difference is meaningful and crucial because shared perceptions of behaviour are more readily measured than shared values. They describe climate as having fewer abstractions than culture and conclude that climate presents fewer problems in terms of empirical measurements. They consider climate as the preferred construct when measuring the organizational health of a school.

On the contrary, in his study, Van Houte (2004) investigated whether culture and climate can be considered interchangeable concepts in school effectiveness research. He concluded that culture has become increasingly more important in educational research and has challenged climate as a means to describe the character of educational settings.
According to him, the culture concept is more accurate, since it is clear how culture originates and how culture may influence individual members of the organization whereas there is no clarity about these matters for climate. However, Van Houte also cautions about whether there is one monolithic culture or different cultures coexisting within the same organization.

Relating climate and culture to school effectiveness, Schlechty (1997) states that simply altering the structure and expectations of schools has failed over the last 50 years. He suggests that structural change that is not supported by cultural change is bound to fail because it is in the culture that any organization finds meaning and stability. Similarly, Dufour and Eaker (1998) claim that reform efforts of the last 30 years have failed to improve student achievement in schools because they failed to adequately address the importance of culture and climate of schools.

McNeil, Prater and Busch (2009) study the effects of school culture and climate on student achievement. They used the Organizational Health Inventory (OHI) (Johnstone, 1988), which is considered to have high reliability to measure the ten dimensions of school climate – Goal focus, Communication, Optimal power equalization, Resource utilization, Cohesiveness, Morale, Innovativeness, Autonomy, Adaptation and Problem solving adequacy. They classify the 29 schools in southeast Texas into three categories based on student achievement – Exemplary, Recognized and Acceptable (no school was categorized as low-performing). They use descriptive statistics and statistical tests (analysis of variance) to show that schools with Exemplary rating also demonstrate healthier climates than schools with Acceptable ratings. Their findings also suggest that the dimensions Goal focus and Adaptation describe aspects of school health and culture that are crucial to the academic success of students within the school. Since Goal focus and Adaptation were the only two dimensions that exhibited statistical significance between the categories of school cultures, it follows that they justify special attention when developing a healthy school climate. McNeil et al. (2009) therefore, conclude that it is through the principal’s ability to interact with the climate of the school in a manner that improves Goal focus and Adaptability that the learning environment is improved.
Culture, Climate and School Leaders

Many organizational theorists have long reported that paying attention to culture is the most important action that a leader can perform. Sergiovanni (1984) claims that the cultural aspect is the most important dimension of leadership.

Schein (1991) describes elaborately on how school leaders embed and transmit culture. According to him,

*The most powerful primary mechanisms for culture embedding and reinforcement are:*
- What leaders pay attention to, measure and control;
- Leaders reactions to critical incidents and organizational crises;
- Deliberate role modeling, teaching, and coaching by leaders;
- Criteria for allocation of rewards and status;
- Criteria for recruitment, selection, promotion, retirement, and excommunication. (p.224)

The most important secondary articulation and reinforcement mechanisms according to Schein (1991) are:
- The organizational design and structure;
- Organizational systems and procedures;
- Design of physical space, facades and buildings;
- Stories, legends, myths, and parables about important events and people;
- Formal statements of organizational philosophy, creeds and charters. (p.237)

Hallinger and Heck (1998) and other education theorists reported that the principal’s impact on learning is mediated through the climate and culture of the school and is not a direct effect, hence the principal does not directly affect student achievement, but rather indirectly by impacting on the climate of the school. This view is further supported by Witziers *et al.* (2003) who claim that leadership is no longer proposed as having a direct influence on learning outcomes but as having an indirect influence through the way it has an impact on school organization and school culture.

There is substantial evidence in the literature to suggest that a school principal must first understand the school’s culture before implementing change (Leithwood *et al.*, 2004). Fullan (2001) contends that the concept of instructional leader is too limited to sustain school improvement. He also promoted the idea that school principals serve as change agents to transform the teaching and learning culture of the school.
Similarly, Bush (2005) argues that although societal culture is beyond the control of educational leaders, they are able to influence organizational culture. He believes that leaders have the responsibility for sustaining culture.

1.4.4. The School Curriculum

The broadest view of the curriculum is all experiences students have under the guidance of teachers. Marsh and Willis define curriculum as “all the experiences in the classroom which are planned and enacted by teachers, and also learned by the students.” According to Schwab, in our education system, curriculum is divided into chunks of knowledge we call subject areas such as English, French, Mathematics, Science and others. However, the definition given by John Dewey, based on experience and education is “the total learning experiences of the individual.” Print (1991) sees the curriculum as “all the planned learning opportunities offered to learners by the educational institution and the experiences learners encounter when the curriculum is implemented” (p.9). The curriculum is therefore directly related to student learning and student achievement. The interaction of the planned curriculum with the students, teachers, school leader and the locality modifies the planned curriculum and a new curriculum emerges for the school. The transmission of this planned curriculum occurs through the official and taught curriculum. Students also acquire numerous learning experiences that were not planned and not intended, this is referred to as the hidden curriculum. Students thus, learn through the formal curriculum, the informal curriculum as well as the hidden curriculum.

The curriculum is at the heart of the school program and is carefully planned for maximum effectiveness. It is also regularly adapted to the economic, social, cultural and individual needs of the students.

Curriculum Reform

In many countries and throughout the modern era of educational change, curriculum innovation has been regarded as an essential strategy for educational reform. Initiatives towards curriculum reforms are in the form of new curricula within the existing schools or new kinds of schools with a particular kind of curricula. For all kinds of curriculum reforms, teachers have a leading role in curriculum development.
In the UK, the Education Reform Act of 1988 introduced a centrally prescribed National Curriculum. Baker (1993) seeks to promote ‘radical change’ in the education system in order for it to ‘match the needs of 21st century Britain’ and to achieve higher pupil standards. This systematic approach to curriculum was expected to produce educational change of a kind that was not achieved by previous teacher-led initiatives. Such trends were also seen in other countries.

According to McCulloch (2005), the eventual impact of the National Curriculum remains to be seen, but it is already evident that its hopes for radical change are highly problematic. He stated that reforming the content and form of what is taught has often appeared to be even more important than other familiar approaches, such as reforming the organization, yet he claims that in spite of such hopes, over the longer term curriculum reform has generally failed to generate educational change of a fundamental kind. Fullan (1991) reports that the structures and cultures of schooling have proven to be highly resilient to fundamental change, and what has appeared to be novel in principle or policy has commonly been interpreted in practice along familiar lines.

McCulloch (2005) further observed that the problematic nature of curricular change is basically due to particular strategies devised for curriculum reform which have been highly influential in determining the structure and eventual impact of particular initiatives. Often there has been an unresolved issue over what should be the role of schools and teachers, yet in an obvious sense, any reform of the curriculum would be dependent on the goodwill and ability of schools and teachers in carrying it out in practice.

**Teachers and Curriculum Reform**

Strategies of curriculum reform have tended to be directed by the state, from policy decisions in order to follow the new trends in development and to meet the demands of society. Lawton (1980) argued that teachers by and large failed to assert effective control over the curriculum or to take responsibility for curriculum reform, when they had the opportunity to do so. Moreover, Wrigley (1985), one leading participant in these initiatives in the UK confessed ‘We are slow to see the abiding difficulty of effective innovation.’ He also added that despite the celebrations of teacher autonomy, there
remained major constraints on curriculum reform and innovation such as the influence of teaching materials, teacher’s own education and experiences, and often external examinations.

It was widely feared that the National Curriculum would destroy the capacity of teachers to contribute in their own ways towards curriculum reform. Some critics warned that the very notion of teacher professionalism was under direct threat (Gilroy, 1991).

**Teaching Practices and Curriculum Reforms**

Despite numerous reforms, classroom situations have not evolved much. In his study, Klette (2010) considers schools and classrooms in UK, Norway and Sweden during major reforms in 1997 and subsequently in 2006. The new national curriculum put new professional demands on the teachers as well as requiring new forms of classroom practices. A vast research literature tends to arrive at status quo as a way of describing how reform efforts interplay with educational practices. There is persistence of recitation and resistance to change and adopt new teaching strategies. Most teachers reported that the curriculum guidelines had little or no impact on their lesson planning, teaching, their students’ involvement and student achievement. Klette (2010) reports that according to research literature there are some routinized patterns of teaching that seem to continue to define interaction, roles and repertoires in classrooms.

*Despite numerous reforms effort trying to transform classrooms into spaces of enquiries, investigations and sites of unfolding learning processes based on pupils’ individual needs and interests, teachers continue to design and redesign classrooms as sites of recitation and plenary teaching.* (p.1005)

He also reported that teachers dominate, regulate, define and evaluate all communication and activities in the classroom. Approximately 75% of the time, teachers talk, regulate and monitor all official classroom conversation.

According to some authors (Cuban, 1984; Tyack and Tobin, 1994), school and its practices are sealed by traditionalism and stasis. In a case study in France and Mexico on stability and transformation in configurations of activity, Veyrunes and Yvon (2013) showed the persistence of the traditional pedagogical formats in these two countries despite significant contextual and cultural differences. One traditional idea about pupils’
work organization is the work contract (seatwork); it is very common as it helps teachers to maintain order and to bring pupils into activity. It is a teacher-centered teaching method and is under the control of the teacher. It persists despite reform initiatives and the preparedness of teachers to explore new pedagogies. Its adaptation and transformation nevertheless lead to lifelong learning. As Veyrunes and Yvon (2013, p.81) stated: in the process of change,

> the pedagogical format remains identical but the configuration of collective activity evolves... The stability gives to the actors a certain comfort and lets them reach the aims they fix...Changes are thereby digested and incorporated into existing practices, or even invalidated.

Hence, despite reform initiatives by the higher authorities, the relevant training of teachers and the willingness of teachers to innovate and explore new teaching strategies, pedagogical formats tend to be stable with minimum modifications. Collective activity of pupils, engaging them in the learning process is difficult to achieve. A new configuration emerges based on the teachers’ perceptions and actions.

School factors directly or indirectly determine school effectiveness. They depend on many factors including leadership capacity and style at all levels, on teachers who translate the objectives and decisions into actions and on how students respond. Therefore teachers are the intermediate actors and have an important role in the school system. They are the ones who are responsible for the implementation of curricular and co-curricular activities. The success of these activities is directly dependent on how teachers view and carry them out. Teachers also have a direct impact on how students respond and learn. The role of the teacher is therefore primordial in the life of a school and in the life of the students. Thus, if teachers are well prepared and trained, they can make a difference.

1.5. Role of the Teacher

Numerous studies reveal the tremendous impact of teachers on student achievement. Effective teaching begins with effective teacher preparation, the reason why prospective teachers need to acquire a teaching license before they join the teaching profession. In many countries, teacher preparation programs focus on strong content expertise and an array of instructional strategies.
Teachers need to have the necessary knowledge, skills and attitude in order to promote teaching and learning. In every country, there are national policies that support teacher’s learning and professional development. Also, schools need to implement coherent, meaningful professional development programs and ensure that teachers are given adequate time and support to put in practice what they have learnt. The day-to-day job of a teacher is becoming one of designing and guiding students through engaging learning opportunities. According to Lanier (1997),

*A teacher’s most important responsibility is to search out and construct meaningful educational experiences that allow students to solve real-world problems and show they have learned the big ideas, powerful skills, and habits of mind and heart that meet agreed-on educational standards.*

While much current research aims to demonstrate the impact of leaders on schools and students (Leithwood et al., 2004), the challenge is to identify the indirect path through which leadership influences students; and considerable research has focused on teachers – their beliefs and emotional states (Leithwood, 2006).

Effective schools start with effective teachers as teachers directly determine the teaching and learning process. So understanding the needs of the teacher can help find effective ways to improve learning.

**1.5.1. Needs of the Teacher**

The center for Research on the Context of Secondary School Teaching founded in 1987 assumed as its mission understanding the factors that enable or constrain teacher’s work, and expressly set out to take up the analytic challenge posed by implementation research. The Context Center research attempted to see from a teachers’-eye view, what dimensions of the school setting are most influential in shaping the ways teachers think about practice and what they do in the classroom? Students were the basic reference teachers used when they talked about their schools, colleagues, classrooms and commitment to teaching. Teachers focused on their students’ academic abilities, needs and interests, attitudes, and backgrounds as that explained what they did in the classroom. Most teachers in the study continued traditional practices and saw behaviour and achievement problems in their classrooms primarily as students’ problem, exacerbated by
inadequate support or discipline at the school. Teachers, who responded this way quickly became cynical, frustrated and burned out. On the other hand, teachers who responded to contemporary students by adapting content and expectations led to a more supportive classroom environment. Other teachers struggled to rethink connections between students and subject matter and reinvent practices for their classrooms. Therefore, not all teachers respond the same ways to similar students, and not all teachers’ responses lead to positive outcomes, either for themselves or their students.

McLaughlin (2005) proposes professional setting closest to school teaching with the greatest influence on how teachers understood their roles and the expectations they established for teaching and learning. Learning communities of teachers in departments or schools were essential supports for the intensive teaching technologies associated with reinvented practices, and the collegial consciousness and knowledge they assumed. He also believes that learning communities were necessary for teachers to move from traditional classroom scripts to think about their practice in new ways. According to him, teachers’ learning communities differed in a number of ways from other forms of professional communities. A learning community of teachers generates different kinds of knowledge and undertakes different types of action than did individuals acting alone, or teachers working in strong but static professional communities.

Teachers working collaboratively help them surmount certain difficulties, improve their teaching practices and develop positive and constructive responses to students. Teachers, therefore, need to understand the context in which they are operating. They need to contribute to the mission and goals of their school as an organization.

1.5.2. Teachers’ Organizational Commitment

Mowday et al. (1982) defined organizational commitment as the relative strength of an individual’s identification with and involvement in a particular organization. They stated that organizational commitment consists of three characteristics: belief in and acceptance of organizational goals and values; willingness to exert effort on behalf of the organization; and a strong desire to maintain membership to the organization. These characteristics imply that members of an organization wish to be active players in the organization have an impact on what is going on in it, feel that they have high a status
within it, and are willing to contribute beyond what is expected of them (Bogler & Somech, 2004).

Marks and Louis (1997) state that teacher commitment to the school affects pedagogical quality and student academic performance indirectly through school organization for instruction. Also, teacher’s organizational commitment is an important indicator of a strong school culture (Cruise & Louis, 2009), which is considered an important mediating variable for student learning and high academic achievement.

Heck and Hallinger (2009) have argued that leadership effects on learning are brought about indirectly through their impact on people, structures, and processes over time and organizational commitment of teachers is one of these people-related key variables. Hence organizational commitment is a hallmark of organizational effectiveness, which underscores the need to identify factors contributing to this organizational outcome.

Some leadership models including transformational, instructional and participative and distributive models can have positive effects on organizational commitment. Other studies have indicated that the supervisory leadership function is related to teachers’ organizational commitment (Ebmeier, 2003). For example, Somech (2005) found a positive relationship between directive leadership, which is characterized by monitoring and supervising teachers, and organizational commitment. Also, Robinson, Lloyd and Rowe (2008) claimed that staff welcomed leaders’ involvement in teacher evaluation and classroom observation because it resulted in useful feedback, which could be related to teacher’s organizational commitment.

Teacher organizational commitment is crucial for the school, in terms of teaching and learning and a conducive school culture and climate. Teacher commitment guides teacher behaviour. Effective teacher behaviour contributes to effective teaching and learning.
1.5.3. Effective teacher behaviours

Instructional effectiveness research by Brophy & Good (1986); Creemers (1994) and Scheerens (2000) singled out the following teacher behaviours as the ones most consistently associated with student achievement in industrialized countries:

- emphasizing academic instruction, maximizing efficient time on task, active teaching (vs. allowing individual, unsupervised work);
- adjusting the difficulty and cognitive level of tasks and questions to the students;
- structuring, outlining and reviewing lessons, questioning, testing, and providing homework;
- prompting and providing feedback;
- ensuring clear correspondence between covered material and tests;
- monitoring for completion and accuracy in supervised independent seatwork and homework;
- teaching and learning strategies;
- providing corrective instruction;
- preparing in advance;
- being flexible, clear and enthusiastic;
- having high expectations;
- maintaining an orderly atmosphere;
- having quality academic and social interactions with students.

Yet, in some school effectiveness studies in industrialized countries, the differences between student scores on achievement tests were more attributable to the characteristics of individual students and their peer group than to differences due to attending different classrooms and schools (Scheerens & Bosker, 1997, OECD, 2004)

However, several problems with instructional effectiveness research exist due to short time of study and change in teacher each year and the context in which the study is carried out. Comparing studies in different countries, there seems to be consensus in industrialized countries that instructional effectiveness factors are important for student achievement (Teodorovic, 2011)

The effective teacher behaviours proposed the Brophy and Good (1986) and Creemers (1994) are indeed a resourceful checklist for improving teaching and learning. Teachers should therefore, be aware of these behaviours and acquire knowledge, skills and attitudes to translate them into everyday practice. In this way, they develop teacher efficacy both individually and collectively.
1.5.4. Teacher Efficacy

Bandura (1977) defined teacher efficacy as the ‘confidence teachers have about their ability to accomplish a teaching task’. Bandura (1995) further elaborated four factors influencing self-efficacy: *mastery experiences* (based on personal experience with the task); psychological *and emotional states* (an individual’s level of arousal); *vicarious experiences* (seeing others succeed or fail in a particular task); and *social persuasion* (formal or informal, from leaders or colleagues).

Teacher efficacy has a demonstrable impact on student achievement. Correlations between teacher efficacy and teaching practices are also very high. Ross (1998) showed that higher teacher efficacy is consistently associated with the use of teaching techniques that are more challenging and difficult, with teacher’s willingness to implement innovative programs and with classroom management practices that promote student responsibility.

Furthermore, according to Bandura (1993) and Goddard *et al.* (2000), teachers’ collective efficacy can be a stronger predictor of student achievement than students’ socioeconomic status, therefore there is a clear need to describe what school leaders can do to support collective efficacy. Hipp (1996) showed that leadership affected efficacy, largely by addressing in-school problems within the principal’s control, such as discipline or shared decision-making.

Da Costa and Riordan (1996), on the other hand, linked teacher efficacy to trust. They showed that teachers in high-trust work relationship who were also confident of their teaching abilities were willing to have conversations about instructional pedagogy in a variety of settings, including general team meetings.

As discussed above, teacher self- and collective efficacy lead to the use of innovative and challenging pedagogies, which make learning more meaningful. These effective teaching methods encourage and motivate students to learn. Hence, teacher efficacy has a direct bearing on student achievement.
1.5.5. Impact of Teacher on Student Achievement

Marzano (2000) found that school-level and teacher-level factors account for approximately 20 percent of the variance in student achievement. Student characteristics—home environment, learned intelligence/background knowledge, and motivation account for 80 percent of the variance in student achievement. Yet in another study (Marzano, 2003), he illustrated the importance of the educator in student achievement. He argued that in the ‘most effective’ school with a ‘most effective’ teacher 84.7 percent of students would be expected to pass a test on which the normal pass rate is 50 percent regardless of the background of the student who attended the school. Moreover, he revealed that in classrooms headed by teachers characterized as ‘most effective’, students posted achievement gains of 53 percentage points over the course of one academic year, whereas in classrooms led by ‘least effective’ teachers, student achievement gains averaged 14 percent points.

McKinsey (2007) study on the world’s best performing school systems confirms the importance of the teacher and claims that the only way to improve outcomes is to improve instruction. Yet, according to Klette (2010), existing literature shows that irrespective of the huge amount of efforts invested in reforming education, teachers, students and parents continue to reproduce a rather stable pattern of interactions in classrooms which could be summed up by the catch phrase “Classroom business as usual”.

Considering the factors which promote student achievement, there are different schools of thought. Despite all, the strong correlation between instruction and student achievement is undeniable. Therefore, teachers should be given all the support and a conducive working environment to evolve. Teachers should be empowered to take initiatives and to contribute to school improvement. The school is subject to many challenges and dynamic change. Despite the primary role of the teacher is teaching and learning, he/she is also called upon for other responsibilities which can be directly or indirectly linked to teaching. Teacher professional development and leadership are therefore essential for the school at large.
1.5.6. Teacher Leadership

The concept of teacher leadership is given various definitions by different authors, however, Katzenmeyer and Moller (2001) provide a comprehensive definition of teacher leaders:

*Teachers who are leaders lead within and beyond the classroom, identify with and contribute to a community of teacher learners and leaders, and influence others towards improved educational practice* (p.17).

Griffin (1995) finds that introduction of teacher leadership and the expansion of shared leadership encourage innovation and had positive school-level effects. Lambert (1998), on his hand, advocates the positive relationship between all forms of teacher leadership, teacher collaboration and capacity building for school improvement.

Teacher leadership includes both informal and formal leadership activities. Informal leadership constitutes classroom-related functions such as planning, communicating goals, regulating activities, creating a pleasant workplace environment, supervising, motivating and evaluating the performance. In contrast, formal leadership roles encompass responsibilities such as subject coordinator, head of department, often moving away from the classroom to achieve this (Ash and Persall, 2000).

Gronn (2000) and Spillane et al. (2001) refer to teacher leadership as forms of empowerment and agency which are also at the core of distributed leadership theory. They believe that there is a strong resonance between the empirical terrain provided in teacher leadership literature and the theoretical perspectives provided by those writing about distributed forms of leadership.

Day and Harris (2003) suggest that there are four discernible and discrete dimensions of the teacher leadership role, namely:

- The translation of the principles of school improvement into the practices of individual classrooms.
- Participative leadership, fostering a more collaborative way of working.
- Mediating role, whereby teacher leaders are important sources of expertise and information.
- Forging close relationships with individual teachers through which mutual learning takes place.
Similarly, Murphy (2005) suggests that teacher leadership has an instructional component, a relational component and an enabling component. Teacher leaders are chiefly concerned with securing enhanced instructional outcomes, generating positive relationship with staff and students, creating the enabling conditions for others to learn.

Teacher leadership can be an effective support for school improvement; however, according to Harris and Muijs (2002) the dominant discourse about leadership in England does not include a serious consideration of the term. Teacher leadership is either dismissed as yet another label for continuing professional development or simply rejected because of the complexities of viewing teachers as leaders within a hierarchical school system where leadership responsibilities are very clearly delineated. Indeed, the fact that schools rely on a clear demarcation of roles and responsibilities presents a major barrier to the idea of teachers as leaders.

Teacher leadership is therefore seen as an inevitable aspect of school improvement. It can help to improve instructional practices or to lead in some aspect of the curriculum including the subject areas. Teacher leadership is also seen as a collaborative process and it leads to participative and shared leadership. It is an opportunity for teachers to contribute in areas where they possess the required knowledge and skills. Teacher leadership can be formal or informal depending on the needs of the school. However, few researches caution about the leadership roles of teachers in the well-defined school hierarchy.

York-Barr and Duke (2005) studied the only five studies that directly examined the effects of teacher leadership on students. In the first one by Ryan (1999), it was found that the teacher leaders were perceived to be having a positive effect on students because they influenced the instructional practices. The second one by Louis and Marks (1998) did not discern a direct relationship between teacher empowerment and student learning but strongly supported the argument that empowerment did positively influence teachers’ efforts to improve instruction. The third one by Taylor and Bogotoch (1994) found no significant difference in terms of student attendance, achievement or behaviour between schools with high degrees of teacher participation in decision making as opposed to schools with low degrees of teacher participation in decision making. The other two
studies conducted by Leithwood and Jantzi (1999, 2000) explored the effects of school and teacher leadership on students’ engagement with school. Both studies reported no statistically significant relationship between teacher leadership and student engagement. However, they did conclude that teacher leadership outweighs principal leadership effects before taking into account the moderating effects of family educational culture.

Hence, according to research, the effects of teacher leadership on student engagement and achievement have not been established as there are no general agreements based on the results.

Despite the difficulties and barriers, Harris (2003) believes that evidence from literature reveals that teacher leadership can occur if certain prevailing conditions are in place. Evidence would suggest that it is a possibility if the school puts in place appropriate support mechanisms and creates the internal conditions for forms of teacher leadership to flourish. Time needs to be set aside for teachers to meet to plan and discuss issues such as curriculum matters, developing school-wide plans, leading study groups, organizing visits and collaborations. There need to be rich and diverse opportunities for continuous professional development. Katzenmeyer and Moller (2001) state that literature would suggest that professional development for teacher leadership needs to focus not just on the development of teacher’s skills and knowledge, but also on aspects specific to their leadership role. Skills such as leading groups and workshops, collaborative work, mentoring, teaching adults, action research, collaborating with others and writing bids need to be incorporated into professional development.

According to Harris (2003), literature indicates that structured programs of collaboration or networking need to be set up to ensure that teacher leaders can fully develop their leadership potential.

Teacher leadership seems to be appropriate where schools are seen as learning organizations and where shared leadership is considered as the favored mode. Teacher leadership is a call for higher professional skills which teachers should acquire. Hence, it leads to continuous professional development of teachers.
1.5.7. Continuous Professional Development of Teachers

Every country develops some kind of support system to enhance the quality of teaching and the implementation of educational reforms in schools. Teaching staff development is usually an ongoing activity both at school and at country or state level and is geared towards specific needs.

Ingvarson (2005) argues that teaching standards have the potential to reform radically the professional development system for teachers, and to move control into the hands of the profession. He proposes a standards-based professional development system that can establish expectations for professional development and accountability.

Over the past ten years the teaching profession has begun to demonstrate a capacity to develop consensus around standards for highly accomplished teaching. According to Darling-Hammond (1986), these standards provide exciting and challenging descriptions of high quality teaching, they go far deeper into the nature of what it means to teach well than the lists of criteria and competencies typical of most managerial models for teacher appraisal and evaluation. Moreover, in their article on policies that support professional development, Darling-Hammond and McLaughlin (1995) write,

_The vision of practice that underlies the nation’s reform agenda requires most teachers to rethink their own practice, to construct new classroom roles and expectations about student outcomes, and to teach in ways they have never taught before._

Darling-Hammond and McLaughlin go on to note that helping teachers rethink practice necessitates professional development that involves teachers in the dual capacities of both teaching and learning and creates new visions of what, when, and how teachers should learn. This most recent model of professional development ultimately requires a fundamental change in the institutional structures that have governed schooling as it has traditionally existed.

Despite the major advances in the understanding of teacher development, Fullan (1995) believes that what is provided in the name of in-service education still fails to engage or excite the majority of teachers. A typical course mode of delivery, despite the best intentions of providers, often leaves teachers passively following someone else’s agenda.
for change and development. It rarely focuses on teachers as persons or as workgroups – where they are now and what they want to become. Thus, the consequences according to Fullan (1995), the levels of teacher commitment to, or engagement in in-service education are often disappointingly low. The failure according to him is because teachers do not see the professional development system – its goals, its knowledge base, its incentives, its methods and modes for giving professional recognition to teachers who attain high standards.

Ingvarson (2005) identifies two purposes for teaching standards. One is to ensure student welfare and provide public safeguards, based on the undeniable requirement that teachers be publicly accountable. The state, in collaboration with the profession, has the major responsibility for defining these basic standards or duties. The second emphasizes the complementary need to ensure that teachers keep up with developments in research and knowledge in their area of teaching and review their practices in the light of this knowledge.

Professional development is therefore, a springboard for enhancing school effectiveness at all levels. It caters for specific needs of the teacher. It also helps teachers in the unlearning and relearning processes in order to reinvent themselves by adopting innovative practices and adapting to the needs of the students and the school at large. However, many professional development initiatives at school or national levels are not as effective due to the predisposition of the teachers. No matter how impressive some initiatives can be, they will not be realized if teachers do not have the appropriate dispositions. Hence, building capacity paves the way to successful implementation of projects at all levels.

1.5.8. Capacity Building

International evidence suggests that educational reform’s progress depends on teachers’ individual and collective capacity and its link with school wide capacity for promoting pupils’ learning. Mitchell and Sackney (2001) have defined school capacity in terms of individual, collective (or interpersonal), and organizational factors. Individual capacity refers to the knowledge, skills and dispositions of individual teachers in a school, while
collective or interpersonal capacity is associated with the quality of collaboration among members of the teaching staff.

According to Bolam et al. (2005), building capacity is critical. It is a complex blend of motivation, skill, positive learning, organizational conditions and culture, and infrastructure of support. Put together, it gives individuals, groups, whole school communities and school systems the power to get involved in and sustain learning over time.

The role of teachers in a school is primordial. They directly impact on student achievement and they translate plans into concrete actions. Whatever happens or does not happen rely a lot on teachers. The relevant facets of teacher functions have been explored. Teachers are the key actors in a Professional Learning Community (PLC). For a PLC to work teachers need to be aware of the ‘big school picture’, they need to understand the importance of shared vision and values and to work collaboratively for promoting student learning. Teachers therefore, have to operate at different levels: classroom level, departmental level, interdepartmental level, formal and informal teams and at their school level. These are challenges that teachers are constantly facing. In order to ensure an effective involvement of teachers, some forms of effective teacher support is needed.

1.5.9. Effective Teacher Support

Effectively supporting and empowering teachers can lead to significant school improvement and enhanced teaching and learning. However, not all forms of teacher support are appreciated by teachers in different settings or have a positive impact on the school at large. It is therefore, important to understand what forms or types of teacher support are more effective and efficient.

There has been many changes in the education sector over the years and in all countries in order to adapt to the new demands; starting with increase government control, standardization, uniformity, curriculum reforms and innovations in teaching and learning, professionalization and other measures taken by different societies. Some of these measures have been fruitful and effective while others have led to a loss of motivation,
teacher unrest and negative effects on student’s learning. A study of the measures taken and their effects in different countries can provide us an insight into effective measures that support teaching and learning.

Patten (2009) argues that educators can take the best from the past and learn from exemplary cases in order to find a new way to change and improve schools. However the note of caution is that specific cases cannot be replicated as all successful programs took years or even decades to develop. Also, the context of each country or district is unique, and what worked in one may not work in another.

Hargreaves and Shirley (2009) review some successful systems including Finland as a top nation in education and the UK network of Specialist Schools and Academic Trust that raise performance in over 300 secondary schools. The importance of working collectively and the emphasis on all stakeholders taking responsibility for student’s achievement are noted. Hargreaves and Shirley (2009) describe the Fourth Way of educational change as a new hope.

*The Fourth Way is a way of inspiration and innovation; of responsibility and sustainability…it brings together government policy, professional involvement, and public engagement around an inspiring social and educational vision of prosperity, opportunity, and creativity in a world of greater inclusiveness, security and humanity.* (p.71)

Despite the idealistic view, the Fourth Way can guide the type of support needed for teachers whereby they can no longer go alone when preparing students for the 21st century.

With all the demands on schools and reforms worldwide, teachers need to be well prepared and trained to meet the challenges. However, no one has the right formula, as each school has different needs and expectations. It is essential that all stakeholders reflect together and work on a support system which is best for any particular group. Yet the school climate and school culture play a great role in the way teachers behave. It is about interpersonal relationships, especially between the school leaders and the teachers.
1.5.10. Leader-member exchange

Several researches including Ashkanasy and Tse (2000) and Dasborough (2006) have shown that interpersonal relationship at work is emotional in nature. Therefore, leadership effectiveness is contingent on the ability to affect follower’s emotions. Based on past researches, Medlar-Liraz and Kark (2012) proposes that

Leadership exchange (LMX) theory focuses on the dyadic relationship between a leader and a follower. The quality of a leader-follower relationship is likely to affect employees’ emotions and influence their ability to display appropriate emotions in service encounters with customers (p.81).

At the core of the LMX theory is the notion that leaders treat their subordinates differently depending on the quality of the social exchange between them (Sparrowe and Wayne, 1997). High quality LMX relationships are characterized by mutual trust, respect, and obligation. Leaders in such relationships rely more heavily on followers, interact more frequently with them and encourage them to undertake more responsible activities. Followers in a high-quality LMX relationship take on additional duties, and perform beyond contractual expectations (Medlar-Liraz and Kark, 2012). Thus, high quality LMX relationships are generally positively correlated with several organizational outcomes including performance, overall satisfaction and organizational commitment.

Medlar-Liraz and Kark (2012) therefore, argue that

high quality LMX relationships are typically characterized as empathetic and supportive of followers’ individual needs, and provide social support to employees. Social support had been recognized as important to emotional management at work because it enables employees to cope better with job stressors and to increase their sense of control (p.83).

Furthermore, according to the High-Quality-Connections Theory (Dutton, 2003), high quality relationships among individuals in the workplace are conducive to feelings of vitality, mutual empowerment, a sense of worth, positive regard, resilience, personal growth and development. These positive feelings are likely to buffer the stress experienced by employees and decrease their manifestations of hostile behaviour. This implies that when employees perceive their relationship with their leader as a high quality
LMX relationship, which provides the employee with a sense of support, positive regard and empowerment, this is likely to reduce their negative emotions and restrain possible hostile emotional displays during interactions with customers.

According to Macmillan, Meyer and Northfield (2005) trust between a principal and teachers in a school is a reciprocal relationship that is not automatic but is negotiated and earned. They claim that without trust some teachers might retreat to the minimal requirements with regard to instruction and resist becoming involved in school improvement efforts. Morrissey (2000) points to both the culture of trust and mutual respect within relationships together with the collective engagement of teachers and administrators as components of successful schools. Bryk and Schneider (2003), referring to the interrelated set of mutual dependencies embedded within a school’s social exchanges, observe:

\[
\text{regardless of how much formal power any given role has in a school community, all participants remain dependent on others to achieve desired outcomes and feel empowered by their efforts (p.41).}
\]

Hence the human relationships that exist in a school community inform the way teachers operate. The elements of trust and respect are vital to promote positive attitudes and behaviour. However, in real situations, things are more complex and difficult to understand. The behaviour of one teacher in one situation can be very different from another teacher in the same situation. Human nature is one important factor and is often unpredictable. The game of power and politics has a significant role in the life of a teacher.

1.5.11. Political Processes and Areas of Conflict

The term micro- and macro-politics are associated with the analysis of political processes in the education and school systems. Bjork and Blase (2009) refer micro-politics as the mechanism of power which individuals and informal groups employ within schools to achieve their goals; and macro-politics as the power affecting educational decision-making processes at a regional or national level.

According to Ball (1987), micro-political theory assumes the inevitability of conflict in organizations like schools. This analysis is based on the assumption that schools are
arenas of constant value conflicts – ‘arenas of struggle’; administrators are acutely aware of the unwritten rules for allocating power, resources and responsibilities and they limit conflicts within manageable arenas and issues.

Teachers often tend to resist to changes in school and classroom practices and are unwilling to adapt to new situations. They use various means to make their voice heard, namely teacher union and different forms of media including internet.

Resistance to change is defined as an affective, cognitive and behavioural response aimed at maintaining the status quo, with the hope of stopping, delaying or altering the proposed change (Van den Heuvel, 2009). Reasons given by employees as well as teachers when resisting change are – differences in values; disagreement on the issues in need of being addressed; inability to implement the reform locally and differences of interests between employees and management (Baum, 2002; Pardo del Val & Fuentes, 2003).

Yet, the attitude of teachers towards a proposed reform is crucial for its success. As Fullan (1991) says, when teachers do not support the reform at hand, it has little chance of succeeding!

Teachers’ resistance to educational reforms has been explored, with special attention given to the reasons driving opposition and the resistance practices employed inside the school walls in Israel in 2007 during the “New Horizon” reform teacher’s strike (Berkovich, 2011). The study describes the bottom-up political strategy used by teachers and the findings direct attention toward the employment of the media in educational policy debates in the present age. Results suggest that teachers’ resistance included bottom-up politics to influence policy decision. Teachers’ rhetoric emerging from blogs posts and school sites manifestos contain well-formulated political messages aiming to garner public legitimacy. This scenario has been observed in all countries worldwide, whenever teachers are against some policy decisions or changes that will have an important impact on their day-to-day life.

So, very often the problem lies in the way things are perceived. The authorities and school leaders see things from a broader perspective and try to initiate corrective actions.
On the other hand, teachers have other concerns and priorities. So the idea is: How to create a level playing field in order to earn the commitment of everyone?

In this section, all important factors concerning the teaching force have been explored as teachers are at the very foundation of the school. Teaching and learning are influenced by all these factors related to the teacher. Teacher competency, skills, knowledge and attitudes are important attributes which directly affect teacher efficacy and commitment. Teachers are always subject to new and challenging situations and as lifelong learners, they need to constantly reinvent themselves; hence, the importance of capacity building and continuous professional development. Teachers are an important component of the school as an organization, they need to be provided with all the necessary support and a conductive environment in order to grow and become quality teachers.

So, if we want to bring about effective teaching and learning, if we want to improve student achievement and promote student wellbeing, one important line of action is to address the needs of the teacher. Therefore, the question is: *What can school leaders do in order to encourage and support the professional development of teachers?* This is the gateway to greater student achievement and greater student wellbeing, hence greater school effectiveness.
CHAPTER 2. Theoretical Framework

School effectiveness is dependent, to varying extent, on school leadership and school factors. The way the school leader addresses the school factors is important in creating an enabling school environment and together with the staff, a Professional Learning Community can be developed. In this chapter we will explore the role of the school leader and how he juggles with the school factors and creates opportunities for staff to be involved in stimulating activities leading to higher student learning and student wellbeing and together creating a collaborative learning culture. All these mechanisms working together lead to the development of a Professional Learning Community.

2.1. Synthesis of Literature Review

The aim of the literature review is to find ways in which student learning can be promoted either directly or indirectly. We started by analysing the school effectiveness literature, school effectiveness correlates and measures, then we have seen the influence of leadership on school effectiveness. To sum up, we can say that there is general consensus about the correlates of school effectiveness. However, when it comes to measures of school effectiveness there are different schools of thoughts. Moreover, whenever there are attempts to measure school effectiveness, it has always been related to student achievement.

School factors are important prerequisites for school effectiveness. School structure is determined partly by higher authorities and partly by the school. School structure directly informs the instructional process. Some structures facilitate the functioning of the school while others hinder it. The hierarchical and highly bureaucratic school system is seen to resist changes and adaptations to new demands. A positive school climate is essential for the interpersonal relationships and for the learner’s holistic development. School culture is a developmental process based on common beliefs, norms and values. Each school develops its own culture over the years. School climate and school culture, both influence the school processes, even though there are some diverging opinions in the literature. School climate and school culture are difficult to change and are often seen as the main factors in change management. The influence of school leadership on school climate and school culture is an ongoing challenge. Sergiovanni (1984) even claims that the cultural
aspect is the most important dimension of leadership. Several education theorists including Hallinger and Heck and Witziers et al. claimed that school leader’s impact on learning is indirect and is mediated by the climate and culture. Curriculum reforms are ongoing and try to adapt to the constantly changing learning needs. However, despite such initiatives, classroom situations have not evolved much. New learning configurations are difficult to emerge as explained by Veyrunes and Yvon (2013).

Teachers are the main actors at school and directly influence the student learning process. The main purpose of addressing school conditions (school leadership and school factors) is to provide all the necessary requisites for teachers to perform optimally. Teachers need to understand what is expected from them, how to focus on the school goals and how to be better prepared to promote the learning process. In addition, teachers are called to take other responsibilities and leadership roles. It is noted from the literature review that teachers carry out their multiple tasks more efficiently and promote learning when they work collaboratively. By working together around their daily tasks and learning collectively, they improve their practices. However, teachers tend to maintain a stable pattern of interactions in classrooms and work in isolation.

Teacher leadership is not seen to have a direct influence on student learning. But it seems to be appropriate where schools where shared leadership is considered as the favored mode. Teacher leadership is a call for higher professional skills which teachers should acquire. Hence, it leads to continuous professional development of teachers. On this note, Fullan (1995) believes that what is provided in the name of in-service education still fails to engage or excite the majority of teachers. To sum up we can say that teachers tend to reproduce what they have been doing over the years and contribute in ways that they feel comfortable and confident. On the other hand, research shows that teachers need to constantly improve and adapt to the changing demands on the schools. An ongoing learning process, through collective activities is beneficial and promotes school effectiveness. One effective way to achieve this is to encourage schools to develop into Professional Learning Communities. This is a paradigm shift and cannot take place overnight. It needs the commitment of all stakeholders, required skills and competencies and above all the constant support of the school leadership.
2.2. School Leadership

Extensive research in leadership since the 1950s and thousands of studies over the 60 year period have explored the multiple facets of leadership and have given way to elaborate leadership development and evolution. Leadership styles and models in schools and their effectiveness have been studied worldwide and by many researchers.

The literature in organizational theory often defines leadership as an influence process that shapes the behaviour of individuals and groups towards the attainment of goals (Yukl, 2006).

Prerequisites for leadership capacity according to Stogdill (1948) and Yukl (2002) are related to certain traits and skills. Bass (1990) and many other researchers discussed about situational aspects as the primary determinants for leader effectiveness and success. Bass (1998) later described the ideas of laissez-faire, transactional and transformational leadership, following which an array of research on leadership styles, practice, development and capacity in schools have been explored.

In the school context, the principal carries out the tasks of both a manager and a leader. He is responsible for setting the vision, mission, objectives and values for the school and at the same time plans, organizes and evaluates short term and day-to-day activities. All aspects of the school life directly or indirectly depend on the school leader. According to Leithwood and Jantzi (2000), it is clear that effective leaders exercise an indirect but powerful influence on the effectiveness of the school and on the achievement of students. The leadership model or style that exists in each school is different and depends directly on the school leader. Based on the literature review, the leadership styles and their associations with school effectiveness have been discussed.

2.2.1. Instructional Leadership

Effective school leadership to-day is considered to include a deep involvement with specific aspects of teaching and learning. Many new principal preparation and development programs around the world emphasize the role of principals as instructional leaders. According to Cotton (2003), effective instructional leaders are intensely involved in curricular and instructional issues that directly affect student achievement.
Research conducted by Elmore (2000), King (2002) and Spillane, Halverson and Diamond (2001) confirm that this important role extends beyond the scope of the school principal to involve other leaders as well.

**Research trends in Instructional Leadership**

The term ‘instructional leadership’ was institutionalized during the 1970s and 1980s with the effective schools movement in America, which then spread around the globe. During the 1980s there was a bloom in the start-up of ‘leadership academies’ devoted to leadership development for school principals. Instructional leadership has been considered as the panacea for effective schools. The focus on leadership development in schools was the result of external policy reforms aimed at driving school improvement forward by changing the practice of school leaders (Barth, 1986; Hallinger & Wimpelberg, 1992). Hallinger and Murphy (1985a, 1985b) described instructional leaders as *strong, directive leaders* who had been successful at ‘turning their schools around’. Murphy & Hallinger (1987) considered the main curricular focus in the leadership academies to be the backbone of the effective school model, which typically included major strands on instructional leadership. Cuban (1988) also contributed to this view and identified the political, managerial, and instructional roles as fundamental to the principalship.

Since the turn of the twenty-first century, the increasing global emphasis on accountability and performance standards seem to have reignited interest in instructional leadership. Principals again find themselves at the nexus of accountability and school improvement with an increasingly explicit expectation that they will function as ‘instructional leaders’. Bolam (2003) and Leithwood (2003) write

> Given the passage of formal government standards for education through the world, principals who ignore their role in monitoring and improving school performance do so at their own risk.

Most recent study by Ylimaki (2012), drawing on a theoretical framework at the intersection of educational leadership, curriculum development, and cultural politics shows two categories of curriculum (instructional) leadership in a conservative era - namely, new professional curriculum leadership and critical curriculum leadership. Accordingly, he suggests a growing interest in curriculum leadership among educational
administration and curriculum scholars as well as practitioners. Also, from his findings, he concludes that “curriculum leadership is in the process of being redefined and reshaped with and by current policies and conservative discourses circulating at state and local school levels”(p.339).

**Instructional Leadership Model**

Southworth (2002,) shows that “instructional leadership is strongly concerned with teaching and learning, including the professional learning of teachers as well as student growth” (p.10). Southworth (2002) qualitative research in schools in England and Wales shows three strategies as particularly effective in improving teaching and learning, these are: *modelling, monitoring, professional dialogue and discussion*. Similarly, Hallinger and Heck (1998) and Robinson, Lloyd and Rowe (2008) argue that as instructional leaders, principals can indirectly improve student achievement by defining the school’s mission, managing curriculum and instruction, supervising teaching, monitoring student progress, protecting instructional time, and addressing the instructional climate.

The model proposed by Hallinger and Murphy (1985a), similar in many respects to other models includes three dimensions for the instructional leadership role of the principal: *defining the school’s mission, managing the instructional program, and promoting a positive learning climate*.

Hallinger (2005, p.233) reconceptualizes the instructional leadership model following a broad reading of the literature over the past twenty-five years. Accordingly, an instructional leader focuses on:

- creating a shared sense of purpose in the school, including clear goals focused on student learning;
- fostering the continuous improvement of the school through school development planning;
- developing a climate of high expectations and a school culture aimed at innovation and improvement of teaching and learning;
- coordinating the curriculum and monitoring student learning outcomes;
- shaping the reward structure of the school to reflect the school’s mission;
- organizing and monitoring a wide range of activities aimed at the continuous development of staff; and
• being a visible presence in the school, modeling the desired values of the school’s culture. (p.233)

Hallinger (2005) has also developed instrumentation related to instructional leadership which he has termed as ‘The Principal Instructional Management Rating Scale’ (PIMRS). Early studies of instructional leadership using PIMRS were conducted almost entirely in the United States, subsequent studies then spanned North America, Europe and Austral-Asia (Hallinger, 2005). Hallinger broke the period from 1983-2005 review into five-year periods as follows:

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<td>20 studies</td>
<td>41 studies</td>
<td>26 studies</td>
<td>29 studies</td>
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This trend demonstrates a consistency of interest in the topic of instructional leadership over this twenty-five year period with two waves, one in the 1980s and the second one at the wake of this century.

Bush (2007), on his hand, says that instructional leadership focuses on the direction of influence, rather than its nature and source. The increasing emphasis on managing teaching and learning as the core activities of educational institutions has led to this approach being endorsed, notably by the English National College for School Leadership, which includes it as one of its ten leadership propositions.

**Limitations of Instructional leadership**

However, while agreement exists on the importance of instructional leadership, there is less consensus on its practical applications. According to Cuban (1988), the classroom doors appear to remain impermeable as a boundary line for principals. Similarly, Barth (1990) and Lambert (1998) argue that the classroom has traditionally been the private domain of teachers in which principals may not be welcome. They also added that in many cases principals have less expertise in the subject area than the teachers whom they supervise. Marshall (1996) thus, sees instructional supervision as a special challenge, particularly in secondary schools.
However, Bush (2003) argues that instructional leadership underestimates other aspects of school life, such as sport, socialization, student welfare and self-esteem. Fancera and Bliss (2011) carry out a study on instructional leadership influence on collective teacher efficacy to improve school achievement. They found that both collective teacher efficacy and instructional leadership are positively related with school achievement, yet, they identified the school socio-economic status as a stronger predictor of school achievement.

Instructional leadership is at the very foundation of improving instructional programs and student achievement. According to research, there is a positive correlation between instructional leadership and school effectiveness. There has been a plethora of research in this domain and many educational policies and projects have been based on instructional leadership. School leaders can focus on the instructional leadership activities in order to guide the curriculum.

2.2.2. Schools and Transformational Leadership

Transformational leadership was initially conceptualized by Burns (1978) and further developed by Bass (1985), whereby the debate was mainly on transactional and transformational leadership. Later, Yukl (1989) emphasized on emotions and values, attributed importance to symbolic behaviour, and considered the role of the leader as helping to make events meaningful for followers.

Transformational leadership basically means establishing oneself as a role model by gaining the trust and confidence of the group. According to Judge and Bono (2000), transformational leaders demonstrate qualities that motivate respect and pride from association; they communicate values, purposes and the importance of the organization’s mission; they exhibit optimism and excitement about goals and future states; they examine new perspectives for solving problems and completing tasks; and they focus on development and mentoring of followers and attend to their individual needs (Judge & Bono, 2000). The concept of transformational leadership was divided into four dimensions later on: charisma or idealized influence, inspirational motivation, intellectual stimulation and individualized consideration (Judge and Bono, 2000; Judge and Piccolo, 2004); along with three transactional dimensions – contingency reward and management by exception, both active and passive (Bass and Avolio, 1994).
Leithwood (1994) strongly associated schools with transformational leadership. He assessed the effects of the dimensions of transformational leadership in schools and from his research, he draws the generalizations that transformational leadership in schools depends on attending all aspects of leadership. School organizations may require unique formulations of transformational leadership with its base being individualized consideration. Transformational leadership usually represents a contingency approach and distinction between management and leadership cannot be made in terms of observed behaviour. He concluded that reasonable robust support exists for the claim that transformational forms of leadership are of significant value in restructuring schools. Similarly, Silins and Mulford (2002) found that transformational leaders have greater positive effects on schools than transactional leaders.

**Transformational Leadership Behaviour**

Conceptions of transformational leadership have become increasingly more complex over the last three decades. Transformational leadership behaviours (TLBs) do not often reflect this growing complexity. Leithwood and Jantzi (2005) reviewed studies about transformational leadership between 1996 and 2005 to enlighten the nature of such leadership. Out of the 32 studies reviewed, seven used some version of Bass’s Multifactor Leadership Questionnaire (MLQ). Leithwood, Jantzi and their colleagues have developed a set of TLBs which largely subsume and extend beyond Bass (Leithwood & Jantzi, 2005); their aim is to better capture the consequences for leaders in school organizations. Eighteen of the 32 studies reviewed reflect this set of TLBs. They reported that five studies show significant positive relationships between transformational leadership and changed teacher practices, yet nine studies are mixed and lean toward the conclusion that transformational school leadership has significant effects on student achievement.

Leithwood and Jantzi (2006) proposed a model for transformational school leadership (TSL) with three broad categories of leadership practices, including a total of nine more specific dimensions of practice:
• **Setting Directions** are the dimensions building school vision, developing specific goals and priorities, and holding high performance expectations.

• **Developing people** are the dimensions providing intellectual stimulation, offering individualized support, and modeling desirable professional practices and values.

• **Redesigning the Organization**, includes the dimensions developing a collaborative school culture, creating structures to foster participation in school decision, and creating productive community relationships. (p.205)

They use data from a 4-year evaluation of England’s National Literacy and Numeracy Strategies to test the effects of a school-specific model of transformational leadership on teachers (motivation, capacities, and work settings), their classroom practices, and gains in student achievement. Their results show a moderate and significant proportion of the variation in altered teacher practices across schools. Leadership has the strongest effect on work setting (.65 to .79), followed by motivation (.56 to .67) and capacity (.41 to .58).

Their study also reveals significant direct effects on changed classroom practices. However, their model fails to explain any of the variation in student achievement gains.

Furthermore, Leithwood and Sun (2012) synthesize the results of 79 unpublished studies about the nature of transformational school leadership (TSL) and its impact on the school organization, teachers and students. This corpus of research associates TSL with 11 specific leadership practices, which as a whole, have moderate positive effects on a wide range of consequential school conditions. Considering the 32 studies which examined the effects of TSL as a whole on 17 school conditions, overall effects on aggregate school conditions are moderate, significant and positive (weighted mean $r = .44$). TSL has large effects on shared goals (.67), working environment (.56), and improved instruction (.55).

TSL had moderate effects on organizational culture (.44) and shared decision making (.36). The findings are in line with Leithwood and Jantzi (2006), they suggest that each TSL leadership practice adds to the status of consequential school conditions. Each school condition is complex and improvement requires leaders to enact a wide range of practices. Leaders influence school conditions through their achievement of a shared vision and agreed-on goals for the organization, their high expectations and support of organizational members, and practices that strengthen school culture and foster
collaboration within the organization. TSL influences on individual teachers’ internal states are strong (.61). TSL is especially strongly related to perception of leaders’ effectiveness (.82), job satisfaction (.76) and teacher commitment (.70). TSL is also seen to have small but significant, positive effects on student achievement (weighted mean $r = .09$).

Leithwood and Sun (2012) also show that well developed models of instructional leadership (IL) and TSL approaches have many more similarities than differences. Both IL and TSL create a shared sense of purpose; develop a climate of high expectations; foster the improvement of teaching and learning; shape reward structure; promote intellectual stimulation and staff development and model values that are being fostered in the school. They believe that more attention by researchers and practitioners needs to be devoted to the impact of specific leadership practices and less to leadership models.

Whatever is the leadership style, all school leaders are subject to a lot of pressure from all stakeholders and from the multitude of tasks they have to attend. Leaders should therefore, be able to manage many things effectively including relationships with students, staff and parents. Such a situation leads to constant mental stress. One important personal trait that helps to manage such a stressful situation is emotional intelligence.

**Emotional Intelligence and the Leader**

Emotional intelligence (EI) stems from Thorndike’s (1921) work on social intelligence and Gardner’s (1983) work on multiple intelligences. Goleman (1995) defines emotional intelligence as “the capacity for reasoning our own feelings and those of others, for motivating ourselves, and for managing the emotional will in ourselves and in our relationships” (p. xii).

In a study of nearly 4,000 executives and their employees by Hay & McBer (2000), 50% to 70% of the employees reported that they believed the working climate of the organization was linked to the emotional intelligence of the leader.

There is growing evidence in the research literature that the affective world of school leaders is both complex and intense (Samier and Schmidt, 2009). School leaders are
confronted on a daily basis with a variety of emotions that are inextricably linked to personal, professional, relational, political, and cultural issues (Zembylas, 2009).

Beatty and Brew (2004) research documents show how mechanisms of emotion management help school leaders promote their own agenda; survive the high emotional demands of school leadership; and bring meaningful changes to their school. Furthermore, Beatty (2007a, b) shows that school leaders’ handling of the emotions in their own reflective practices and in their relationships with parents, students, and faculty shapes and reflects the climate and culture of their schools. Maulding, Peters, Roberts, Leonard and Sparkman (2012) study the correlation between emotional intelligence and resilience of school leaders. The findings of their study indicate that both emotional intelligence and resilience are significant predictors of leadership from the perspective of self-analysis of administrators whether subjected to quantitative or qualitative analysis. As a leader’s emotional intelligence and resilience increase, leadership capacity increases. They also concluded that EI grows as we age and that certain aspects of EI can be taught. When coached, leaders can learn to be more calm and assertive and move forward more easily with increased resilience.

Many theoretical arguments support the relationship between EI and effective leadership, specifically transformational leadership (Daus & Ashkanasy, 2005), yet others have noted the disappointing results of intelligence and personality models in the prediction of exceptional leadership and have argued that EI may represent an elusive “X” factor for predicting transformational leadership (Brown & Moshavi, 2005). Others remain entirely skeptical of the validity of the construct of EI itself, much less its role in leadership outcomes (Locke, 2005). In their study Harms and Credé (2010) find a moderate relationship between EI and transformational leadership behaviours in some cases only. Altogether, their results fail to support some of the more extreme claims of EI proponents concerning the potential role of EI in effective leadership.

While instructional leadership is task-oriented, transformational leadership is people and goal oriented. Therefore, both leadership styles are relevant in order to address the array of school conditions. The school leader should discern what principles to apply in different situations. Therefore, each school can have different leadership predispositions
based on its needs and aspirations. According to the research as discussed above, there is a significant correlation between transformational leadership and improved instructional climate and practices, but less on student achievement. Nevertheless, considering the school environment in relation to the PLC, probably we can say that transformational leadership paves the way to the PLC while instructional leadership guides the process. Being a leader of learning is also very relevant to the functioning of the PLC as it supports the learning process.

**The Learning Leader**

The term ‘learning leader’ is widely associated with Douglas Reeves and his framework for school leadership development. The construct compatible with all kinds of minds approach is one articulated by Hargreaves and Fink based on a report about learning issued in 1996 by the United Nations Educational, Scientific and Cultural Organization (UNESCO). They argue that being a leader of learning means more than poring over and perseverating on achievement results or finding quick ways to boost the figures or to narrow the gaps.

To build a deep learning foundation and develop the expertise for leading learning into the future, learning leaders must:

- Be passionate advocates for and defenders of deep and broad learning for all students...
- Put learning before testing while promoting assessment for learning...
- Become more knowledgeable about learning...
- Commit to improving old basics of literacy and math but not to the exclusion of everything else, while emphasizing the new basics of creativity...
- Engage students in discussion and decisions about their own learning...
- Create the emotional conditions for learning../ by personalizing learning for every student.
- Become omnipresent witnesses to learning by canalizing and discussing responses to student work.

Hargreaves and Fink (1996)

The learning leader actually concerns all those who are involved in the learning process: school leaders and teachers. The aim is to create an enabling learning climate and provide learning opportunities to all learners.
In a school, involving everyone in leadership functions, either in a formal or an informal manner helps to create an enabled environment for learning. It is also an essential prerequisite for the evolution of Professional Learning Communities. So, in this section, we will explore the array of distributed and shared leadership that is, considering leadership in terms of collective capacity instead of focusing on the school leader.

**Participative Leadership**

The tasks of a school leader are many and diverse and it is difficult for the principal alone to assume all the responsibilities. Sergiovanni (1984) believes that the burdens of leadership will be less if leadership functions and roles are shared and if the concept of leadership density were to emerge as a viable replacement for principal leadership.

Senge (1990), on his part, refers to successful schools as “learning organizations”. He describes the five learning disciplines:

- **Personal mastery** is the practice of articulating a coherent image of your personal vision – the results you most want to create in your life.

- **Shared vision** refers to people with a common purpose (teachers, administrators, and staff of a school). They can learn to nourish a sense of commitment in a group by developing shared images of the future that they seek to create and the principles and guiding practices by which they hope to get there.

- **Mental models** is the discipline of reflection and inquiry skills, focused around developing awareness of attitudes and perceptions of your own and those of others around you.

- **Team learning** is the discipline of group interaction. Through such techniques as dialogue and skillful discussion, the team transforms their collective thinking. They learn to mobilize their energies and actions to achieve common goals and draw forth an intelligence and ability greater than the sum of individual member’s talents.

- **Systems thinking** is when people learn to better understand interdependency and change; and thereby are able to deal more effectively with the forces that shape the consequences of their actions (Senge, 2000, p.7).

Participative leadership is therefore, about how all actors in the school community adopt a particular mindset and put all their energies together to achieve their common goals. All the staff working together has a synergistic effect which leads to more effective schools.
This is an idealistic view of the school as a learning organization and requires the effort and commitment of everyone.

2.2.3. Shared Leadership
Collaborative or shared leadership, as explained by Mulford and Silins (2003), is team-oriented, referring to school-wide leadership exercised by those in management roles (principal, assistant principal, department heads) as well as others (teachers, parents, staff students). It encompasses both formal and informal sources of leadership and conceptualizes leadership as an organizational property aimed at school improvement (Ogawa and Bossert, 1995).

Friend and Cook (2003) proposed a ‘Collaborative Model of Interaction’, whereby interpersonal collaboration is a style for direct interaction between at least two coequal parties voluntarily engaged to share decision making as it works towards a common goal.

According to him,

> Collaboration has six important characteristics. Collaboration is voluntary, it requires parity among participants, it is based on mutual goals and depends on shared responsibility for participation and decision-making. Individuals who collaborate share resources and share accountability for outcomes. (Friend & Cook, 2003. p.6)

Proponents of shared leadership also suggest that collaborative leadership has the potential to account for the broader range of naturally occurring leadership processes that exist in schools beyond the formal leadership exercised by principals (Harris, 2003; Lambert, 2002; Ogawa and Bossert, 1995). This perspective is reflected in the growing interest expressed in distributed school leadership (Gronn, 2002; Leithwood, Mascall and Strauss, 2009). Scholars have suggested that acknowledging and developing the broader leadership capacity in schools may hold the key to unlocking the store of leadership potential grounded in instructional expertise that principals are often unable to provide (Leithwood et al., 2009; Gronn, 2002; Fullan, 2001).

Moreover, research on ‘leadership for learning’ by Hallinger and Heck (2010) explored prominent issues concerning the impact of collaborative leadership on school performance by examining the effects of collaborative leadership on school-level academic capacity and student reading achievements. They conducted their study in one
state in the USA in which new educational policies were explicitly designed to support the implementation of collaborative school leadership. School councils were set up and both teachers and parents were expected to be involved in the development and implementation of school improvement plans. It involved teachers and students from 192 elementary schools over a period of four years. Using statistical tests, they could classify 86% of the schools according to their growth in reading, 70% of which were considered as high growth schools although the increase in reading as a competency was not significantly high. Their study, therefore, revealed that ‘collaborative leadership positively impacted growth in students learning indirectly through building the academic capacity in schools’ (p.670).

Shared or collaborative leadership is the involvement of a number of actors, in leadership activities, either formally or informally. Leadership at different levels: student leaders, teacher leaders, subject leaders... provide the opportunities for different actors to be involved in decision making at different levels, over and above the role of the school leader. This helps in improving the school capacity and needs the collaboration of everyone.

2.2.4. Distributed Leadership
Distributed leadership is seen as the mode of leadership that is most appropriate in schools worldwide and there have been a lot of related studies in the decade. It sees leadership as a collective entity involving everyone in the system in one way or the other. According to several researchers, distributed leadership has become increasingly used in the discourse about school leadership in the last few years and is currently receiving much attention and growing empirical support (Gronn, 2000; Harris 2002; Hopkins & Jackson, 2002; Spillane, Halverson & Diamond, (2001). However, as Bennett, Harvey, Wise & Woods (2003) point out, there seem to be ‘little agreement as to the meaning of the term, interpretations and understandings vary (p.2). Bennett et al. (2003) suggest that it is best to think of distributed leadership as ‘a way of thinking about leadership’ rather than as another technique or practice. Furthermore, Harris and Lambert (2003,p.4) argue that ‘in understanding distributed leadership this way it inevitably challenges
assumptions about the nature and scope of leadership activity as it reconceptualizes leadership in terms of the many rather than the few’

Therefore, as Harris (2004) puts it ‘distributed leadership concentrates on engaging expertise wherever it exists within the organization rather than seeking this only through formal position or role. Distributed leadership is characterized as a form of collective leadership in which teachers develop expertise by working together. Goleman (2002) suggests that it offers a frame for studying leadership practice whereby every person at any level, in one way or the other, acts as a leader’. As Sharma (2010,), explains

One does not need a title to show leadership. Leadership is not some complex art reserved for the chosen few with Harvard degrees and impeccable social backgrounds. Each of us, by the very fact of our shared humanity, can show leadership. And with all the cataclysmic change in our society right now, leadership has become the single most important master skill for success. (p.31)

Collaboration and collegiality are at the core of distributed leadership, but it is important to recognize that distributed leadership is distinctive from, and more than, mutual collaboration between teachers. Spillane et al. (2001: 10) argue that distributed leadership ‘emerges through interaction with other people and the environment’. The important delineation between forms of team-working, collegiality, collaboration and distributed leadership is the fact that distributed leadership results from the activity, that it is a product of a conjoint activity such as network learning communities, study groups, inquiry partnerships, and not simply another label for that activity. Not all collaborative activities will necessarily generate distributed leadership as much depends on the level and quality of involvement plus the degree of skillfulness within the group (Harris and Lambert, 2003). It also depends on the extent to which their activities impact upon organizational change and development. Much also depends on the internal conditions set, often by the formal leadership, to support and nurture collaborative learning and to harness the leadership energy that results.
Distributed leadership in action

In a functional dimension, distributed leadership is also considered as the preferred strategy. Elmore (2000) points out that in a knowledge-intensive enterprise like teaching and learning there is no way to perform these complex tasks without widely distributing the responsibility for leadership among roles in the organization. He further states that

*Distributed leadership means multiple sources of guidance and direction, following the contours of expertise in an organization, made coherent through a common culture. It is the ‘glue of a common task or goal – improvement of instruction – and a common frame of values for how to approach that task* (p.15).

The role of the formal leadership positions is primarily to hold the pieces of the school together in a productive relationship. Thus, their central task is to create a common culture of expectations around the use of individual skills and abilities, it equates with maximizing the human capacity within the organization.

In this sense, Spillane, Halverson & Diamond (2001) see distributed leadership as a form of collective agency incorporating the activities of many individuals in a school who work at mobilizing and guiding other teachers in the process of instructional change. It extends the boundaries of leadership significantly as it is premised upon high levels of ‘teacher involvement’ and encompasses a wide variety of ‘expertise, skill and input’ (Harris and Lambert, 2003, p.16).

Engaging many people in leadership activity is at the core of distributed leadership in action. Research by Silins and Mulford (2002) has shown that student outcomes are more likely to improve where leadership sources are distributed throughout the school community and where teachers are empowered in areas of importance to them. This illustrates Gronn’s (2000) view of the school as a learning community chiefly concerned with maximizing the achievement capacities of all those within the organization.

Distributed leadership and professional development

Distributed leadership is also seen as a means of improving teacher’s professional development. A variety of studies have found clear evidence of the positive effect of distributed leadership on teacher’s self-efficacy and levels of morale (Greenleaf, 1966;
Mitchell & Sackney, 2000). Moreover, evidence suggests that where teachers share good practice and learn together the possibility of securing better quality teaching is increased (Lieberman, 2000; Little, 1990, 2000).

One prerequisite for Professional Learning Communities (PLCs) is distributed leadership and it is a means to promote professional development. This will be discussed in the next section on PLC.

**Importance of Principal leadership style**

The principal plays an important role in the planning and implementation in a system which promotes distributed leadership. In 1999 the NAHT (National Association of Head teachers) commissioned research to identify and examine successful leadership practice in schools (Day et al., 2000). In 2001 the National College for School Leadership (NCSL) funded research that explored successful leadership in schools facing challenging circumstances (Harris and Chapman, 2002). The research revealed that, although the heads were at different stages in their careers, of different ages, had different experiences and were working in very different situations, their approaches to leadership were remarkably similar. The evidence from this study pointed towards a form of leadership that was distributed through collaborative and joint working. The evidence showed that these successful heads led both the cognitive and the affective lives of the school, combining structural (developing clear goals), political (building alliances) and educational leadership (professional development and teaching improvement) with symbolic leadership principles (presence, inspiration) and distributed leadership practice (empowering others to lead). They were primarily transformational leaders who built self-esteem, enhanced professional competences and gave their staff the confidence and responsibility to lead development and innovation.

**Barriers and benefits of distributed leadership**

While research highlights benefits of distributed forms of leadership, there are inevitable and inherent difficulties associated with its widespread adoption and adaptation within schools. According to Harris (2004), it would be naïve to ignore the major structural, cultural and micro political barriers operating in schools that make distributed forms of leadership difficult to implement. Schools being traditional hierarchies, with
demarcations of positions and pay-scales, they are not going to be instantly responsive to a more fluid and distributed approach to leadership. Furthermore, there are inherent threats to status and the status quo in all that distributed leadership implies. Financial barriers also exist as formal leadership positions carry additional increments and in order to secure informal leadership, other incentives and alternative ways of remunerating staff is required.

In a study of a school where distributed leadership was being implemented, Ovando (1996) found that time to meet was a central component of success and in schools that were improving, teachers were given dedicated time to collaborate with one another. Her research also suggests that interpersonal factors, such as relationships with other teachers and school management were important. Conflicts between groups of teachers, such as those that do and do not take on leadership roles can lead to estrangement among teachers. This can make some staff become insecure and hostile. Overcoming these difficulties will require a combination of strong interpersonal skills on the part of the ‘teacher leader’ and a school culture that encourages change and leadership from teachers.

In a study on distributed leadership in the event of the recent educational reforms in Quebec, Yvon and Poirel (2012) offered counterexamples to the case studies presented by Spillane and Diamond (2006) illustrating distributed leadership in some American schools. According to the case studies performed in three schools in Quebec, they found that the school leader considers the curriculum reform as part of his duty and do not question its existence. However, he finds himself alone in the change process and is confronted by the teachers. Teachers are not invested and instead of finding solutions together, they are disengaged and rather mobilized to slow down the process. In such a situation the school leader believes that the school climate is at stake, but has no choice than to assume his administrative responsibilities. Such a situation does not favor distributed leadership.

In a recent study of distributed leadership in 52 schools in the north-east of the United States, Spillane, Camburn, Pustejovsky, Pareja & Lewis (2008) use percentage of staff with formal leadership roles as a measure of distributed leadership. They find that on
average 30% of all staff spend a portion of their time in a formally designated leadership role and 25% in a full time leadership position. Formal role designation is, however, only one indicator of distributed leadership. The second indicator of distribution involves measures of who performs those activities, functions and tasks that are involved in leading a group or organization. From electronic records, Spillane et al. (2008) show that the most frequently reported co-leader is a classroom teacher with no formal leadership role.

Murphy, Smylie, Mayrowetz and Seashore Louis (2009) study distributed leadership development in six schools in Mid-Atlantic States in America during three years. They find certain common features in schools where distributed leadership exists and is being developed.

Reshaping culture to encourage and support understandings and forms of leadership, where the key actor is the principal is the first important step. Then, developing teacher leadership by setting clear goals and objectives, and by creating communities of practice, again the principal has a determinant role. Principals are most effective in creating dense patterns of leadership when they are active in identifying leadership opportunities in the school; identify potential teachers to help meet these opportunities, and bringing people and opportunities together. Another essential dimension of distributed leadership is the opportunity structure created by the use of school level teams and action teams and empowering teachers to lead, communicate and connect with others both in formal and informal ways. Teachers’ support by the principal in a number of ways is seen to be an important success factor. In schools where distributed leadership could not happen, it is attributed to the principal not capable to develop a culture of shared leadership and unwillingness on the part of teachers to commit leadership outside the classroom. Financial problems and constraints are also seen to have a negative impact on distributed leadership.

Murphy et al. (2009) conclude that according to teachers, stability at the top of the formal administrative ladder and the work of teacher leaders are essential to the health of the distributed leadership initiative. There is considerable evidence that the norms of
autonomy and isolation and the views of teaching as a private practice are being dismantled and expanded leadership is seen as a growth opportunity.

Considering the trend of research on distributed leadership, with the focus on the formal leader, Gronn (2009) commends a practical representation, putting emphasis on leadership as a unit of analysis, with holistic understandings rather than an aggregated picture focusing on individual leaders. The totality of such an arrangement represents a time-, space-, context-, and membership-bound configuration of influence-based relationships which he characterized as ‘hybrid’. He compares an organization with a natural system, whereby adaptation to the environment and structural changes which arise due to this adaptation, give each organization its specificity which he referred to as ‘hybridized configurations of leadership’.

Distributed leadership has been studied extensively and many interesting points can be concluded from the research findings. Distributed leadership is more about leadership capacity and it engages people at all levels. It encourages collaboration and collegiality; however, it is beyond just working collaboratively. It emanates from the collaboration process. When people work together as learning teams, they develop certain skills and attitudes that promote distributed leadership and in turn this leads to professional development. It is a dynamic concept which is developed in certain specific conditions based on the context. It can only develop when there are opportunities to collaborate. The role of the school leader to provide the necessary climate and environment is crucial. It has been seen to be associated with transformational leadership as staff is empowered to assume high levels of functioning. Distributed leadership is attributed to the school leader who is capable to develop a culture of shared leadership. A great deterrent of distributed leadership remains the game of power and politics which should not be underestimated.

The different shades of shared and distributed leadership have been discussed and analysed. Although at first glance, they look very similar, a thorough and careful analysis reveals strategic differences. Distributed leadership seems to be most relevant to our modern schools as it is directly linked to collaborative work. We can say that it is at the very core of a Professional Learning Community.
In the next part of this section we will try to find out some favourable leadership models involving the whole school as an organization. Leadership, seen as a school collective capacity with the participation of everyone, leads to a Professional Learning Community.

**Transformational, Instructional and Shared Leadership**

While several scholars have written about the possible forms instructional leadership might take, the most ambitious attempt to study shared instructional leadership empirically was undertaken by Marks and Printy (2003). Their conclusion points the way towards one possible avenue of reconciliation for these constructs:

> This study suggests that strong transformational leadership by the principal is essential in supporting the commitment of teachers. Because teachers themselves can be barriers to the development of teacher leadership, transformational principals are needed to invite teachers to share leadership functions. When teachers perceive principal’s instructional leadership behaviours to be appropriate, they grow in commitment, professional involvement, and willingness to innovate. Thus, instructional leadership can itself be transformational (p.393)

The work of Marks and Printy shows the importance of all three types of leadership operating together for optimizing resources and leading to greater heights and achievements. Considering all the leadership qualities together, a blend of all these capabilities and practices seems to be necessary for improved instructions and greater students’ achievement.

**2.2.5. Balanced Leadership**

Waters, Marzano and McNulty (2003) believe that more than three decades of research on the effects of instruction and schooling on student achievement are creating a new science of education. They translated results from their meta-analysis on the effects of leadership practices on student achievement into a balanced leadership framework, which describes the knowledge, skills, strategies, and tools leaders need to positively impact student achievement. According to the authors, balanced leadership is a comprehensive analysis, grounded in evidence and goes beyond abstraction to concrete responsibilities, practices, knowledge, strategies, tools, and resources that principals and others need to be effective leaders. They believe that:
Effective leaders understand how to balance pushing for change while at the same time, protecting aspects of culture, values, and norms worth preserving. They know which policies, practices, resources, and incentives to align and how to align them with organizational priorities. They know how to gauge the magnitude of change they are calling for and how to tailor their leadership strategies accordingly. Finally, they understand and value the people in the organization. They know when, how and why to create learning environments that support people, connect them with one another, and provide the knowledge, skills, and resources they need to succeed. This combination of knowledge and skills is the essence of balanced leadership (p.2).

Waters, Marzano and McNulty (2003) identified 21 key leadership responsibilities that are significantly associated with student achievement:

- **Culture** – fostering shared beliefs and sense of community and cooperation.
- **Order** – establishing a set of standard operating procedures and routines.
- **Discipline** – protecting teachers from issues and influences that would detract from their teaching time and focus.
- **Resources** – providing teachers with materials and professional development necessary for the successful execution of their jobs.
- **Curriculum, instruction, assessment** – directly involved in their design and implementation.
- **Focus** – establishing clear goals and keep them in the forefront of the school attention.
- **Knowledge** of curriculum, instruction and assessment.
- **Visibility** – quality contact and interactions with teachers and students.
- **Contingent rewards** – recognizing and rewarding individual accomplishments.
- **Communication** – establishing strong lines of communication with teachers and among students.
- **Outreach** – as an advocate and spokesperson for the school to all stakeholders.
- **Input**- involving teachers in the design and implementation of important decisions and policies.
- **Affirmation**– recognizes and celebrates school accomplishments and acknowledges failures.
- **Relationship**– demonstrates an awareness of the personal aspects of teachers and staff.
- **Change agent** – is willing to and actively challenges the status quo.
- **Optimizer** – inspires and leads new and challenging innovations.
- **Ideals/beliefs** – communicates and operates from strong ideals and beliefs about schooling.
- **Monitors/evaluates** the effectiveness of school practices and their impact on student learning.
- **Flexibility** – adapting leadership behaviour to the needs of the current situation and is comfortable with dissent.
- **Situational awareness** – is aware of the details and undercurrents in the running of the school and uses this information to address current and potential problems.
- **Intellectual stimulation** – ensures that faculty and staff are aware of the most current issues and practices and makes the discussion of these a regular aspect of the school’s culture.

Balanced leadership can therefore, be considered as a synthesis of all the leadership skills, knowledge and practices (transactional, transformational, collaborative, participative, distributed and instructional) in order to draw out commonalities and relevance to the school context.

Waters, Marzano and McNulty’s (2003) findings on balanced leadership indicate that one standard deviation improvement in leadership practices is associated with 10 percentile increase in average student learning, which represents a statistically significant difference in achievement. Also, focusing on the most effective or most needed leadership practices can have positive impact on student achievement, thus, accurate understanding of the magnitude of change is essential.

They further organize the 21 leadership practices into ‘knowledge taxonomy’ with 4 orders:

1. Experiential knowledge – knowing why this is important;
2. Declarative knowledge – knowing what to do;
3. Procedural knowledge – knowing how to do it; and
4. Contextual knowledge – knowing when to do it.

Further research is going on concerning the 21 leadership responsibilities and the knowledge taxonomy. Data is being collected and factor analysis will be used to produce a smaller number of responsibilities and practices after ‘teasing out’ the underlying factor structure (Marzano and McNulty, 2003).

A lot of emphasis has been laid on school leadership both at the level of educational policy and practice as discussed in this section. Yet according to Scheerens (2012), examining the results of school leadership effect studies over three decades shows small direct and indirect leadership effects. He also notes that in the development of school leadership concepts over time the notion that schools have many substitutes for leadership has been rediscovered. Based on theoretical work and results of empirical
studies, in normal situations of average schools a ‘lean’ kind of management might be sufficient which would make maximum use of the available substitutes and self-organization offered by the school staff and other provisions. However, in the literature on ‘failing schools’ weak leadership is diagnosed as one of the facets of low performance. In such cases more leadership effort is required, which should be more directive and oriented at basic issues like resourcing, standard setting and profiling leadership (Scheerens, 2012).

Furthermore, Scheerens (2012) distinguishes between direct-control and meta-control. Meta-control is in line with distributed and organizational leadership which could be seen as creating favorable conditions for teachers to do their work independently and providing opportunities for professional development and alignment among staff.

Scheerens (2012) therefore, cautions about the assessment of school leadership effects in research studies and the evaluation of leadership in practical contexts.

The Wallace Foundation (2013) produced the Wallace Perspective to develop and share information, ideas and insights about how school leadership can contribute to improved student learning. Wallace’s work since 2000 suggests that school leaders need to be or to become leaders of learning who can develop a team delivering effective instruction. This entails five key responsibilities:

- *Shaping a vision of academic success for all students.*
- *Creating a climate hospitable to education.*
- *Cultivating leadership in others.*
- *Improving instructions.*
- *Managing people, data and processes to foster school improvement.* (p.6)

It was also reported that effective principals studied by the University of Washington urged teachers to work with one another and with the administration on a number of activities including developing and aligning curriculum, instructional practices, and assessments; problem solving; and participating in peer observation (p.10).

The effective principals also look into ways to encourage collaboration, paying special attention to how school time is allocated. More specifically, the study suggests that principals play a major role in developing a ‘professional community’ of teachers who
guide one another in improving instruction. It is also reported that the University of Washington study found a link between the professional community and higher student scores on standardized math tests. The effective principals define and promote high expectations and focus on the quality of instruction. They attack teacher isolation and connect directly with teachers and the classroom. The effective principals encourage ‘continual professional learning’ by emphasizing research based strategies to improve teaching and learning and to initiate discussions about instructional approaches, both in teams and with individual teachers. It is also reported that ‘they pursue these strategies despite the preference of many teachers to be left alone’.

The Wallace Foundation reported that the Minnesota-Toronto study contrasts weak and strong leadership. High-scoring principals conduct frequent class observations for short periods of time. The class visits are formative observations used for learning and professional growth. Direct and immediate feedback is provided. The study also reported that the length of the principal’s stay in 80 schools studied was 3.6 years. They found that the higher turnover was associated with lower student performance on reading and math achievement tests.

Wallace work over the last decade therefore suggests a pipeline for effective leadership with four necessary and interlocking parts:

- **Defining the job of the principal and assistant principal.** The knowledge, skills and behaviour principals need to improve teaching and learning should emerge from research.
- **Providing high quality training for aspiring school leaders.** The training should reflect the realities education leaders are facing.
- **Hiring selectively.** Only highly trained candidates should be selected for principal and assistant principal jobs.
- **Evaluating principals and giving them on-the-job support they need.** Professional development including mentoring on specific areas according to the needs (p.16).

The Wallace report based on research and evidence draws a portrait of how school leaders can be supported and trained to become effective school leaders. If we analyse all the elements of the proposed leadership model, it is in alignment with transformational, instructional and shared leadership and focus on the importance of collaboration and
professional learning. The emphasis is on a leadership team, where the principal is a leader among many other leaders and help to spur leadership capacity and roles in others.

2.2.6. Research on Leadership in Africa
Scholars have made substantial progress in developing the knowledge base in the field of educational management and leadership since the 1960s (Hallinger, 2014). However, the development of the global knowledge base remains highly uneven. Analyses of the literature on educational leadership and management have found that the vast majority of published sources of knowledge come from a limited set of English-speaking, largely Western-Anglo American societies (Hallinger, 2016). The educational leadership and management knowledge base offers far less systematic knowledge on how school leaders carry out their roles in developing nations throughout the world (Hallinger, 2016).

Hallinger (2017) conducts a systematic review of research on educational leadership and management in Africa. It was found that the African literature in educational leadership and management is largely of recent vintage: 90% of the studies were published since 2005 and 60% since 2011. Three societies, namely South Africa, Nigeria and Kenya qualify as potential centres of knowledge production on educational leadership and management in Africa. A large number of African societies have demonstrated limited (e.g. Zambia, Liberia, Malawi, Rwanda) or no capacity (Burundi, Libya, Yemen, Niger) for production of research on educational leadership and management (Hallinger, 2017).

Hallinger stated that

_This uneven ‘topography’ of African literature bears a striking resemblance to the educational leadership and management terrain in Asia where Hong Kong and Israel outpaced the educational leadership and management knowledge production of other societies_ (p.14).

He further added that these trends affirm the shared status of Asian and African societies as emerging contributors to global research on educational leadership and management. Furthermore, Hallinger reported that the most prevalent studies focused on the ‘institutional context’ and

_these contextualized studies of leadership and management offer potentially important insights into how leadership and management processes unfold in the different cultural, institutional and organizational contexts within Africa_ (p.10).
Therefore, African literature on educational leadership and management offer great promise for contributing to a strengthened African knowledge in future and also for contributing to the global body of research.

2.2.7. School leadership in the context of this research

Literature on school leadership has been extensively reviewed. Based on this literature review we will now define the leadership model which will be considered for this research. School leadership will be seen in relation to its support to the Professional Learning Community that is how it initiates, influences and facilitates the development of the Professional Learning Community. School leadership is a broad concept, however for the purpose of this research we will focus on certain key aspects only although other roles are also important. For example, the managerial role of the school leader though essential will not be considered as it is important in all school contexts and does not influence the Professional Learning Community in particular.

As given in the theoretical model, we referred to **supportive school leadership**. This term has been coined based on the leadership model which is most appropriate for the Professional Learning Community. Firstly school leadership is considered as a collective density and not only the head of school (rector). It is termed as the School Management Team (SMT) and includes the rector, deputy rector and heads of departments, that is all actors who have leadership roles in the school. This is in line with shared and distributed leadership which are considered to be the appropriate leadership models to promote collaboration and to sustain the Professional Learning Community. Secondly, working as a Professional Learning Community demands higher levels of operation and a systematic approach to teaching and learning. This aspect of the Professional Learning Community requires good instructional leadership in order to guide and inform the process. Transformational leadership also supports the Professional Learning Community as school leaders are seen as role models focusing on motivation, intellectual stimulation and individualized consideration which are important attributes to guide the Professional Learning Community. The leadership model proposed is not predefined and fixed but a dynamic one which can mutate and adapt to the context and the actual situation. Hence
the leadership model in this research is more about the social influence of all the school leaders on the school as an organization.

To sum up, the leadership model chosen for this research is based on shared and distributed leadership, instructional leadership and to some extent transformational leadership. The leadership roles are seen in connection with their influence on the school factors and the functioning of the Professional Learning Community.

This section of literature on leadership has explored an array of the educational leadership theories and practices in relation to secondary schools worldwide. It has provided a comprehensive outlook on school leadership, its different forms and their effectiveness, and how they impact on the school as an organization. School leadership in action determines the prevalent school climate, culture and conditions which in turn determine the overall functioning of the school. Most of the effects of school leadership on students are mediated by these characteristics. A significant challenge for both leadership practice and research is to identify those characteristics known to have direct effects on students and to inquire about the nature and strength of the relationship between them and leadership. There is an uneven distribution of research on leadership in the different countries and developing countries in Africa are emerging in this knowledge base but need to make considerable progress. Mauritius is one of the African countries where development in research is expected to happen in the near future. For the purpose of this research, we will investigate about some aspects of school leadership including shared leadership, distributed leadership, instructional leadership and to some extent transformational leadership.

School effectiveness is dependent, to varying extent, on the school leadership and the school factors. The way the school leader addresses the school factors is important in creating an enabling school environment and together with the staff, a Professional Learning Community can be developed.
2.3. Professional Learning Communities

A learning community which is motivating and efficient provides the support for effective teaching and learning. Earlier models worth mentioning here are: schools as “learning organizations”, where Senge (1990) described on the five disciplines: personal mastery, shared vision, mental models, team learning and system thinking and “community of practice”, where Lave and Wenger (1991) talked about situated learning, a process of sharing information and experience with the group and members learn from each other and have an opportunity to develop themselves personally and professionally. The OECD-UNICEF (2016) ‘Policy Advice and Implementation Support’ paper on ‘What makes a school a learning organisation’ describes a learning organization as

\[ \text{a place where beliefs, values and norms are brought to bear in support of sustained learning; where a ‘learning atmosphere’, ‘learning culture’ or ‘learning climate’ is nurtured and where ‘learning to learn’ is essential for everyone involved}(p.9). \]

In a school as a learning organization, promoting and supporting continuous professional learning for all staff is a priority. Professional learning is focused on student learning and school goals and is based on work-based learning, assessment and feedback. Time, resources and the school culture support the professional learning. Team learning and collaboration enable staff to make their own learning more powerful. The essential core values are trust and mutual respect. Staff engages in forms of inquiry to investigate and extend their practice thus, establishing a culture of inquiry, exploration and innovation. The school development plan is evidence-informed, based on learning from self-assessment and updated regularly. The school has embedded systems for collecting and exchanging knowledge and learning. Learning also involves interaction with external environment and larger systems as the school is an open system. Partnering with parents, community, peers from other schools, higher education institutions, non-governmental organizations deepen and extend learning. ICT is widely used to facilitate communication, knowledge exchange and collaboration with the external environment. Developing the school as a learning organization is seen as the way forward in the improvement process (OECD-UNICEF, 2016).
Based on recent literature review, Professional Learning Communities are seen as a model of teacher in-service for school improvement and enhanced effectiveness. Louis et al. (1996) describes PLC as ‘a collaborative team of teachers which meet regularly outside of school hours to hone their teaching craft and improve pedagogical practices’. This interaction of teachers outside of their classroom is the focus of the school improvement model.

There is no universal definition of a Professional Learning Community. PLC may have shades of interpretation in different contexts, but there appears to be broad international consensus that it suggests a group of people sharing and critically interrogating their practice in an ongoing, reflective, collaborative, inclusive, learning-oriented, growth-promoting way (Mitchell and Sackney, 2000; Toole and Louis, 2002); operating as a collective enterprise (King and Newmann, 2001).

2.3.1. Characteristics of Professional Learning Communities

Professional Learning Communities have been described by several authors. They have used slightly different terminologies to describe its characteristics and each one has focused on certain specific dimensions. But in principle there seem to be consensus on the meaning and characteristics of the PLC. The model of the PLC as described below is based on the models proposed in the literature. PLCs appear to share five key characteristics or features, which appear to be intertwined, operating together (Louis et al., 1995; Hord, 2004). These are:

- **Shared values and vision**- Having a shared vision and sense of purpose has been found to be centrally important (Andrew and Lewis, 2007). In particular, there is a strong focus on all students’ learning (Hord, 2004). Individual autonomy is seen as potentially reducing teacher efficacy when teachers cannot count on colleagues to reinforce objectives (Louis et al., 1995). They suggest that a shared value base provides a framework for “shared, collective, ethical decision making”.

- **Collective responsibility**- There is a broad agreement in the literature that members of a PLC consistently take collective responsibility for student learning (King and Newmann, 2001; Leithwood and Louis, 1998). It is assumed that such collective responsibility helps to sustain commitment, puts peer pressure and accountability on those who do not do their fair share, and eases isolation (Newmann and Wehlage, 1995).
• **Reflective professional inquiry** - This includes: ‘reflective dialogue’, conversations about serious educational issues or problems involving the application of new knowledge in a sustained manner; ‘deprivatization of practice’((Louis *et al*., 1995), frequently examining teachers’ practice, through mutual observation and case analysis, joint planning and curriculum development (Newmann & Wehlage, 1995); seeking new knowledge (Hord, 2004); tacit knowledge constantly converted into shared knowledge through interaction (Fullan, 2001); and applying new ideas and information to problem solving and solutions addressing pupils’ needs (Hord, 1997).

• **Collaboration** - This concerns staff involvement in developmental activities with consequences for several people, going beyond superficial exchanges of help, support, or assistance (Louis *et al*., 1995) for example joint review and feedback (Hord, 2004). The link between collaborative activity and achievement of shared purpose is highlighted (Newmann & Wehlage, 1995). Feelings of interdependence are central to such collaboration; a goal of better teaching practices would be considered unachievable without collaboration, linking collaborative activity and achievement of shared purpose. This does not deny the existence of micro-politics, but conflicts are managed more effectively (Hargreaves, 2003).

• **Group, as well as individual learning is promoted** - All teachers are learners with their colleagues (Louis *et al*., 1995). Collective learning is evident, through collective knowledge creation (Louis, 1994), whereby the school learning community interacts and engages in serious dialogue and deliberates about information and data, interpreting it communally and distributing it among them.

In a similar trend, Newmann and Associates (1996) posit five essential characteristics of PLCs namely ‘shared values and norms; a clear and consistent focus on student learning; reflective dialogue; reprivatizing practice to make teaching public and focus on collaboration’. Schools where these components are combined to focus on student learning are more effective in sustaining improved student learning. This is the reason why the Province of New Brunswick has chosen to support the development of the PLC concept throughout the public school system (Williams *et al*., 2008, p.11).

In addition to these five characteristics, the following are also seen as fundamental for the success of PLCs: mutual trust, respect and support among staff members; inclusive membership – the community extending beyond teachers and school leaders to support staff, and it being a school-wide community rather than consisting of smaller groups of staff; and openness, networks and partnerships – looking beyond the school for sources of learning and ideas (Bolam *et al*., 2005; Stoll *et al*., 2006). Hence, the shift from a view of
schools as bureaucratic organizations to one of schools as Professional Learning Communities tends to be the trend in many countries.

Such a model of collaborative learning is appropriate for the modern and fast changing challenges facing the school worldwide. Shared vision and values with the focus on student learning need to be well understood. With this view in mind, all staff members put their efforts, skills and knowledge together to create a learning environment. School leaders provide all necessary support and leadership required. One important precondition for the PLC to work is collaboration. Teachers need to work collaboratively towards the shared vision and values in order to promote student learning.

**Collaboration**
Collaboration has always been considered as one prerequisite for school effectiveness and school improvement. It has also been associated with increased academic performance. Collaboration is at the core of the Professional Learning Community. Ronfeldt *et al.* (2015) studied how kinds of collaborations that exist in instructional teams impact on student achievement in 336 Miami-Dade County public schools over a period of 2 years. The results support policy efforts to improve student achievement by promoting teacher collaboration about instruction in teams.

While virtually all respondents reported participating in collaborations, they collaborated from less than 30 minutes per week (12%) to more than 3 hours per week (24%). Survey results also suggested that some kinds of collaboration are more common than others:

<table>
<thead>
<tr>
<th>Types of Collaboration</th>
<th>% Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meeting frequently to discuss ways to increase achievement</td>
<td>75%</td>
</tr>
<tr>
<td>Meeting with colleagues to examine student work</td>
<td>68%</td>
</tr>
<tr>
<td>Observing colleagues to provide instructional feedback</td>
<td>22%</td>
</tr>
</tbody>
</table>

The nature and extent of teachers’ collaboration have been addressed. It is also reported that there are two kinds of collaboration which are likely to promote gains in students’ learning: (1) collaboration focused on analyzing student data and developing instructional responses and (2) collaboration focused on curriculum and instructional decision-making.
They also cited Vescio et al. (2008): ‘The most effective PLCs were those characterized by collaboration with a clear and persistent focus on data about student learning’. It is also noted that teams that maintained a high level of ‘group instructional practice’ like preparing together for instruction, co-teaching, observing one another, and grouping students flexibly for particular instructional purposes had better student achievement. They found that years of experience are not related to collaboration measures. According to the survey carried out, 88% of the respondents reported instructional teams as ‘helpful’ and 10% reported them as a little ‘helpful’ and only 2% as ‘not helpful’. This shows that collaboration is vital and teachers are aware of its importance in promoting student achievement and they do make the effort to collaborate. The research showed that the extent of collaboration was greatest in two domains: ‘reviewing formative assessments and developing instructional strategies’; and least in: ‘addressing classroom management/discipline issues and reviewing students’ classroom work’.

It is noted that different kinds of schools have different kinds of instructional collaboration. Collaboration factors can be said to be a function of school characteristics. It is found that elementary schools report, on average, better quality collaboration compared to secondary schools. Collaboration is mainly about instructional strategies, curriculum and students. By contrast, the quality of collaboration about assessment was statistically similar between elementary and secondary schools.

Results from the study indicate that schools that have instructional teams engaged in better collaboration also have higher achievement gains in both math and reading. This evidence suggests that instructional collaboration has positive effects on students’ achievement gains. It is found that teachers perform better when they are in schools that had better collaboration in these areas. Teachers who worked in schools with better quality collaboration tended to be more effective at raising student achievement. Therefore, collaboration can be teacher-level or school-level; the results indicate that, ‘even when working in schools with better or worse quality collaboration, the benefits of being a more collaborative individual persist’. Therefore, as a first step, it is important to improve the effectiveness of individual teachers engaged in collaboration. On the other hand, the analyses indicate that the same teacher improved at greater rates when he/she
worked in schools with better collaboration than when he/she worked in schools with worse collaboration.

It is noted that while collaboration across a range of instructional domains is likely to be beneficial, time and resources for collaboration are limited, so teachers and schools often must prioritize some instructional topics over others. The findings suggest that “district and schools benefit most by structuring collaboration in instructional teams around local formative assessments and state assessments”. This is one way to collaborate effectively for improving student achievement. However, although collaboration may be an essential condition for collective learning, it does not ensure it. Collective learning is not the sum of individual learning; it is rather:

...a process of mutual influences and mutual learning that transpires in a group context and that is shaped by group norms, expectations, interactions, knowledge bases, communication patterns and so on (Mitchell and Sackney, 2000, 46).

Duncombe and Armour (2004) distinguish between cooperation and collaboration. The former refers to a situation where teachers cooperate with each other, share work and swap lesson plans, while in a collaborative situation they work together to solve problems by discussing and exploring possible solutions. In this study a distinction is made between collaboration as the structure of people working together and collaborative learning, which refers more to the content of the collaboration.

Finally, it is also noted that even in the absence of school-wide collaborative structures, individual efforts to collaborate should not be overlooked; school leaders and teachers should find ways to encourage such efforts. McLaughlin and Talbert (2001) studied professional communities in 16 high schools in the USA. Their findings suggest that teachers in most high schools are left “on their own” in their practice as they chose, in keeping with the norm of professional autonomy. However, they found that, in several departments, teachers worked together around shared beliefs and responsibilities for teaching. In their study, there were more differences within schools than between them in terms of professional community.

Understanding the different levels and forms of collaboration and their positive effects on student learning has been discussed. Collaboration is the foundation for the PLC. It is
therefore, essential that teachers develop collaborative skills and attitudes; collaborative structures and space are provided and a collaborative culture is created. Collaboration does not occur automatically, but needs to be developed, nurtured and supported. Professional Learning Communities posit on this collaborative base. It is the means to achieve professional learning and development for greater school effectiveness.

**Impact of Professional Learning Communities**

A key purpose of PLCs is to enhance teacher effectiveness as professionals, for students’ ultimate benefit; hence the ultimate outcome of PLCs has to be experienced by students, even though there is an intermediate capacity-level outcome.

> An effective Professional Learning Community has the capacity to promote and sustain the learning of all professionals in the school community with the collective purpose of enhancing pupil’s learning. (Bolam et al., 2005, p.145)

Little (2002) reports that research has steadily converged on claims that professional community is an important contributor to instructional improvement and school reform. In Australia, Andrews and Lewis (2007) also found that where teachers developed a PLC, it not only enhanced their knowledge base, but also had a significant impact on their classroom work.

In Wales, Professional Learning Community is seen as a strategy for school and system improvement. Harris and Jones (2017) study the country wide investment in the PLC, whereby a ‘National PLC model’ was developed. They report that in 2008, the Welsh government worked on a National School Effectiveness Framework and in this context schools clusters work together on innovative and collaborative activities. At an early stage, heads of schools and teachers were introduced to ‘a set of guiding principles around effective professional collaboration, teacher enquiry and teacher research’. The training was then extended to all schools in Wales. The Welsh government agreed definition of the PLC was established as follows:

> A PLC is a group of practitioners working together using a structured process of enquiry to focus on a specific area of their teaching to improve learner outcomes and to raise school standards. (Harris and Jones, 2017)
They showed that under the right conditions PLCs have the potential to build professional capital. However, they ‘reinforce the need for rigorous and sustained implementation if a lasting impact is to be achieved’.

Bryk, Camburn, and Louis (1999, p.767), however, caution that the path between professional community and instructional improvement is not necessarily direct, because instructional improvement may be only one of schools’ many purposes. They note how a high performing school with a long history of providing challenging intellectual work for its students, that develops into more of a professional community, might be orienting its professional interaction towards conserving existing practices rather than changing them. Their findings lead them to suggest that “If professional community in fact fosters instructional change, it does so by creating an environment that supports learning through innovation and experimentation” (p.771).

Cordingley et al. (2003) concludes from a systematic review of the literature on sustained, collaborative professional development (CPD) and its effect on teaching and learning that collaborative CPD could have a positive impact on teachers and pupils. The reported changes in teacher behaviour included: greater confidence; enhanced beliefs among teachers of their power to make a difference to pupils’ learning; development of enthusiasm for collaborative working, despite initial anxiety about classroom observation; and greater commitment to changing practice and willingness to try new things. The positive impact on students included enhanced motivation and improvement in performance.

Furthermore, in a high school study, Wiley (2001) finds that individual student achievement in math was positively affected by an increased learning in a school resulting from professional community, but only in schools where teachers experienced above average transformational leadership. The effects were also particularly strong in disadvantaged areas.

However, in the Netherlands, Visscher and Witziers (2004) carried out a study exploring the link between departmental professional community and math test scores. They concluded that shared goals, joint decision-making, shared responsibilities, consultation
and advice were important but insufficient to improve educational practice and, consequently, student achievement. Rather, effects resulted when departments

*Consistently translate their shared vision and willingness to cooperate into a system of rules, agreements and goals regarding teaching and instruction, and evolve their professional activities around this by obtaining data on student performance, which in turn serves as a feedback mechanism for improving teaching and learning. This differs from a ‘softer’ approach stressing reflective dialogue, sharing materials, shared vision and the inner value of professional development* (p. 798).

A case study on three schools in Iceland (Sigurdardottir, 2010) shows that improvement in the Professional Learning Community can improve the schools’ level of effectiveness. Schools can be changed to support better student achievement through individual and collaborative learning, even though the teachers did not perceive this as happening. Results from this study also confirm that improving the teacher’s skills and work conditions inside the classroom are more likely to directly affect student outcomes than improving factors of school life outside the classrooms.

The aim of the PLC is therefore to sustain learning at all levels. It is seen as a capacity to improve schools by improving instructions. However, the impact of the PLC on learning may not be direct; it creates the environment that fosters innovation and creativity and leads to collective professional development. It therefore, enables teachers to be more systematic in their approach. Improving teachers’ skills and work environment probably have a direct effect on instruction and student learning.

**2.3.2. Professional Learning Communities and teaching practice**

As discussed in the previous section, at its core, the concept of a Professional Learning Community rests on the premise of improving student learning by improving teaching practice. In a review of research on PLCs, Vescio *et al.* (2006) reveal that all research on PLCs attempt to make connections between learning communities and the classroom practices of teachers. All ten research articles reviewed supported the idea that participation in a learning community leads to changes in teaching practice. However, only four of them mentioned specific changes teachers made in their classrooms. Vescio *et al.* (2006) stated that participants increased the use of techniques such as added
flexibility of classroom arrangements and changes in the pace of instruction to accommodate varying levels of student content mastery, however data about practices at the beginning of the study were not provided, hence decreased the power of reported findings.

In their study, Hollins et al. (2004) reported that twelve participating teachers focused primarily on the challenges of trying to successfully teach low achieving African American students. They noted that by the tenth meeting, the focus had become more strategy as teachers designed a new “approach to language arts instruction that involved letter writing, a poetry project and class books, and employed the writing process”. (p.258) As a part of this process teachers used strategies that included, “visualization techniques to help children understand their reading, manipulation of site words using flash cards, and different strategies for having the children change words to make new ones” (p.259).

Another example comes from Strahan (2003) case study of an elementary school where all of the teachers participated in efforts to improve student achievement in reading. As part of the change process teachers worked collaboratively to develop a shared school mission around four guiding values that included integrity, respect, discipline, and excellence. Strahan (2003) concludes that this led to the development of stronger instructional norms and made the teachers receptive to working with a curriculum facilitator in the areas of changing practices for guided reading, writing, and self-selected reading.

Organizational capacity stems from structural factors that can help or hinder a school’s growth as a learning community. Massell and Goertz (2002) contend that capacity building provides consistency and focus, but it requires sufficient time and support to change teacher’s practices. This support must be developed through human resources and structural support from within the school and through networking beyond the school. Fullan (2005a) captures the importance of redefining professional development stating that capacity building “is the daily habit of working together, and you can’t learn this from a workshop or course” (p.69)
In a very recent study carried out by Dufour and Reeves (2015) on how teachers feel about PLCs, there seem to be a lot of confusion. Teachers prefer to have professional development that will help them plan and improve their instruction including hands-on strategies relevant to their classrooms. They prefer professional development that is teacher-driven and is sustained over time. They believe that teachers are professionals with valuable insights. Moreover, teachers see themselves as members of strong collaborative cultures and they also see significant benefits in their day-to-day work in key instructional areas. These findings are consistent with the PLC model and therefore, show that teachers are in favour of operating within the PLC. The confusion arises in the finding that ‘teachers surveyed say that the least beneficial of their professional development opportunities is in fact Professional Learning Communities’. The problem probably lies in the definition of a PLC, their definition of the PLC is different from the ones observed in some high performing schools in many countries as they perceive the time given for collaboration as ineffective. Further inquiry shows that the teachers are not using the time for valuable professional exchanges but talking about things that are irrelevant to their professional development. No doubt they do not agree with the benefits of the PLC as they are not operating as a PLC. Dufour and Reeves concluded:

*While providing time for educators to collaborate in meaningful teams is a necessary condition for effective PLCs, it is far from sufficient. A Professional Learning Community is not simply a meeting: It is an ongoing process in which educators work collaboratively in recursive cycles of collective inquiry and action research in order to achieve better results for the students they serve (p.2).*

Therefore, for the PLC to succeed all the necessary prerequisites need to be carefully planned and the school leader has a key role to play.

PLC is directly related to teaching practice. It helps to bring about incremental changes over time. However, for this to happen, support is needed in all its forms: pedagogical, structural, cultural, emotional… PLC is therefore, considered as one form of capacity building that is effective in the daily tasks of the teacher.
2.3.3 Professional Learning Communities and student achievement

In an educational climate that is increasingly directed by the demands of accountability, the viability of Professional Learning Communities will be determined by their success in enhancing student achievement. This makes it incumbent upon teachers to demonstrate how their work in learning communities improves student learning.

In a case study documenting the efforts of a middle school faculty engaged in learning community efforts to target low and underachieving students, Phillips (2003) reported that achievement scores increased dramatically over a three-year period. In this middle school, ratings on a state-wide standardized test went from acceptable in 1999-2000 with 50% of the students passing subject area tests in reading, writing, math, science, and social studies, to exemplary in 2001-2002 with over 90% of the students passing each subject area test.

Berry _et al._ (2005) documented the progress of a rural elementary school over a four-year period. During this time, the results of grade level testing indicated that students improved from struggling with slightly more than 50% performing at or above grade level to rapidly improving with more than 80% of students meeting grade level standards. Guskey (2007) argues that student data collected in bureaucratically operated schools focus primarily on summative assessment and fail to address the need for timely classroom interventions. Whereas data collected in a PLC focus more on formative assessment used to support school efforts to transform teaching and learning (Guskey, 2007) and become part of a coherent plan for comprehensive school-wide reform (Rusch, 2005).

Lomos _et al._ (2011) carried out a meta-analysis of five empirical studies on PLC and student achievement. The focus of the meta-analysis was on secondary/high schools in different countries, three studies in the United States, one in the Netherland and one in England. Although there are different shades in their concept of the PLC, using statistical tests, they showed that there is a significant relationship between PLC and student achievement.
Dufour and Reeves (2015) reported that in a study conducted involving more than 200 schools in four countries with more than three-quarters of a million students; they found a strong link between gains in student achievement and long term implementation of PLCs. Research therefore proves that there is a positive correlation between PLC and student achievement. Moreover, studies have been carried out over a long period of time during which positive changes have been measured. Hence, PLC is promising as a system wide approach to improve learning.

2.3.4. Professional Learning Communities and school culture

Professional Learning Communities bring a change in the professional culture of a school. Fullan (2000) describes the move to PLCs as reculturing that “involves going from a situation of limited attention to assessment and pedagogy to a situation in which teachers and others routinely focus on these matters and make associated improvements” (p.582). Similarly, Morrisey (2000) contends that unlike the past attempts to improve education, a PLC is not a package of skills or a short-term program to implement, but an entire new way for schools to function.

Establishing a PLC contributes to a fundamental shift in the habits of mind that teachers bring to their daily work in the classroom. All ten studies that Vescio et al. (2006) analysed cited empirical data suggesting that a change in the professional culture of the school had occurred. Six of the studies drew upon quotes from participants to document this finding (Andrews & Lewis, 2002; Berry et al., 2005; Englert & Tarrant, 1995; Hollins et al., 2004; Phillip, 2003 and Strahan, 2003). Three of the studies used survey data that compared participants to non-participants (Dunne et al., 2000; Supovitz, 2003 and Christman, 2003); and one used survey data generated from teachers participation in critical friends group (Whitford and Fisher, 2003).

Vescio et al. (2006) therefore, claim that there seemed to be characteristics inherent in learning communities that worked to promote changes in teaching cultures. These can be broadly organized into four categories that include: collaboration, a focus on student learning, teacher authority, and continuous teacher learning (p.9). According to them, there is a multifaceted interweaving of how these factors come together to change
teaching cultures. Finally Crow (2008) writes: “A Professional Learning Community requires intention, a focus on learning, a focus on results, a commitment to collegiality and willingness to reshape a school’s culture”.

Louis and Lee (2016) carried out a recent investigation on how key elements of school culture are associated with teacher’s capacity for organizational learning. The study was carried out in 3 types of schools (elementary, middle and high school) in 117 schools in 9 states in the US. The results indicate core aspects of school culture as perceived by teachers such as academic press, support for students, and trust and respect matter for teacher’s capacity for organizational learning. It was stated that:

*) Providing clear priority to academic standards (e.g., Setting high standards for academic performance, assessments practices reflecting curriculum standards) and promoting a sense of importance among staff around academic achievement (e.g., setting clear learning expectations for all students) are positively associated with teachers’ capacity for organizational learning in schools.

It was also found that trust and respect among adults in school are positively associated with teachers’ capacity for collective learning. Therefore, the role of the teachers’ culture in shaping their capacity for organizational learning appears to be of high importance. Louis and Lee (2016) also investigated on the key aspects of the PLC which they grouped as three variables: shared responsibility, reflective dialogue and deprivatised practices. These were found to be more significant predictors of organizational learning than academic press, academic support for students and trust and respect. They explained that it is so probably because these three variables are the organizational backbone where collective interactions for professional learning take place. These three variables are less present in secondary schools compared to elementary schools. They suggest that the possible reasons for this tendency are because secondary schools in the US are more likely to be compartmentalized by their subject specializations. This result is consistent with previous findings (Louis, 1998; Wahlstrom and Louis, 2008) that ‘professional community in US schools is higher in elementary schools than in secondary settings’. Hence, it is concluded that the presence of many small groups does not necessarily promote teachers’ capacity for organizational learning. This setting does not promote transformation at an organizational level of learning. They propose that departmental
compartmentalization can be overcome with more intensive efforts to network dialogue between departments. Teachers may not benefit from these cross-subject interactions in terms of content knowledge on the subject; they can have opportunities to learn different types of knowledge and skills (e.g., pedagogical skills, ICT skills) from teachers’ who teach different subjects. Also they can share information about particular students for the purpose of academic and pastoral support, important school issues, teaching philosophy, professionalism through cross-subject interactions which can be an important ground for school improvement.

Concerning the school context, Louis and Lee reported that schools with low income students are also disadvantaged in many other ways. However, the study reveals that there is no significant relationship between poverty level and organizational learning. Therefore, high poverty schools have a similar level of teacher capacity for organizational learning as those that are more affluent.

These findings suggest that there is an increasing emphasis on ‘the importance of creating supportive school environments’ which is a pre-condition for successful change.

According to these research findings, we can say that Professional Learning Communities are closely associated with a learning and professional culture, whereby teachers and school leaders are called for a higher level of operation. In addition to the teaching and learning process, systematic analysis of results informs the improvement process. It is a way of functioning that demands a shift in the mental set. It has also been shown to help reculturing schools. The focus is on improving results through a collaborative process. For this to happen, all collaborators should share the same vision and values. Therefore, for the development of a PLC all the elements of culture need to be addressed.
2.3.5. How to create and develop a Professional Learning Community?

The decision to adopt the PLC approach to school reform is only the first and arguably the easiest step. Over 30 years of effort has proven that successful implementation is far more difficult (DuFour, Eaker and DuFour, 2005).

Creating and developing PLCs appear to depend on working on a number of processes inside and outside schools. It has been described under four headings: focusing on learning processes; making the best of human and social resources; managing structural resources; and interacting with and drawing on external agents.

**Focusing on learning processes** – A PLC cannot be built solely through providing professional development opportunities for staff. Bolam and McMahon (2004) argued that if the community is to be intellectually vigorous, members need a solid basis of expert knowledge and skills, strongly emphasizing the professionalization of the teachers’ work through increasing expert knowledge.

In his study, McMahon (1999) illustrated many examples of teachers reporting powerful learning experiences, for example shadowing a senior manager; secondment for academic study among others.

Professional learning is widely believed to be more effective when it is based on self-development and work-based learning, an idea supported by specific theories like experiential learning (Kolb, 1984), reflective practice (Schön, 1984), process knowledge (Eraut, 1994), cognitive and problem-based professional learning (Grady et al., 1995), professional socialization (Hart and Weindling, 1996) and learning of skilful managerial performance and associated learning support (Wallace, 1991). Tools for implementing these ideas include professional development profiles, action research, action learning, coaching, mentoring and peer-assisted learning.

Creating, developing and sustaining PLCs are a human enterprise and the literature suggests that making effective use of human and social resources is a key dimension.

Also, working together productively in schools depends on positive relationships and collegiality (Louis et al., 1995). Reynold (1996), on his hand argues that a dynamic of
dysfunctional relationships can have a negative effect on a school. As Bryk et al. (1999, p. 767) note:

*By far the strongest facilitator of professional community is social trust among faculty members. When teachers trust and respect each other, a powerful social resource is available for supporting collaboration, reflective dialogue, and deprivatization, characteristics of professional community.*

Schools are bounded by structures shaping their capacity to create and develop a PLC (Louis & Leithwood, 1998). Evidence of teacher talk and exchange about professional issues is a key indicator of a learning community. To facilitate this, the research suggests that school needs to be organized to allow time for staff to meet and talk regularly (Louis et al., 1995). This means timetabling, being able to cover teachers who attend external training, and how schools plan such learning can occur throughout the school.

Time was seen to be insufficiently addressed in England’s strategy for professional development (Thompson, 2001). The Government subsequently recognized that teachers needed more time to plan, prepare and spend on their own professional development.

Opportunities for professional exchange appear to be further facilitated by physical proximity (e.g. teachers in a department having neighbouring classrooms) and interdependent teaching roles (e.g. team teaching; joint lesson planning). McGregor (2003, p. 54) found that, over the course of break times, the majority of the 25 staff of a secondary school science department visited “*the tiny office, providing the opportunity for casual, serendipitous contact as well as more focused social or work-related conversations*”.

To promote, sustain and extend PLCs, schools appear to need external support, networking and other partnerships. Leithwood et al. (1998) believe that external support for PLCs comes mainly in the form of district support.

Many schools have built productive relationships with partners, including parents, governing bodies, their district, local community members, social services agencies, psychological services, businesses and industry. Schools have also engaged in a range of initial and ongoing teacher development partnerships with higher education institutions.
Watson and Fullan (1992) concluded that strong partnerships are not accidental; neither do they arise through good will nor ad hoc projects. They require new structures, activities and rethinking of the way each institution operates as well as how they might work as part of this partnership.

Networking within and between schools is imperative for the development and sustainability of PLCs. A further push comes from new technologies transforming learning and knowledge sharing. Hargreaves (2003, p.2007) suggests that:

*A network increases the pool of ideas on which any member can draw and as one idea or practice is transferred, the inevitable process of adaptation and adjustment to different conditions is rich in potential for the practice to be incrementally improved by the recipient and then fed back to the donor in a virtuous circle of innovation and improvement. In other words, the networks extend and enlarge the communities of practice with enormous potential benefits...*

The Professional Learning Community model in Wales is one that reinforces professional networking and collaboration as a main lever for change (Egan and Hopkins, 2009). It reinforces that PLCs can stimulate and spread innovation about learning and teaching practices, as well as raise collective and individual professional performance (Hopkins, 2006).

In many countries, PLCs have been created and developed either as a reform initiative or in order to improve some specific schools. It is seen as an effective measure as it leads to professionalization of teaching and learning. It promotes teacher competency and efficacy. However, to sustain a PLC, time and opportunities to interact is essential, it can be in one department in a school, school wide or between schools. Trust among faculty members and positive interpersonal relationships are important soft skills required for the elaboration of a PLC. There are some factors that hamper the development of a PLC, should they be removed, there is a greater chance for the PLC to succeed.
2.3.6. Factors that hinder creation and development of PLCs

In spite of broad agreement in the literature as discussed in the previous subsections on PLCs as a way to increase a school’s capacity for improvement and learning, there are many barriers to achieving this. Fullan (2005b) contends that one important barrier to implementing PLCs in schools lies in the failure to consider the context at all three levels of the system – schools, districts, and provincial departments of education. He believes that it is unreasonable to expect schools to become PLCs while the district and provincial levels of the education system continue to operate solely as bureaucracies. Fullan (2006) further argued “If you want to change systems, you need to increase the amount of purposeful interaction between and among individuals within and across the tri-levels” (p.116).

Similarly, in his study on schools in New Brunswick, Williams et al. (2008) attribute the failure of reform efforts to their singular focus on one level of the system. They claim that “policy makers who wish to significantly reform educational systems and improve our schools must adopt a tri-level system approach” (p.2).

Another major obstacle to create and sustain a PLC is teacher isolation. Williams et al. (2008) state that the culture of many schools promotes teacher isolation and individual effort and this culture is more deeply embedded in the high schools. Sigurdardottir (2010) reports that majority of teachers in the schools under study knew very little about each other’s practices, more so in the less effective school.

DuFour (2004) argues that much of the effects of a PLC culture depend on the existence of a school-wide capacity to focus on learning rather than teaching. DuFour (2004) laments that the fact that all combinations of individuals with any interest in schools are now calling themselves Professional Learning Communities. Yet, using the term PLC does not demonstrate that a learning community does in fact exist. DuFour (2004) cautions that “the term has been used so ubiquitously that it is in danger of losing all meaning”. In order to prevent the PLC model from the same dismal fate as other well intentioned reform effort, DuFour recommends that educators continually reflect on the ways they are working to embed student learning and teacher collaboration into the culture of schools. To demonstrate results PLCs must be able to articulate their outcomes
in terms of data that indicate changed teaching practices and improved student learning, something they have not yet established as common practice. Furthermore, Bolam et al. (2005) found that a school-wide capacity to promote and sustain learning was too often missing. Andrews and Lewis (2007) further argued that as the measure of school success shifts from effective teaching to outcomes-based learning teachers are required to revise their classroom instructional practices and develop greater program coherence.

In the Wallace report (2013), Linda Darling-Hammond referred to a previous study and said that 80% or more of the teachers surveyed agreed that they have the opportunity to collaborate with each other, yet only 15% of the same teachers agreed that there is a collaborative culture in their schools. She believes that the collaborative learning environment is crucial in schools. So she proposed that teachers should be trained to become good collaborators and community members from the very beginning of their career.

Therefore, in order to ensure the functioning of the PLC, teachers and schools cannot act in isolation, they need the support at higher levels and it should become a way of functioning at all levels. Teachers need to develop the necessary skills to be able to work collaboratively for a common purpose. In the school context, one great deterrent is the way teacher tend to work. Schools in general, tend to favour individual teacher effort and teacher isolation. This traditional school culture is very strong and difficult to change.

2.3.7. Leading a Professional Learning Community – Supportive Leadership

It is difficult to see how a PLC could develop in a school without the active support of leadership at all levels. Leadership is therefore an important resource for PLCs, in terms of principal commitment and shared leadership (Mulford & Silins, 2003). The nature and quality of the leadership provided by the principal and senior staff has a significant influence on the nature of the school culture (Schein, 1985).

The joint action, characteristic of PLCs, has been described as distributed leadership (Gronn, 2000; Spillane, 2006). In many PLCs, principals work with teachers in joint enquiry and provide opportunities for teachers to take on leadership roles related to bringing about changes in teaching and learning. Based on Australian research into PLCs Crowther (2001) suggested that, within the community, pedagogic leadership works in
parallel with strategic leadership as teacher leaders and administrative leaders develop new roles and relationships within the school. Harris (2003, p. 322) also concludes:

If we are serious about building Professional Learning Communities within and between schools then we need forms of leadership that support and nourish meaningful collaboration among teachers. This will not be achieved by clinging to models of leadership that, by default rather than design delimits the possibilities for teachers to lead development work in schools.

Harris (2009) states that distributed leadership is primarily concerned with the reciprocal interdependencies that shape leadership practice. A distributed perspective on leadership recognizes that leadership involves multiple individuals and crosses organizational boundaries. Distributed leadership encompasses both formal and informal forms of leadership practice. Consequently within PLCs, distributed leadership is characterized by teachers working together on a shared area of enquiry. Distributed leadership provides the infrastructure that holds the community together, as it is the collective work of educators, at multiple levels who are leading innovative work that creates and sustains successful PLCs.

Most of the researches on PLC have been effected in western countries where the PLC model is embedded in the school system. Leclerc et al. (2013) studied how the school leader can act as a pillar for the establishment of a Professional Learning Community among special education teachers at the secondary level. The example of one school which has established and functioned as a PLC for 2 years was under study. It is interesting to note how the school leader and the deputy school leader have put in place systems to develop the PLC and how they are always supporting the staff during the meetings and providing structural support for the PLC to work. Leclerc et al. (2013, p.128) proposed seven dimensions that the school leader need to consider and take actions for the development of the PLC. These are:

- **ideological** (work around shared vision and values for promoting student learning);
- **organizational** (create collaborative teams, provide the appropriate structural support and climate; and define responsibilities);
- **affective** (develop a collaborative culture and enable teachers to work interdependently);
- **participative** (engage everyone in the process and the school leader provides pedagogical support, shares leadership roles and decision making);
- **cognitive** (sharing good practices based on evidence, collective learning and continuous improvement);
- **pedagogical** (focus on the learning process, analyse results collectively and provide solutions based on research findings); and
- **reflective** (systematically and regularly analyse data and ensure that teachers possess the required skills and become reflective practitioners).

According to their study, Leclerc et al. found that the school has been successful in the implantation of the PLC with the full support and competencies of the school management despite certain difficulties like a heavy workload and limited time. They also reported two dimensions which are more difficult to establish, as pedagogical and reflective.

Another very recent research on school leadership and the PLC has been carried out in secondary schools Northeast China by Ting (2016). There, the term Professional Learning Community is not used commonly, despite the fact that the concept of the PLC is being used to improve schools. A case study on two senior high schools revealed that

*School leaders demonstrated strong instructional leadership and visionary stewardship for school improvement. They played a critical role in developing and communicating a shared vision, shaping a culture of trust, supporting and monitoring collegial learning* (p.209).

Hence, the school leader plays a very important role in creating the proper school environment and acts as a guide and facilitator towards the realization of the school vision and the ongoing school improvement.

Both schools exhibit a distributed leadership approach with a strong focus on professional development. Teachers work in collaborative teams where emotional bonds and shared responsibilities strengthen professionalism. Ting (2016, p.210) found that ‘*concerted efforts were made to create aligned structures and processes that support collective inquiry and to develop a culture of collaborative learning that builds collective capacities*’. This shows that in order to shift from ‘teachers working in isolation’ to ‘collaborative teams’, a lot of effort, training, communication and monitoring are needed from all quarters. It just does not happen overnight. Here, leadership is distributed, not on
a voluntary basis or informal manner, but team leaders are elected by team members based of their competencies. Research findings show that the leaders of the collaborative teams play an essential role in curriculum development, peer mentoring, and collaborative learning.

However, decision making process seems to be largely at the level of the school management. There is also the feeling that teachers are working under tremendous stress and they are held accountable for students’ academic performance at high stake examinations.

Harris and Jones (2017, p.31) reported that ‘many teachers noted that they found it difficult to maintain and sustain Professional Learning Communities within their schools without the support of senior leadership’. Therefore, the role of the heads of schools and heads of departments is crucial for an effective PLC. They also found that a strong and supportive leadership is an essential condition for PLCs to thrive and survive in schools.

School leadership that sustains the PLC can therefore be termed as supportive leadership. It involves leadership at all levels as a form of leadership capacity. Firstly, the suitable school leadership model is a blend of instructional leadership, transformational leadership and distributed leadership as discussed above. The support of the school leader in providing all the necessary conditions for the PLC is a determining factor. He provides the opportunities and encourages everyone to participate in leadership activities. In other words, he is a leader of leaders. Supportive leadership is therefore a school wide capacity that is built with the involvement and participation of all actors.
2.4. Theoretical Model

The Theoretical Model is based on the literature review and the theoretical framework. It depicts the school as an organization and highlights the functioning of the Professional Learning Community (PLC). It is the foundation on which the research has been oriented.

The Professional Learning Community has been studied in detail. Based on researches carried out by various authors (Louis et al., 1995; Newmann and Associates, 1996; Andrew and Lewis, 2007; Hord, 2004) as discussed in section 2.2, all the characteristics of the PLC have been identified and grouped together into 3 elements. Hence these 3 elements encompass all the characteristics of the PLC. The 3 elements are:

- *Shared values and vision focusing on student learning;*
- *Collaboration: collective learning and shared personal practices; and*
- *Continuous improvement based on reflective inquiry.*

Shared vision and values provide the framework for the functioning of the PLC. Educators directly contribute to the Professional Learning Community based on the shared vision and values. Their main focus is on student learning which is one important aspect of school effectiveness. They do so by working together collaboratively, by learning collectively and by sharing their personal practices. Through their reflective professional inquiry, there is capacity building leading to continuous improvement.

The Professional Learning Community is influenced essentially by the school structure and school climate. These factors are very important in facilitating the functioning of the PLC. They are determined and guided by the school leadership.

The school leadership influence is therefore considered to be mostly in an indirect manner. It is mainly in the creation of an enabling school environment which promotes a PLC. The support of the school leadership is instrumental in the working of the PLC.

School effectiveness can be enhanced by the collective activities of the educators in the PLC. Student effectiveness is measured in terms of student achievement and student wellbeing; which is a product of the functioning of the school system as a whole. Figure 4 depicts this theoretical model of the school as a Professional Learning Community.
Figure 4. The School as a Professional Learning Community

- Supportive School Leadership
- School Climate
- School Structure
- Shared vision and values focusing on student learning
- Professional Learning Community
- Continuous improvement based on reflective inquiry
- Collaboration: collective learning and shared personal practices
- Enhanced School Effectiveness
2.4.1. Problem Statement
As we have seen previously in the literature review and theoretical framework, there is
general consensus about the elusive link between leadership and school effectiveness
(Witziers et al., 2003). According to Leithwood and Jantzi (2000), it is clear that effective
leaders exercise an indirect but powerful influence on the effectiveness of the school.
Effective leaders are seen to share certain aspects of instructional, transformational and
distributed leadership, whereby teachers are encouraged to collaborate and work
collectively towards greater school effectiveness. Collaboration and collegiality are
essential for creating and sustaining the appropriate school culture which focuses on
student learning.

The role of school leaders to enhance collaborative work is primordial. Teachers’
collective efficacy is a strong predictor of student achievement, hence, there is a clear
need to describe what school leaders can do to support collective efficacy (Bandura,
1993; Goddard et al., 2000). The importance of working together has also been stressed
by Hargreaves and Shirley (2009), which they consider as the Fourth Way of educational
change being a new hope. Collaboration and collegiality can only be voluntary. It
requires parity among members, it is based on mutual goals and depends on shared
responsibility for participation and decision-making (Friend & Cook, 2003). The role of
the school leader is therefore to provide a conducive environment, the appropriate
pedagogical and emotional support and other conditions that are necessary for
collaboration to occur naturally.

Considering the Mauritian context, the same views and practices apply. The same school
leadership practices guide the school conditions necessary for promoting collaboration
and collegiality which determine how effective the school is. The importance of
instructional and shared leadership practices have been emphasized together with the
need to work collaboratively if we want our schools to perform better.

For quality education for more effective schools, we need to identify areas which need
improvement. In the latest educational report, Strategy Plan 2008-2020 (2008), some of
the strategic goals of secondary education are:
• to improve all aspects of quality education through measurable learning outcomes;
• to improve effectiveness of secondary school management system;
• to create a strong Quality Assurance System to secure internal efficiency and quality teaching and learning; and
• to provide continuous in-service training to school personnel at all levels.

Moreover, the new educational reform which is being undertaken aims at improving student learning and personal and professional development at all levels by updating the National Curriculum Framework and improving the school capacity.

Therefore, this research aims at exploring the extent to which rectors in Mauritian secondary schools are providing their support in the development of Professional Learning Communities for enhanced school effectiveness. It will enlighten the different aspects of the school in connection with the school factors, school leadership and the existence/creation of a Professional Learning Community.

2.4.2 Aims and Objectives of the Research

The aim of the research is to find out how the school leaders are supporting the collaborative work in their school in order to improve learning and to find out whether the existence of a Professional Learning Community leads to greater school effectiveness.

The objectives of this research are:

1. To understand whether teachers in Mauritian secondary schools are working collaboratively in the form of Professional Learning Communities.

2. To find out if Professional Learning Communities in secondary schools lead to greater school effectiveness.

3. To describe the relationship between school leadership and Professional Learning Communities in Mauritian secondary schools and to identify ways in which the school leaders support the Professional Learning Community.
The research has been organized in the form of three research questions as follows:

1. **Are educators in Mauritian secondary schools working collaboratively in the form of Professional Learning Communities?**
   The first question will look into whether educators in Mauritian secondary schools are working collaboratively and will investigate the nature of the collaboration. Then we will investigate the nature of the collaboration if present and whether it takes the form of a Professional Learning Community (PLC).

2. **Is Professional Learning Community linked to school effectiveness?**
   The second question will explore whether the existence of the PLC in Mauritian secondary schools is related to school effectiveness. That is whether schools where teachers are working collaboratively in the form of the PLC performing better.

3. **How school leadership is related to Professional Learning Community and in what ways are school leaders supporting the PLC in Mauritius?**
   The third question consists of two parts. The first part will look into the leadership aspect and will be focus mainly on instructional and shared leadership. It will address the relationship between school leadership and PLC; that is, in what ways (pedagogical support, mentoring, staff development…) and how (by encouraging shared decision-making and innovation or otherwise) rectors are coping and whether these measures help in the development of PLCs. It can also happen that the leadership style has no effect on the PLC. The second part of the question will look into the actual situation of how rectors are helping to create and to develop PLCs in their schools and whether the support mechanism is effectively leading to the development of a PLC.

Questions 1 and 2 will be based mainly on quantitative data and question 3 will be based on both on quantitative and qualitative data. First part of question 3 will be based on the survey and the second part will be based mainly on the interview data.
CHAPTER 3. Methodology

Data have been collected based on the three research questions. Firstly, we have looked into the existence of Professional Learning Communities in Mauritian secondary schools. We have then investigated the link between PLC and school effectiveness and finally we have related PLC to school leadership and we have looked into detail of how the rector is or is not supporting the creation/development of the PLC.

This study is a mixed method (Creswell & Plano Clark, 2011) based on survey questionnaires, national academic results analysis and interviews with rectors and heads of departments in Mauritian secondary schools. A mixed method has been chosen as it would capture data in different ways that would together provide a holistic picture of the existence of PLCs in Mauritian secondary schools. It has also enabled us to do triangulation, that is, we have used data from different sources to cross verify and to supplement our findings. The mixed methodology follows the Sequential Explanatory Design (Creswell, 2012), that is the quantitative data collection and analysis is followed with qualitative data collection and analysis. The aim of this research design is to derive useful information from the quantitative analysis and use it to guide the qualitative data collection in order to examine the pertinent results in more details.

Preliminary details about the PLC and leadership and relevant school conditions have been obtained from the quantitative part, more precisely, survey questionnaire for educators. School effectiveness has been measured both in terms of student wellbeing and academic performance. Data concerning student wellbeing have been obtained from the student questionnaire and academic performance of the schools has been measured in terms of the School Performance Coefficient, a comparison between school academic input and output. Further investigation into the Professional Learning Community, how it is actually experienced by the educators, HODs and rectors; and the support provided in terms of school conditions and school management have been obtained from the qualitative part through interviews. In this way, we have been able to get maximum data and carry out an in-depth exploration of the subject. This mixed method has therefore, enabled us to carry out triangulation, analyse and complement findings from different sources.
The first part of the study is therefore based on quantitative data collection through questionnaires for educators and students. The purpose of the educator’s questionnaire is to explore the leadership pattern and its impact on the school conditions and how educators are working collaboratively to promote learning. The student’s questionnaire is a measure of student wellbeing. Comparison between the school academic input (CPE results) and the school academic output (SC results) gives an indication of school’s academic performance. Student wellbeing and academic performance are taken as measures of school effectiveness.

The second qualitative phase of the study is based on the findings of the first quantitative phase. The aim of the interviews with rectors and HODs is to probe further into the nature of the collaborative activities and the type of support being provided. This part of the study is directly linked to the mechanisms of the PLC, whether it is present and to what extent!

Figure 5 shows a summary of the methodology used.
3.1. Sampling Strategy

An overview of the secondary schools in Mauritius is given. From the different types of secondary schools, 8 schools have been chosen carefully in order to give a fair representation of the whole secondary school population in Mauritius.

3.1.1. Population

In Mauritius there are 194 secondary schools, comprising of state, private and confessional schools. The school management of the three types of schools is different. Private and confessional schools operate under the aegis of the Private Secondary School Authority (PSSA). The state schools fall under the responsibility of the four zone directorates of the Ministry of Education. The MGI schools are considered as state schools and they are also managed both by the Schooling sector of the Mahatma Gandhi Institute and Rabindranath Tagore Institute (MGI/RTI) and by the zone directorates. All the secondary schools follow the same curriculum (except for the fee paying secondary schools) and have common examinations after 5 years (School Certificate Examinations) and after 7 years (Higher School Certificate Examinations). All the schools directly or indirectly, are all accountable to and fall under the big umbrella of the Ministry of Education and Human Resources (MOEHR).

![Diagram of Secondary Schools in Mauritius](image_url)

Figure 6. Secondary Schools in Mauritius (Ministry of Education, 2009)

For the purpose of this research, all types of secondary schools have been represented. The schools are classified as either state or private. State schools are under the responsibility of the zone directorate, they include state and MGI/RTI schools. Private schools are under the responsibility of the PSSA, they include confessional and private schools.

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There are few fee-paying private schools which operate very differently with an independent school management and a different school curriculum. For these reasons, they have not been included in the sampling.

3.1.2. Sampling
A purposive and convenient sampling strategy has been used to select the 8 schools for the study. They include four types: state and private schools; and low input and high input schools. The 8 schools include the state secondary schools, MGI/RTI secondary schools, private and confessional secondary schools. Schools with the highest percentage pass at SC level have been selected as one of our aims is to relate student performance to the PLC. Another factor which has influenced our choice has been the willingness for the school to participate in the study. Our choices of the 8 schools were based on the following criteria:

- The 2 high input state schools achieve the highest percentage pass at SC level. One boy school and one girl school.
- The 2 low input state schools have lower input results (CPE) and higher percentage pass at SC level among the state schools. A few schools were identified, among which one MGI/RTI school and one state school have been chosen.
- As private schools have lower input results, 2 schools with the highest percentage pass at SC have been chosen.
- Some confessional schools are considered as ‘good’ schools and have good input results. Actually confessional schools are mixed abilities, with about 50% of the students with good CPE results and 50% of the students as decided by the school management. Two high input schools have been chosen among the confessional schools. For a gender balance, 2 boys schools have been chosen, which are considered to be the best among the confessional schools.

A letter was sent to the Ministry of Education to obtain approval to carry out the survey in the secondary schools in Mauritius. Then, with the support of the approval letter, rectors of the 8 schools were contacted, whereby a brief of the study and details of the data collection were given and they were asked whether they would be willing to participate in the study. Only those who responded positively were selected as their willingness to participate was an indication of their probable collaboration.
A representative number of educators and students have been chosen. Considering the total number of educators (around 9,000), using the sample size calculator (Creative Research System, 2012); with confidence level of 95% and confidence interval of 5%, the minimum sample size is 368. Therefore, 60 educators have been taken from the 8 schools, giving a total of 480. This number includes heads of departments.

Similarly 60 students from each school have been chosen randomly from the form 5 classes. The sampling for students is thus, random and stratified.

For the qualitative data collection, 2 schools were selected among the 8 schools, based on the level of collaboration as would be revealed by the quantitative findings. The 2 schools would be among the 4 low input schools as they need a greater capacity to increase student academic performance. In each school, the rector and 3 heads of department would be selected for the interview.

3.2. Instruments

The instruments have been carefully designed based on the research questions. For the quantitative data collection we have used survey questionnaires for educators and students and we have collected information from the school records. For the qualitative data collection we have used semi-structured interviews for rectors and heads of departments. These three sources of data are useful in the triangulation process.

The survey questionnaires are the main sources of quantitative data collection. The educator’s questionnaire provides measures of school leadership, school factors and elements of the Professional Learning Community. The student questionnaire provides measures of student wellbeing in terms of student self-esteem, social wellbeing, student teacher relationship and student friend relationship.
3.2.1 Questionnaire for Educators

The questionnaire for educators contains questions in terms of positive statements based on leadership, school factors and Professional Learning Community. They have been planned after careful consultation and analysis of some existing questionnaires related to school leadership and Professional Learning Community as discussed below.

**Questionnaire Design**

The structure of the survey questionnaire required a good planning and considerable time. First of all, a plan was made based on the research questions, aims and objectives as well as the related findings in the literature review.

The aim of this survey is to investigate on instructional leadership, shared leadership, school climate, school structure and elements of the PLC which are split into 3 elements, based on the theoretical model: Shared vision and values focusing on student learning; Collaboration: collective learning and shared practices; and Continuous improvement based on Reflective inquiry. Hence the questions aim at eliciting response on school leadership, school climate, school structure and elements in the PLC in Mauritian secondary schools. So, accordingly a number of relevant questionnaires which assess school leadership, school factors and PLC were retrieved and analysed. The two main ones that were most appropriate for this research were: the PLC questionnaire of Vescio (2006) (refer to Annex 1a) and the questionnaire of Huffman and Hipp (2003) (refer to Annex 1b).

Vescio’s questionnaire consists of 45 questions, the first part addressed the following 4 themes related to the PLC: Shared and supportive leadership; Collective learning and application; Supportive conditions – structure and faculty trust in colleagues. The second part addressed 2 themes related to collective efficacy: instructional strategies and student discipline. The questions were relevant to this research but needed to be reviewed and classified according to our theoretical model, simplified and adapted to the Mauritian context.

The questionnaire of Huffman and Hipp on “Reculturing Schools as Professional Learning Communities” was also appropriate to this research. It consisted of 45 questions organized in 6 sections namely: Shared and supportive leadership; Shared values and vision; Collective learning
and application; Shared personal practices; Supportive conditions - Relationships and Supportive conditions - Structures.

For the educator’s questionnaire, after careful consideration, it was agreed to have 3 sections, one on leadership, one on school factors and one on PLC. For leadership, only questions on instructional and shared leadership would be included as they are directly related to PLC as per the literature review. School factors would include school climate and school structure which are also closely linked to the PLC. Finally, the 3 elements of the PLC are shared values and vision focusing on student learning; collaboration: collective learning and shared personal practices; and continuous improvement based on reflective inquiry.

Questions were then formulated, bearing in mind all the aspects that the research should cover based on the research questions. A draft of the educator’s questionnaire was constructed. It was ensured that the language and terms used are clear and familiar to educators in Mauritius. The Mauritian secondary school context has also been taken into consideration while framing the questions.

In the introductory section of the questionnaire, a brief description of the nature and aim of the research was given and the respondents’ help was solicited. They were informed that the information they would supply would be used solely for the purpose of this research and would be kept confidential. The first part of the questionnaire includes demography; school size, educator’s gender, the subject taught, number of years of experience, years of service in their school, and whether they are heads of departments (HODs).

The questionnaire initially consisted of 7 sections:

1. Instructional leadership
2. Shared leadership
3. Shared vision and values focusing on student learning
4. Supportive school structure
5. Supportive school climate
6. Collaboration- collective learning and shared personal practices
7. Continuous improvement based on reflective inquiry
Questions from both the questionnaires of Vescio and Huffman and Hip have been studied and have been used to prepare the survey questionnaire. The 40 questions in the educator’s questionnaire with references made from the 2 questionnaires, Vescio and Huffman and Hipp are given in Annex 1c. Some questions have been reproduced in toto, some have been adapted and others have been added so that in all there are 5 questions per section. It was made as short as possible, with a total of 35 questions. The questions were presented in the form of positive statements to ease response. A 5-point Likert scale was used for all questions (except for the respondent profile). The scale used is as follows:

1. Disagree
2. Slightly disagree
3. Neither agree nor disagree
4. Slightly agree
5. Agree

A five level Likert scale has been chosen as it is uneven and may produce slightly higher mean scores relative to the highest possible attainable score (Dawes, 2008). The neutral option (neither agree nor disagree) is sometimes seen as an easy option to take when the respondent is not sure. Nonetheless it is an answer and is preferable to a no answer; hence it was decided to be included in the Likert scale.

Throughout the design of the educators’ survey questionnaires, the issues of validity and reliability have been considered. To ensure reliability, the questions have been framed in such a way that they have same meaning to everybody, hence maintaining the consistency of the scores. Item validity has also been taken into consideration so that the questions are accurate and relevant to the field of study.

**Pilot Testing**

According to Briggs and Coleman (2007), careful and appropriate piloting of research instruments weeds out inappropriate, poorly worded or irrelevant items, highlights design problems and provides feedback on how easy or difficult the questionnaire is to complete. Hence, once the educator’s questionnaire was ready, the pilot testing was carefully carried out.

For convenience, the questionnaire was piloted in an MGI secondary school which was not included in the actual survey. Survey questionnaires were distributed to 20 educators and they were requested to fill in the questionnaire and to provide suggestions about how to improve it. A
few suggestions were obtained and accordingly some questions were reframed to improve their clarity.

**Pre-test**

In order to validate the questionnaire, that is to ensure homogeneity of variance and internal reliability, the questionnaire was administered to 20 educators in 20 schools. The responses were fed in SPSS and 2 statistical tests were carried out, namely Cronbach’s Alpha for internal reliability (George and Mallery, 2002) and Factor Analysis for homogeneity of variance. Principal Component Analysis in Factor Analysis has been used as it is a variable reduction technique (Gorsuch, 1983). The Cronbach’s Alpha for all the sections ranged between 0.74 to 0.86. This gives a good indicator for internal reliability. For Factor Analysis, all sections were extracted as one component showing homogeneity in the section, except for the section on ‘Shared vision and values focusing on student learning’ which was extracted as 2 components. This shows that the questions might be confusing and the responses might not be valid. Accordingly, the questions were reviewed based on the theoretical framework. Therefore, it was decided that the section on ‘Shared vision and values focusing on student learning’ needed to be split into two elements: ‘Shared vision and values’ and ‘Focus on student learning’, hence making the questions more clear and less confusing.

Using feedback from the pre-test, the questionnaire was redesigned in order to improve it in terms of homogeneity of variance. Some questions were reframed to improve their clarity and validity.

The final questionnaire was reorganized into 8 sections, each one with 5 questions. The sections were as follows:

1. Instructional leadership
2. Shared leadership
3. Supportive school climate
4. Supportive school structure
5. Shared vision and values
6. Focus on student learning
7. Collaboration - collective learning and shared personal practices
8. Continuous improvement based on reflective inquiry
Hence the PLC has been reorganized into 4 components in order to improve the internal validity and homogeneity of variance. The questionnaire was then ready for the actual survey in the 8 schools as mentioned earlier.

**Administering of Questionnaires**

Following the letter sent to the rectors, only few of them replied in writing and a few phoned to confirm their participation. The others were contacted by phone. In 6 out of 8 schools, rectors were willing to allow educators to participate in the data collection; hence 2 schools had to be substituted.

The 8 selected schools are different from the schools used for the pre-test; they are named as schools A to H to ensure anonymity. All the 8 schools were visited to seek the collaboration of the rectors and the educators.

In each school, a total of 60 educators were targeted. For the educators, the larger departments were chosen, included the HOD and members of the department in order to have a correct picture of the actual practices in the departments. In order to remove all bias, the questionnaires were given to individual educators personally, together with a stamped envelope with the address and they were requested to send the questionnaire by post after filling.

**Analysis techniques**

Responses from the survey questionnaires from educators have been analysed with the use of Microsoft word, Microsoft excel and SPSS 17 software. Descriptive statistics have been used to present data in tabular and diagrammatic forms and inferential statistics for comparing and analysing data, using parametric and non-parametric tests have been conducted as follows:

1. The survey data were fed in SPSS to provide a data base of raw data which consists of 265 respondents and 40 questions.
2. Clustering of the questions to give the sections: instructional leadership, shared leadership, school climate, school structure and the 4 elements of the PLC.
3. Tests of item validity and internal reliability were carried out.
4. Analysis of the 8 sections and comparing means for each school.
5. Correlation and regression analysis between the dependent and independent variables (predictors).
Problems Encountered
The survey was carried out twice, first with 20 schools (pre-test), then with 8 schools and as the schools involved in the research are spread in all four educational zones, it was quite tedious to visit all of them. An appointment was taken with each rector and in a number of cases the response was poor, so they had to be contacted several times before obtaining a positive response.

The first collection of questionnaires for educators (pre-test) took longer than planned as they were not completed as scheduled. In some cases the questionnaires were misplaced, they had to be given a second copy or a copy was sent by mail to be filled and returned. The target was 2 weeks but it took 2 months. In the second survey, it took very long to collect the questionnaires as they were sent by post. The survey was completed in 3 months.

3.2.2 Questionnaire for Students
The questionnaire for students has been designed after consultation of existing questionnaires of student wellbeing as discussed below. The purpose of this questionnaire is to assess the level of student wellbeing for the 8 schools.

Questionnaire Design
The objectives of the student’s questionnaire were to measure student wellbeing, as one indication of school effectiveness. Student wellbeing includes student self-esteem and the appreciation of their school environment which is important for their personal development. Questionnaires on student wellbeing were retrieved and studied. Two questionnaires were of some help; they were the ‘Student Self-esteem Inventory’ (1996) and student wellbeing (French version: Bien-Etre) (2014). The questionnaire on student self-esteem consists of 58 questions related to personal wellbeing and esteem and it also included few questions on school life. The one on student wellbeing consisted of different sections: self-esteem; social environment; school environment and climate; and relationships with teachers and friends. However, questions from these two questionnaires could not be used directly as they were not directly relevant to our objectives. Only few questions could be adapted and used in our student questionnaire.
The structure of the student survey questionnaire required careful planning. As the focus was on student self-esteem and their school environment, consisting of their school, their teachers and their friends, it was decided to include the following 3 sections:

1. Student self esteem
2. Student and adults in their school
3. Student and their friends

Accordingly the ‘Student Self-esteem Inventory’ questionnaire and the student wellbeing questionnaire were studied; few relevant questions were reframed to make them more specific and clear to the students. Other questions were added in order to cover different aspects on the three themes. All the questions were formulated in such a way that they are clear and simple in order to elicit valid and relevant responses from the students.

Student self-esteem includes questions on the students’ views about their personal happiness and satisfaction. The second section is about the students’ perception of their school and the support they get from the adults at school. The last section on students and their friends is on how they get along with and can rely on their friends at school. These three sections cover the different aspects of student wellbeing in their school.

There were a total of 18 questions. The questions were presented in the form of positive statements. After thorough discussion, we decided to use two types of likert scale: a 3-point and a 5-point Likert scales based on the questions (refer to Annex 1d).

As for the educators’ questionnaire, issues of validity and reliability have been considered. To ensure reliability, the questions have been framed in such a way that they mean the same to everyone, hence maintaining the consistency of the scores. Item validity has also been taken care of so that the questions are accurate and relevant to the field of study.

The questionnaire was piloted in an MGI secondary school which was not involved in the actual survey. 20 students were given the questionnaire to fill. At the end of the questionnaire they were requested to write any comment, difficulty or suggestions on how to improve the questionnaire. A few suggestions were obtained and accordingly some questions were reframed to improve their clarity.
The pre-test was also carried out in the same manner as for the educators’ questionnaire. The data were entered in SPSS and the test for homogeneity of variance and internal reliability were carried out. As shown in the table below, for sections 2 and 3, Cronbach’s Alpha values were .71 and .73 respectively, which shows an acceptable level of internal reliability. For section 1, Cronbach Alpha was very low (.16), it is considered as unacceptable. For Factor Analysis, section 2 and 3 were extracted as one component showing good homogeneity of variance, whereas for section 1, there were 3 components extracted. Both the Cronbach’s Alpha and Factor analysis show that items in the section 1 on student self-esteem were not coherent and consistent; hence the questions cannot be grouped as one theme; under the heading student self-esteem.

<table>
<thead>
<tr>
<th>Section</th>
<th>Cronbach's Alpha</th>
<th>Factor Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students’ self esteem</td>
<td>.161</td>
<td>3 components</td>
</tr>
<tr>
<td>Students and adults in their school</td>
<td>.733</td>
<td>1 component</td>
</tr>
<tr>
<td>Students and their friends</td>
<td>.710</td>
<td>1 component</td>
</tr>
</tbody>
</table>

The student’s questionnaire was reorganized and questions were carefully reframed to improve homogeneity of variance and internal reliability. The final questionnaire therefore had 4 sections with 20 questions as follows:
1. Student self esteem
2. Social wellbeing
3. Student teacher relationship
4. Students and their friends

The student’s questionnaire is given in Annex 1e. As there have been some major changes in the questionnaire, it was piloted once more in order to ensure its validity and reliability.

**Administering of Questionnaires**

The 8 selected schools are the same as for the educators’ survey and they are different from the schools used for the pre-test and are named as schools A to H. All the 8 schools were visited to seek the collaboration of the rectors and the educators.

In each school, 60 students were targeted. The questionnaires were given to some teachers working with form 4 as the target population was students aged between 14 to 15 years. The educators were requested to administer the questionnaire in class and to ensure that students
respond individually without the assistance of their friends. After 1 week, the educators were contacted by phone and the questionnaires were collected.

**Analysis techniques**
Responses from the survey questionnaires from students have been analysed with the use of Microsoft word, Microsoft excel and SPSS 17 software. Descriptive statistics have been used to present data in tabular and diagrammatic forms and inferential statistics have been used for comparing and analysing data, using parametric and non-parametric tests. A systematic data processing was carried out:

1. Feeding all data for 429 students and 25 questions in SPSS.
2. Organize the data into sections.
3. Carry out item validity and internal reliability tests.
4. Analyse and compare the sections.
5. Carry out cross analysis with Educator’s data.
6. Carry out correlation and regression analyses.

**Problems Encountered**
As for the educators survey, the student survey was carried out twice, first with 20 schools as a pre-test, followed by the actual survey with 8 schools. As the schools involved in the research are spread in all four educational zones, it was quite tedious to visit all of them. An appointment was taken from each rector and in a number of cases the response was not positive, so they had to be contacted several times.

However, the collection of the questionnaires was much easier compared to the educators’ survey, except for school D where the questionnaires were misplaced and had to be provided again.

**3.2.3. Student Academic Performance as a measure of School Effectiveness**
School effectiveness has been measured in terms of student outcomes. The overall student achievement has been taken into consideration. One outcome is student wellbeing, which has been measured using the student questionnaire. The second student outcome is a measure of the student academic performance as described here.

The choice of the 8 schools is an important step, as it involves a mix of state and private schools and; low input and high input schools in terms of student intake. The academic performance of the school is one aspect of school effectiveness and it depends on a number of factors including
school inputs and school factors. Mauritian secondary schools admit students based on their Certificate of Primary Education (CPE) results. A student with very good CPE results has a greater probability to obtain very good results for School Certificate (SC). There are significant differences among the students being admitted in form 1 in the different types of school (state, confessional and private). Some schools display a good academic performance because they get the best students in Form 1 whereas some schools are low performing because they admit students of low ability. Therefore, the school academic performance cannot be judged purely on the basis of the academic output. In order to obtain an impartial measure of student performance, both the input and the output have been considered. The input is in terms of Certificate of Primary Education (CPE) results and the output is in terms of School Certificate (SC) results. SC results have been chosen because from form 1 to form 5 there is little mobility of students from one school to another and less drop out as compared to Higher School certificate (HSC).

In order to obtain a rather precise picture of the school academic performance a qualitative analysis of the results has been carried out. The SC results for the year 2015 have been considered as it is the year during which the student survey has been carried out. In order to make a valid comparison, the CPE results of the same students have been taken, that is the CPE results for the year 2010.

Data collection for Student Academic Performance
The students’ results have been collected from the 8 schools surveyed and from the website of the Mauritius Examination Syndicate (MES). The input results that is Certificate of Primary Education (CPE) results have been obtained from the schools. The output results that is School Certificate (SC) results have been obtained from the MES as they are freely accessible on the MES website. The student academic results are sensitive data which schools are not very willing to disclose.

For CPE results, we had to depend on the schools to get these data. CPE results for the year 2010 (as these students sat for SC examinations in 2015) were collected. This was problematic as some schools either did not have the data or were unwilling to provide them. We had to wait for a long time with several reminders before we could get all the data.
As for the SC results, it was easy as they were all on the website of the Mauritius Examination Syndicate (MES). However, we had to make do with the available data which were limited as discussed later in this section.

**School Academic Input and Output**
The student academic performance has been measured using the student academic input and output as explained above. In Mauritius, secondary schools enroll students largely based in their academic performance. Some schools get students who are academically very good, others have low ability students and some schools cater for mixed abilities. Therefore, in order to assess the students’ performance in a fair and consistent manner, the academic results of students admitted in form 1 and academic results of the same students after 5 years of schooling have been considered and a measure of the academic input and output have been calculated.

The school academic input used is the Certificate of Primary Education (CPE) as students are admitted to secondary schools based on these examinations which are conducted at national level. The CPE is conducted, corrected and computed by the Mauritian Examination Syndicate (MES) for all students in Mauritius at the end of the primary cycle (except for the fee paying private schools). Secondary schools in Mauritius have markedly different students’ academic intake at form 1 level, depending on the demand. Some schools are high demand and because of the high demand and limited number of seats available, they admit students with better CPE results. Unlike most developed countries, state schools are preferred to private schools as they offer better infrastructure and facilities. Confessional schools are also considered as ‘good’ schools. Hence, State schools are high demand schools and admit students with the best results at CPE. Private schools admit students of lower ability and confessional schools are mixed abilities as they admit 50% of high ability students from the MES list and 50% of students according to their own criteria.

The academic output used in the research is School Certificate (SC) results as these examinations are taken by all students after 5 years of secondary schooling. There are few drop outs during these 5 years leading to the SC examinations. After the SC examinations a good number of students who have done very well tend to move to a ‘better’ school to complete their secondary schooling and sit for the Higher School Certificate (HSC) Examinations after 2 years of studies.
Because of this mobility of students, SC results have been used as the school academic output instead of HSC results.

For CPE, a student sits for 6 subjects (Math, English, French, Science, Environmental Studies and one oriental language) and the overall aggregate is calculated on results obtained in 4 best subjects. The highest grade is A* which corresponds to 6 units, A corresponds to 5 units, B to 4 units, C to 3 units, D to 2 units and E to 1 unit. So the maximum aggregate a student can score is \((6 \times 4) = 24\). The Mauritius Examination syndicate (MES) is responsible for providing the CPE results at national level; based on which seats in the secondary schools are allocated. The CPE aggregates of the students in the 8 schools under study have been obtained as given in *Annex b*. It is to be noted that 80% of the students have scored an aggregate of 20 to 24 and only 20% of the students have scored less than aggregate 20. From these raw data, the % aggregate for each school has been calculated as follows:

<table>
<thead>
<tr>
<th>CPE Aggregate</th>
<th>% NUMBER OF STUDENTS PER SCHOOL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
</tr>
<tr>
<td>24</td>
<td>11.4</td>
</tr>
<tr>
<td>23</td>
<td>10.6</td>
</tr>
<tr>
<td>22</td>
<td>22.7</td>
</tr>
<tr>
<td>21</td>
<td>47.2</td>
</tr>
<tr>
<td>20</td>
<td>8.1</td>
</tr>
<tr>
<td>&lt; 20</td>
<td>0</td>
</tr>
</tbody>
</table>

The CPE aggregates for the students admitted in form 1 vary from one school to another. The 2 high input state schools (schools D and H) admit all students with aggregate 24. The 2 high input confessional schools (B and C) admit 50% of students with best aggregates 24 and 23 from the Mauritius Examination Syndicate (MES) list and 50% of the students based on their own criteria and these students are of different abilities. The 2 low input state schools (schools A and F) have majority of their students with aggregate between 20 and 22, and none of the students are below 20. The 2 low input private schools (schools E and G) admit students of the lowest abilities, majority of them have aggregates less than 21.
These CPE results give an idea of the type of student input in the 8 schools. State school get the best students in terms of CPE results, confessional schools get mixed ability students and private schools get low ability students.

Considering the CPE aggregates and their distribution in the 8 schools, 6 categories have been created. These categories have been made to the best of our ability since we do not have individual students’ results. The total number of students in the 8 schools is 791, which when divided by 6 gives 131. As the number of students scoring less than 20 is 158, it is taken collectively as the last category and each aggregate from 20 to 24 is considered as one category. Each category has been given a weightage or value so that the score can be calculated for each of the 8 schools.

<table>
<thead>
<tr>
<th>Category</th>
<th>CPE Aggregate</th>
<th>% Number of students</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Excellent</td>
<td>24</td>
<td>27.3</td>
<td>6</td>
</tr>
<tr>
<td>2 very good</td>
<td>23</td>
<td>13.4</td>
<td>5</td>
</tr>
<tr>
<td>3 good</td>
<td>22</td>
<td>12</td>
<td>4</td>
</tr>
<tr>
<td>4 satisfactory</td>
<td>21</td>
<td>16.3</td>
<td>3</td>
</tr>
<tr>
<td>5 average</td>
<td>20</td>
<td>11</td>
<td>2</td>
</tr>
<tr>
<td>6 below average</td>
<td>&lt;20</td>
<td>20</td>
<td>1</td>
</tr>
</tbody>
</table>

For each school, a score has been calculated which gives a measure of the student input. Example of the calculation of the score for one school (school A) is given below:

<table>
<thead>
<tr>
<th>CPE Aggregate</th>
<th>% number of students</th>
<th>Value</th>
<th>% xValue</th>
</tr>
</thead>
<tbody>
<tr>
<td>24</td>
<td>11.4</td>
<td>6</td>
<td>68.4</td>
</tr>
<tr>
<td>23</td>
<td>10.6</td>
<td>5</td>
<td>53</td>
</tr>
<tr>
<td>22</td>
<td>22.7</td>
<td>4</td>
<td>90.8</td>
</tr>
<tr>
<td>21</td>
<td>47.2</td>
<td>3</td>
<td>141.6</td>
</tr>
<tr>
<td>20</td>
<td>8.1</td>
<td>2</td>
<td>16.2</td>
</tr>
<tr>
<td>&lt; 20</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Score</td>
<td></td>
<td></td>
<td>370</td>
</tr>
</tbody>
</table>

In this way, the input score is calculated for the 8 schools and the values are given in table 10.
Table 10. Input Scores for the 8 Schools

<table>
<thead>
<tr>
<th>School</th>
<th>School Type</th>
<th>Input Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Low input state</td>
<td>370</td>
</tr>
<tr>
<td>B</td>
<td>High input private</td>
<td>374.9</td>
</tr>
<tr>
<td>C</td>
<td>High input private</td>
<td>402</td>
</tr>
<tr>
<td>D</td>
<td>High input state</td>
<td>600</td>
</tr>
<tr>
<td>E</td>
<td>Low input private</td>
<td>135</td>
</tr>
<tr>
<td>F</td>
<td>Low input state</td>
<td>331.2</td>
</tr>
<tr>
<td>G</td>
<td>Low input private</td>
<td>228.2</td>
</tr>
<tr>
<td>H</td>
<td>High input state</td>
<td>600</td>
</tr>
</tbody>
</table>

These input scores tally with the types of schools mentioned earlier, that is high input and low input and state and private (private includes confessional schools). In the table below, the schools have been classified accordingly. They inform us about the ability of the students admitted in form 1. High input state schools get the best students (maximum score of 600). There is not much difference between the low input state schools and the confessional schools as the latter cater for mixed abilities. Private schools get students of lowest ability; this is reflected in the input scores (135 and 228.2).

One limitation to this calculation is the inability to differentiate between students of high input schools. Students who score 6 A*, 5A* and 4A*, they all get an aggregate of 24. Therefore, we cannot compare the schools which admit students with aggregate 24, though it is well known that some elite schools admit only students with 6A*, for instance school D, as compared to school H. These data are rather sensitive and could not be obtained, so we had to use the CPE results as given on the MES list. In the table below, the schools have been reorganized in terms of school type to show the similarities between the schools.

Table 11. Input Scores classified per school types

<table>
<thead>
<tr>
<th>Type of school</th>
<th>School</th>
<th>Input score</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Input State schools</td>
<td>D</td>
<td>600</td>
</tr>
<tr>
<td></td>
<td>H</td>
<td>600</td>
</tr>
<tr>
<td>High Input Confessional schools</td>
<td>B</td>
<td>374.9</td>
</tr>
<tr>
<td></td>
<td>C</td>
<td>402</td>
</tr>
<tr>
<td>Low Input State schools</td>
<td>A</td>
<td>370</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>331.2</td>
</tr>
<tr>
<td>Low Input Private schools</td>
<td>E</td>
<td>135</td>
</tr>
<tr>
<td></td>
<td>G</td>
<td>228.2</td>
</tr>
</tbody>
</table>
The chosen output measure is School Certificate (SC) results. It is an international examination and is conducted by the Mauritius Examination Syndicate (MES). SC exam papers are set and corrected by Cambridge International Examinations (CIE). It is a national examination and there is uniformity in the way academic performance of students is assessed.

A student opts for 8 subjects for SC level. Results are given in terms of grades which are between 1 and 9. Grade 1 is the best grade and grade 9 is a failure. Grade 1 and 2 are distinctions; grade 3, 4, 5 and 6 are credits; grade 7 and 8 are passes and 9 is ungraded. The overall SC results are given in the form of an aggregate which is calculated based on the 6 best subjects (which is different from the CPE aggregate). The best performance is an aggregate of (1 x 6) 6. SC results of all schools are rendered public as they are posted on the MES website. However, we can only have the aggregates from 6 to 20 for each school. We do not have individual results for aggregates above 20. The available results given on the website of the Mauritius Examination Syndicate (MES) are given in Annex b.

The SC aggregate distribution has been studied and based on the number of students for each aggregate, 6 categories have been created, same as for CPE so that the comparisons are valid and fair. Since we could not have detailed results for aggregates above 20, we had no choice than to round it up to 1 category although the number of students in this category is very high (739 out of 1161, making a % of 63.65). For 6 to 20, each category has 3 aggregates which are fairly distributed as shown in table 10. Each category is given a weightage or value as for CPE aggregates.

<table>
<thead>
<tr>
<th>Category</th>
<th>SC Aggregate</th>
<th>No. of Students</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Excellent</td>
<td>6-8</td>
<td>94</td>
<td>6</td>
</tr>
<tr>
<td>2 very good</td>
<td>9-11</td>
<td>82</td>
<td>5</td>
</tr>
<tr>
<td>3 good</td>
<td>12-14</td>
<td>83</td>
<td>4</td>
</tr>
<tr>
<td>4 satisfactory</td>
<td>15-17</td>
<td>95</td>
<td>3</td>
</tr>
<tr>
<td>5 average</td>
<td>18-20</td>
<td>68</td>
<td>2</td>
</tr>
<tr>
<td>6 below average</td>
<td>&gt;20</td>
<td>739</td>
<td>1</td>
</tr>
</tbody>
</table>

The SC % pass for each of the 8 schools is given below.
Table 13. Percentage Passes for SC

<table>
<thead>
<tr>
<th>School</th>
<th>% pass for SC</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>99.35</td>
</tr>
<tr>
<td>B</td>
<td>97.44</td>
</tr>
<tr>
<td>C</td>
<td>94.8</td>
</tr>
<tr>
<td>D</td>
<td>99.02</td>
</tr>
<tr>
<td>E</td>
<td>79.64</td>
</tr>
<tr>
<td>F</td>
<td>79.14</td>
</tr>
<tr>
<td>G</td>
<td>97.69</td>
</tr>
<tr>
<td>H</td>
<td>100</td>
</tr>
</tbody>
</table>

The SC results for the year 2015 for the 8 schools have been categorized as follows:

Table 14. SC Aggregates for the 8 schools

<table>
<thead>
<tr>
<th>Aggregate</th>
<th>% Number of students for each school</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>6 – 8</td>
<td>0</td>
</tr>
<tr>
<td>9 - 11</td>
<td>5.8</td>
</tr>
<tr>
<td>12 – 14</td>
<td>12.9</td>
</tr>
<tr>
<td>15 - 17</td>
<td>7.7</td>
</tr>
<tr>
<td>18 – 20</td>
<td>9.7</td>
</tr>
<tr>
<td>&gt; 20(Passed)</td>
<td>63.9</td>
</tr>
<tr>
<td>&gt; 20(Passed)</td>
<td>63.3</td>
</tr>
</tbody>
</table>

The last row in table 14 represents students who have scored above aggregate 20 and who have passed SC. That is only students who have passed SC have been included in the calculation.

The output score is then calculated in the same manner as for the input score with the 6 categories and the scores are given in table 15 below:

Table 15. Input and Output Scores

<table>
<thead>
<tr>
<th>School</th>
<th>Total Score</th>
<th>Output Score</th>
<th>Output Score for SC Pass</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>187</td>
<td>186.4</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>245.9</td>
<td>243.3</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>274.3</td>
<td>269.1</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>480.7</td>
<td>479.8</td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>117.7</td>
<td>97.3</td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>127.2</td>
<td>106.3</td>
<td></td>
</tr>
<tr>
<td>G</td>
<td>145.5</td>
<td>143.2</td>
<td></td>
</tr>
<tr>
<td>H</td>
<td>349.2</td>
<td>349.2</td>
<td></td>
</tr>
</tbody>
</table>
When we compare the input and the output scores for the school types, we can see that they both follow a similar trend for all schools except for school F. High input schools also have high output score and low input schools have low output scores.

**Table 16. Input and Output Scores classified per school types**

<table>
<thead>
<tr>
<th>Types of school</th>
<th>School</th>
<th>Input Score</th>
<th>Output Score</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>High Input State schools</strong></td>
<td>D</td>
<td>600</td>
<td>480.7</td>
</tr>
<tr>
<td></td>
<td>H</td>
<td>600</td>
<td>349.2</td>
</tr>
<tr>
<td><strong>High Input Private (Confessional) schools</strong></td>
<td>B</td>
<td>374.9</td>
<td>245.9</td>
</tr>
<tr>
<td></td>
<td>C</td>
<td>402</td>
<td>274.3</td>
</tr>
<tr>
<td><strong>Low Input State schools</strong></td>
<td>A</td>
<td>370</td>
<td>187</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>331.2</td>
<td>127.2</td>
</tr>
<tr>
<td><strong>Low Input Private schools</strong></td>
<td>E</td>
<td>135</td>
<td>117.7</td>
</tr>
<tr>
<td></td>
<td>G</td>
<td>228.2</td>
<td>145.5</td>
</tr>
</tbody>
</table>

_School Performance Coefficient_

Further investigation is to see whether there is a significant difference between the input and output scores for the 8 schools. The differential value between the input score and the output score has been calculated as follows:

**Table 17. Calculation of School Performance Coefficient**

<table>
<thead>
<tr>
<th>School</th>
<th>Input Score (IS)</th>
<th>Output Score (OS) SC Pass</th>
<th>OS - IS</th>
<th>OS – IS /100</th>
<th>3+ (OS –IS /100) (School Performance Coefficient)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>370</td>
<td>186.4</td>
<td>-183.6</td>
<td>-1.84</td>
<td>1.16</td>
</tr>
<tr>
<td>B</td>
<td>374.9</td>
<td>243.3</td>
<td>-131.6</td>
<td>-1.32</td>
<td>1.68</td>
</tr>
<tr>
<td>C</td>
<td>402</td>
<td>269.1</td>
<td>-132.9</td>
<td>-1.33</td>
<td>1.67</td>
</tr>
<tr>
<td>D</td>
<td>600</td>
<td>479.8</td>
<td>-120.2</td>
<td>-1.20</td>
<td>1.8</td>
</tr>
<tr>
<td>E</td>
<td>135</td>
<td>97.3</td>
<td>-37.7</td>
<td>-0.38</td>
<td>2.62</td>
</tr>
<tr>
<td>F</td>
<td>331.2</td>
<td>106.3</td>
<td>-224.9</td>
<td>-2.25</td>
<td>0.75</td>
</tr>
<tr>
<td>G</td>
<td>228.2</td>
<td>143.2</td>
<td>-85</td>
<td>-0.85</td>
<td>2.25</td>
</tr>
<tr>
<td>H</td>
<td>600</td>
<td>349.2</td>
<td>-250.8</td>
<td>-2.51</td>
<td>0.49</td>
</tr>
</tbody>
</table>

The difference between output and input has been divided by 100 to obtain a smaller value; and 3 is added to this value in order to give a positive value which is easier to interpret. This differential value is an indicator of school academic performance and has been termed as “School Performance Coefficient” (SPC).

When we analyse the school performance coefficient for the 8 schools, we can see marked differences between high input and low input schools. A comparative table for school types, consisting of input score, output score and school performance coefficient is given below:
Table 18. School Performance Coefficient for school types

<table>
<thead>
<tr>
<th>Type of school</th>
<th>School</th>
<th>Input Score</th>
<th>Output Score</th>
<th>School Performance Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Input State schools</td>
<td>D</td>
<td>600</td>
<td>479.8</td>
<td>1.8</td>
</tr>
<tr>
<td></td>
<td>H</td>
<td>600</td>
<td>349.2</td>
<td>0.49</td>
</tr>
<tr>
<td>High Input Private (Confessional) schools</td>
<td>B</td>
<td>374.9</td>
<td>243.3</td>
<td>1.68</td>
</tr>
<tr>
<td></td>
<td>C</td>
<td>402</td>
<td>261.1</td>
<td>1.67</td>
</tr>
<tr>
<td>Low Input State schools</td>
<td>A</td>
<td>370</td>
<td>186.4</td>
<td>1.16</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>331.2</td>
<td>106.3</td>
<td>0.75</td>
</tr>
<tr>
<td>Low Input Private schools</td>
<td>E</td>
<td>135</td>
<td>97.3</td>
<td>2.62</td>
</tr>
<tr>
<td></td>
<td>G</td>
<td>228.2</td>
<td>143.2</td>
<td>2.25</td>
</tr>
</tbody>
</table>

These school performance coefficients will be used as a measure of school academic performance and will be discussed in the next chapter.

3.2.4. Interviews with Rectors and Heads of Departments

The qualitative part of the methodology comprises of interviews with rectors and heads of departments from 2 schools. The interviews aim at providing data which have not been captured by the quantitative survey and aim at providing an in-depth analysis of some practical aspects of the school conditions. The interviews were planned through a questionnaire, only to guide the participants and it was not strictly adhered to.

**Interview Design**

Semi-structured interviews were carried out with rectors and heads of departments of 2 selected schools. The sampling was a purposeful one as the participants were selected based on specific criteria. The rector and 3 HODs were selected for the interviews. Rectors and HODs were chosen as they form part of the School Management Team (SMT). The HODs of larger departments were selected (English, Math and Physics). A total of 8 interviews were carried out.

The face to face semi-structured interviews followed an interview protocol addressing the four elements of the PLC, school structure, school culture and the support of the school leadership. The interviews were conducted for about one to one and a half hours and were digitally recorded and transcribed verbatim.

The interviews would reveal the subtle aspects of the school system in relation to leadership, school structure, school culture and PLC which would not be revealed by the quantitative survey. The quantitative results would help to shape the qualitative research questions and the data
collection. Open ended questions were framed in order to collect views on how school climate, school practices and collaboration in the departments were perceived by the rectors and heads of departments.

The questions included: How do rectors and heads of departments (HODs) describe their school environment/climate? What are the initiatives taken by the school leader and the HODs in order to promote collaboration? What are the opportunities provided for collective learning? How does the school function as a learning community and what are the relevant supportive actions of the leader? Hence the interviews with rectors and heads of departments would explore the existence of PLCs in the schools and how rectors are providing or not providing their support for the PLC!

After the first hand analysis of the educator survey data, we were in a better position to formulate questions that would complement the survey data and throw light on issues that were not addressed or revealed by the quantitative survey. Due consideration was given to the research questions, especially the third research question which is partly based on the qualitative data.

For rectors, to start, some general questions were asked in order to put them at ease; namely their experience as rector and a few words about their school in general. Then they were informed about the good level of collaborative work going on in their school and based on that, questions were asked about their views and examples of such collaborative work. Another important aspect was whether the collaboration is initiated and supported by the rector and to provide relevant examples. The staff’s attitude towards these collaborative efforts was evoked as well. They were then asked to give specific examples of how the educators work collaboratively in order to improve student learning. Finally, they were asked about the constraints that prevented the collaborative work and what they would like to see happening in their school to this effect.

For HODs, the focus was on the department as a unit of activity. They were asked some general questions concerning themselves as HODs and their departments. Then referring to the good level of collaborative work based on the survey, they were asked to give specific examples with practical details of such collaboration. Based on the PLC, their opinion was sought about the shared vision and values, then, they were asked to illustrate how they focus on student learning, how they share personal practices which lead to collective learning. HODs were encouraged to talk about how they are engaged in reflective practices which lead to continuous improvement.
and to provide such examples. Then, they were asked whether there were constraints which prevent them from working collaboratively and to illustrate with examples. Their roles in initiating, facilitating and supporting collaborative efforts were then addressed and they were asked to give relevant examples.

During the interviews, the interviewees were allowed to express themselves freely and when some new elements were evoked, they were encouraged and probed to give further details. (Refer to Annex 3a and 3b).

A pre-test was carried out with 3 HODs in one school in order to see how the interviews could be improved in order to capture maximum information that would complement the quantitative data.

**Analysis Techniques**

The interview tape was used to prepare the transcripts verbatim by an independent person in order to avoid any bias. A first reading of the transcript was done in order to plan for the coding process using the software QDA Miner. Themes and categories were identified and the transcripts were coded based on the emergent themes and categories. It was important to ensure that the codes were not repetitive and overlapping; and that their meanings were clear so that the coding is as precise as possible.

After a careful and thorough analysis of one transcript (HOD English of school E), a first plan of the categories was made which was then readjusted in order to give a more precise coding system. The codes used were as follows:

1. **Managing the Department**
   - Motivation
   - Resistance to change
   - Formal collaboration
   - Informal Collaboration

2. **Leadership**
   - Instructional
   - Shared
   - Transformational
   - Support

3. **Professional Learning Communities**
   - Sharing of good practices
   - Student focus
• Continuous improvement
• Reflective practices

4. School Culture
• Culture
• School vision
• Values

5. School Structure
• Facilities
• Constraints
• Improvement

6. Students
• Student Monitoring

These categories were aligned as far as possible with the sections in the educator’s survey questionnaire. The responses were then sorted into categories based on the above codes. In some cases where the transcripts were vague and not well understood, and the coding was difficult, the audio tapes were reviewed in order to clarify the doubts and appropriate corrections were made in the transcripts.
Summary of Data Collection
Quantitative and qualitative data collection has been organized over 3 years, 2014 to 2016. The quantitative data collection was followed by the qualitative data collection as shown in the figure below. The time plan for the work packages is given in table 19.

Figure 7. Flow Chart showing Methods of Data Collection

Quantitative Methods
- Pre-test for educator’s and student's Questionnaires in 20 schools
- Educator's and student's survey in 8 schools
- Collection of data for School Academic Performance (CPE and SC results)

Followed by Quantitative Methods
- Trial Interviews with 3 heads of departments
- Interviews with Rector and Heads of Departments for the 2 selected schools
<table>
<thead>
<tr>
<th>Period</th>
<th>Work Packages</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>January 2014</strong></td>
<td>Pilot Testing for Educator’s and Student’s questionnaires</td>
</tr>
<tr>
<td><strong>March to April 2014</strong></td>
<td>Pre-test of Educator’s and Student’s Questionnaires in 20 schools</td>
</tr>
<tr>
<td><strong>May to September 2014</strong></td>
<td>Create database in SPSS and carry out tests of Reliability and Homogeneity of Variance for Educator’s survey and Student’s survey</td>
</tr>
<tr>
<td><strong>November to December 2014</strong></td>
<td>Preliminary statistical tests in SPSS</td>
</tr>
<tr>
<td><strong>January 2015</strong></td>
<td>Distribution of Educator’s and Student’s questionnaires in 8 schools</td>
</tr>
<tr>
<td><strong>February to April 2015</strong></td>
<td>Collection of Educator’s and Student’s questionnaires</td>
</tr>
<tr>
<td><strong>May to September 2015</strong></td>
<td>Create database in SPSS and carry out tests of Reliability and Homogeneity of Variance for Educator’s survey and Student’s survey</td>
</tr>
<tr>
<td><strong>September 2015</strong></td>
<td>Trial Interviews with 3 Heads of Departments of school F and analysis</td>
</tr>
<tr>
<td><strong>October to November 2015</strong></td>
<td>Preliminary Statistical analysis</td>
</tr>
<tr>
<td><strong>January to February 2016</strong></td>
<td>Statistical Tests and analysis of Educator’s and Student’s questionnaires</td>
</tr>
<tr>
<td><strong>March 2016</strong></td>
<td>Interviews with 3 HODs of School F</td>
</tr>
<tr>
<td><strong>April 2016</strong></td>
<td>Interviews with 3 HODs of School E</td>
</tr>
<tr>
<td><strong>May 2016</strong></td>
<td>Interviews with rectors of School E and F</td>
</tr>
<tr>
<td><strong>June 2016</strong></td>
<td>Collection of data for school performance coefficient (CPE results from schools and SC results from MES website).</td>
</tr>
<tr>
<td><strong>April to July 2016</strong></td>
<td>Preparation of transcripts for the 8 interviews</td>
</tr>
<tr>
<td><strong>August to October 2016</strong></td>
<td>Coding of qualitative data in QDA miner</td>
</tr>
<tr>
<td><strong>November to December 2016</strong></td>
<td>Analysis of qualitative data</td>
</tr>
</tbody>
</table>
CHAPTER 4. Findings and Analysis

This Chapter provides an analysis of all the data collected, both quantitative and qualitative. The quantitative part comprises an analysis of the educator’s questionnaire and the school performance coefficient followed by the analysis of the student’s questionnaire. Cross data analyses have been performed using relevant sections of the 2 questionnaires and the school performance coefficients. The qualitative part analyses and illustrates different aspects of the school as described by the rectors and HODs.

4.1. Quantitative Analysis

The quantitative analysis consists of 2 sections. The first section consists of the analysis of the educator’s questionnaire and relates the school performance coefficient to the Professional Learning Community. The second section treats the student wellbeing questionnaire and relates student wellbeing to the Professional Learning Community.

4.1.1. Educator’s Questionnaire

The educator’s questionnaire has been analysed according to the sections as follows:

- Educator’s profile
- Leadership – instructional and shared leadership
- Supportive school climate
- Supportive school structure
- Professional Learning Communities:
  - Shared vision and values
  - Focus on student learning
  - Collaboration: collective learning and shared personal practices
  - Continuous improvement based on reflective inquiry

A general analysis has been carried out followed by a detailed analysis of the 8 schools using statistical tests. Correlation and regression analyses have been carried out between the sections to identify relationships between leadership, school factors and the PLC.

The school performance coefficients have then been analysed to find out how the PLC influences student academic performance.
Educators’ Profile
Educator’s profile provides information about gender, position as head of department or not, subject taught and experience.

Gender
There was a total of 265 educators who responded to the survey questionnaire out of the 480 questionnaires distributed, that is a response rate of 55.2%. 164 (61.9 %) of them were females and 101(38.1%) were males, hence in general, there are more female respondents compared to male respondents. It is to be noted that in general there are more female educators than male educators.

<table>
<thead>
<tr>
<th>Table 20. Educator's Gender</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>Total Number of questionnaires distributed</td>
</tr>
<tr>
<td>Number of questionnaires collected</td>
</tr>
<tr>
<td>Females</td>
</tr>
<tr>
<td>Males</td>
</tr>
</tbody>
</table>

Heads of Departments and Subject Areas
Out of the 265 respondents in the 8 schools, 56 (21%) are heads of departments. The number of HODs per school is more or less the same, ranging from 6 to 9. 68 % of the HODs have more than 15 years of experience as educators. None of them have less than 4 years of experience which is logical as HODs are appointed with a minimum of 7 years of experience.

The subjects have been clustered: Mathematics; Sciences (Physics, Chemistry, Biology and Computer); Economics (Economics, Accounts and Business studies); Technical (Design and Communication, Food Studies and Design and Textiles); Languages (English, French and Oriental languages); and others which include all the other subjects. Figure 8 shows the representation of the 5 subject areas. Considering all respondents, HODs and educators, the majority are from the language departments, followed by Sciences, then Mathematics.
For the HODs, the majority are from the science departments, followed by language departments. For educators, majority are from language departments followed by science departments. The number of HODs and educators from each subject area are shown in table 21 below:

**Table 21. Educators and their subject areas**

<table>
<thead>
<tr>
<th>Subject area</th>
<th>HODs</th>
<th></th>
<th></th>
<th>Educators</th>
<th></th>
<th></th>
<th>Total</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>%</td>
<td></td>
<td>Number</td>
<td>%</td>
<td>Number</td>
<td>%</td>
<td></td>
</tr>
<tr>
<td>Mathematics</td>
<td>4</td>
<td>7.1</td>
<td></td>
<td>34</td>
<td>16.3</td>
<td>38</td>
<td>14.3</td>
<td></td>
</tr>
<tr>
<td>Sciences</td>
<td>16</td>
<td>28.6</td>
<td></td>
<td>43</td>
<td>20.6</td>
<td>59</td>
<td>22.3</td>
<td></td>
</tr>
<tr>
<td>Economics</td>
<td>9</td>
<td>16.1</td>
<td></td>
<td>25</td>
<td>12</td>
<td>34</td>
<td>12.8</td>
<td></td>
</tr>
<tr>
<td>Technical</td>
<td>5</td>
<td>8.9</td>
<td></td>
<td>15</td>
<td>7.2</td>
<td>20</td>
<td>7.6</td>
<td></td>
</tr>
<tr>
<td>Languages</td>
<td>14</td>
<td>25</td>
<td></td>
<td>68</td>
<td>32.5</td>
<td>82</td>
<td>30.9</td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td>6</td>
<td>10.7</td>
<td></td>
<td>19</td>
<td>9.1</td>
<td>25</td>
<td>9.5</td>
<td></td>
</tr>
<tr>
<td>No response</td>
<td>2</td>
<td>3.6</td>
<td></td>
<td>5</td>
<td>2.4</td>
<td>7</td>
<td>2.6</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>56</td>
<td>100</td>
<td></td>
<td>209</td>
<td>100</td>
<td>265</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>
**Number of years of Experience and Number of years of service in present school**

It is noted that 41.5% of the respondents have more than 15 years of experience. Only 17% of them have less than 4 years of experience; hence, 83% of the respondents have more than 5 years of service.

<table>
<thead>
<tr>
<th>Number of years</th>
<th>1 to 4</th>
<th>5 to 9</th>
<th>10 to 14</th>
<th>&gt; 15</th>
</tr>
</thead>
<tbody>
<tr>
<td>% number of educators</td>
<td>17%</td>
<td>24.5%</td>
<td>17%</td>
<td>41.5%</td>
</tr>
</tbody>
</table>

Table 23 below shows that the majority of the educators have been working in their school for more than 10 years, making a percentage of 30.9. About two third of the respondents have been working for 0 to 10 years in their present school.

<table>
<thead>
<tr>
<th>Number of years</th>
<th>&lt; 2</th>
<th>2 to 4</th>
<th>5 to 7</th>
<th>8 to 10</th>
<th>&gt; 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Number of educators</td>
<td>18.5 %</td>
<td>19.6 %</td>
<td>18.5 %</td>
<td>12.5 %</td>
<td>30.9 %</td>
</tr>
</tbody>
</table>

**Measure of Internal Reliability and Homogeneity of Variance**

The Cronbach’s alpha (Cronbach, 1951) test was carried out to measure the internal reliability for the 8 sections of the educator’s questionnaires as given in table 24 below. The Alpha (α) values lie between .76 and .90, which gives a good measure of internal reliability. Moreover, when the 4 elements of the PLC are taken together, α is raised to .93.

Factor Analysis (Cattell, 1952) was conducted using the Principal Component Analysis (PCA). It was carried out on the 8 sections separately in order to determine the internal homogeneity of variance. All 8 sections of the educator’s questionnaire were extracted as one component, which shows coherence in the sections. Following results of the Factor Analysis of the pre-test as described in section 3.2.1.1.3., the first element of the Professional Learning Community, that is ‘shared vision and values focusing on student learning’ was split into 2 components, namely ‘shared vision and values’ and ‘focus on student learning’. Factor Analysis for these 2 elements was also extracted as separate components.
Table 24. Cronbach's Alpha and Factor Analysis for Educator's Questionnaire

<table>
<thead>
<tr>
<th>SN</th>
<th>Section</th>
<th>Cronbach’s Alpha</th>
<th>Factor Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Number of</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Components</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Extracted</td>
</tr>
<tr>
<td>1</td>
<td>Instructional leadership</td>
<td>.761 (acceptable)</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Shared leadership</td>
<td>.856 (good)</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>School climate</td>
<td>.825 (good)</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>School structure</td>
<td>.779 (acceptable)</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>Shared vision and values</td>
<td>.873 (good)</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>Focus on student learning</td>
<td>.799 (acceptable)</td>
<td>1</td>
</tr>
<tr>
<td>7</td>
<td>Collaborative learning and shared practices</td>
<td>.857 (good)</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>Continuous improvement based on reflective practices</td>
<td>.852 (good)</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>PLC</td>
<td>.930 (excellent)</td>
<td></td>
</tr>
</tbody>
</table>

For all the 8 sections of the educator's questionnaire, the extraction by Principal Component analysis gives one component. Hence, the homogeneity of variance in the 8 sections is considered as satisfactory.

The Cronbach’s $\alpha$ and Factor Analysis confirm the validity and reliability of the educator’s questionnaire.

**General Findings**

In this section, data have been analysed based on the 8 sections in the educator’s questionnaire. The table below gives the mean scores, standard deviation, minimum and maximum scores for the 8 sections and for the Professional Learning Community as a whole. Correlation analysis was the carried out between the sections to identify the links. Then regression analysis was run to determine the causative effects between the dependent variables and the predictors.

Table 25. General Findings for Educator's Questionnaire

<table>
<thead>
<tr>
<th>Sections</th>
<th>Mean Score*</th>
<th>Standard Deviation</th>
<th>Minimum Score*</th>
<th>Maximum Score*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Instructional leadership</td>
<td>4.29</td>
<td>.803</td>
<td>3.82</td>
<td>4.60</td>
</tr>
<tr>
<td>2 Shared Leadership</td>
<td>3.79</td>
<td>1.01</td>
<td>3.60</td>
<td>4.05</td>
</tr>
<tr>
<td>3 School climate</td>
<td>3.96</td>
<td>.988</td>
<td>3.69</td>
<td>4.34</td>
</tr>
<tr>
<td>4 School structure</td>
<td>3.38</td>
<td>1.07</td>
<td>3.26</td>
<td>3.81</td>
</tr>
<tr>
<td>5 Shared vision and values</td>
<td>4.13</td>
<td>.95</td>
<td>3.91</td>
<td>4.32</td>
</tr>
<tr>
<td>6 Focus on student learning</td>
<td>4.62</td>
<td>.60</td>
<td>4.52</td>
<td>4.71</td>
</tr>
<tr>
<td>7 Collaboration- Collective learning and shared practices</td>
<td>4.11</td>
<td>.92</td>
<td>3.98</td>
<td>4.25</td>
</tr>
<tr>
<td>8 Continuous improvement based on reflective inquiry</td>
<td>4.29</td>
<td>.85</td>
<td>4.00</td>
<td>4.65</td>
</tr>
<tr>
<td>9 Professional Learning Community</td>
<td>4.29</td>
<td>.69</td>
<td>3.91</td>
<td>4.71</td>
</tr>
</tbody>
</table>

Mean score* - Range 1- 5, higher values express stronger agreement
Leadership

Two patterns of leadership have been measured, namely instructional leadership and shared leadership as they are the forms of leadership which are important for the functioning of PLC. The scores indicating instructional leadership and shared leadership are both relatively high.

Instructional Leadership

The first five questions were related to instructional leadership. The mean is highest for the third question that is the school management team (SMT) discusses academic performance results with the department to identify curricular strengths and weaknesses. The standard deviation of .916 shows that there are some significant variations in the response, but it is least among the 5 questions. A great majority of respondents (78%) agree and 14% slightly agree to the statement. Question one comes next on the list. That is majority of the educators agree (77%) that the SMT monitors the classroom curriculum to see that it covers the school’s curricular objectives. However, the least mean response is the SMT creates professional growth opportunities for educators. Only 42% of the educators agree and 30% slightly agree to the statement. The overall mean value for instructional leadership is 4.29 and standard variation is 0.8.

Therefore, instructional leadership is very much present in the schools. This is an important feature of leadership that promotes teaching and learning and supports the PLC. Based on the data, instructional leadership is more geared towards improving instructions and less towards staff development.

Table 26. Instructional Leadership

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean*</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. SMT monitors the classroom curriculum to see that it covers the school’s curricular objectives.</td>
<td>265</td>
<td>4.58</td>
<td>.978</td>
</tr>
<tr>
<td>2. SMT actively supports the use in the classroom of skills acquired during in-service training.</td>
<td>265</td>
<td>4.35</td>
<td>1.073</td>
</tr>
<tr>
<td>3. SMT discusses academic performance results with the department to identify curricular strengths and weaknesses.</td>
<td>265</td>
<td>4.60</td>
<td>.916</td>
</tr>
<tr>
<td>4. SMT reinforces superior performance by educators formally and informally.</td>
<td>264</td>
<td>4.11</td>
<td>1.212</td>
</tr>
<tr>
<td>5. SMT creates professional growth opportunities for educators.</td>
<td>265</td>
<td>3.82</td>
<td>1.372</td>
</tr>
<tr>
<td>Instructional leadership</td>
<td>264</td>
<td>4.29</td>
<td>.803</td>
</tr>
</tbody>
</table>

Mean* - Range 1- 5, higher values express stronger agreement
Shared Leadership

The mean value (4.05) for the statement ‘The SMT incorporates advice from staff to make decisions’ is the highest among the 5 questions on shared leadership. 47% of the respondents agree and 34% slightly agree to this statement. The other 4 statements have a very close mean value. The mean value for shared leadership of 3.79 is below 4 on a scale of 1 to 5, where 4 is slightly agree and 5 is agree. This shows that according to the respondents shared leadership is not generally felt. Moreover, the SD is greater than one. This indicates greater variation in the response.

Table 27. Shared Leadership

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean*</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>6. SMT incorporates advice from staff to make decisions.</td>
<td>265</td>
<td>4.05</td>
<td>1.227</td>
</tr>
<tr>
<td>7. Opportunities are provided to staff to initiate change</td>
<td>265</td>
<td>3.87</td>
<td>1.231</td>
</tr>
<tr>
<td>8. The SMT works together democratically sharing power and authority.</td>
<td>265</td>
<td>3.60</td>
<td>1.325</td>
</tr>
<tr>
<td>9. SMT shares responsibility and rewards for innovative actions</td>
<td>265</td>
<td>3.72</td>
<td>1.279</td>
</tr>
<tr>
<td>10. Leadership is promoted and nurtured among staff</td>
<td>265</td>
<td>3.73</td>
<td>1.318</td>
</tr>
<tr>
<td>Shared Leadership</td>
<td>265</td>
<td>3.79</td>
<td>1.01</td>
</tr>
</tbody>
</table>

Mean* - Range 1-5, higher values express stronger agreement

According to the survey data, instructional leadership is more prominent than shared leadership. Educators are encouraged to improve teaching and learning. However, there is less staff development and little opportunities are given to educators to initiate change and to assume leadership positions. Hence there is more room for staff empowerment and shared leadership.

Supportive School Climate

Educators agree that there is an enabling school climate, with a mean score of above 4 (4.12), they also approve of caring relationships at school. However, when it comes to the element of trust, educators do not generally agree, the mean score is below 4 (3.69) with standard deviation of 1.439. They also generally believe that conflicts do occur (mean score of 3.73) but the views are much varied (standard variation of 1.425).

Hence, we can say that in general, there is the feeling of a supportive school climate, but when it comes to specific issues like educators trusting each other, or can depend on each other or the occurrence of conflicts, educators are not very satisfied with the actual situation. The total mean score for school climate is below but very close to 4 (3.9), therefore we can conclude that the school climate is one school factor that can be improved.
Table 28. Supportive School Climate

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean*</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>11. Educators trust each other.</td>
<td>265</td>
<td>3.69</td>
<td>1.439</td>
</tr>
<tr>
<td>12. Even in difficult situations, educators can depend on each other.</td>
<td>265</td>
<td>3.92</td>
<td>1.277</td>
</tr>
<tr>
<td>13. Caring relationships exist among staff and students that are built on trust and respect.</td>
<td>265</td>
<td>4.34</td>
<td>1.010</td>
</tr>
<tr>
<td>14. Conflicts rarely occur among members of staff.</td>
<td>265</td>
<td>3.73</td>
<td>1.425</td>
</tr>
<tr>
<td>15. School has an enabling climate which makes it pleasurable for students and staff</td>
<td>265</td>
<td>4.12</td>
<td>1.246</td>
</tr>
<tr>
<td>School Climate</td>
<td>265</td>
<td>3.96</td>
<td>.988</td>
</tr>
</tbody>
</table>

Mean* - Range 1-5, higher values express stronger agreement

Supportive School Structure

In this section, the idea was to investigate the various aspects of school structure, namely resources: time, fiscal resources and availability of technological and instructional resources, opportunities for staff development and the communication system. Each question measures a different parameter, which explains significant variations in the mean scores.

The highest value obtained is regarding the communication system, despite the fact that it is below 4. Therefore, we cannot say that there is an effective communication system in secondary schools in Mauritius. According to the survey data, enough time is not generally provided to facilitate collaborative work, as on the Likert scale of 1 to 5, the mean score is 3.54, that is between ‘neither agree nor disagree’ and ‘agree’ with a standard deviation of greater than 1.

The score for continuous learning with the assistance of resource persons at school level is also on the lower side with a mean value of 3.26. Hence, educators do not generally feel that they are given the opportunities and support for continuous professional development. Furthermore, the mean score for ‘fiscal resources are available for professional development’ is below but very close to 3, that is educators in general neither agree nor disagree with the statement.

On the whole, there seems to be a lot of constraints concerning the different aspects of school structure in the secondary schools. Hence, we cannot say that there is a supportive school structure in Mauritian secondary schools.
Table 29. Supportive School Structure

<table>
<thead>
<tr>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>16. Time is provided to facilitate collaborative work</td>
<td>265</td>
<td>3.54</td>
</tr>
<tr>
<td>17. Fiscal resources are available for professional development</td>
<td>265</td>
<td>2.99</td>
</tr>
<tr>
<td>18. Appropriate technology and instructional materials available</td>
<td>265</td>
<td>3.29</td>
</tr>
<tr>
<td>19. Resource people provide expertise and support for continuous learning</td>
<td>265</td>
<td>3.26</td>
</tr>
<tr>
<td>20. Communication systems promote a flow of information across the entire school community</td>
<td>265</td>
<td>3.81</td>
</tr>
<tr>
<td>Supportive School Structure</td>
<td>265</td>
<td>3.38</td>
</tr>
</tbody>
</table>

Mean* - Range 1-5, higher values express stronger agreement

**Professional Learning Community**

This section analyses the general findings of the 4 elements of the Professional Learning Community separately in order to understand the nature of the PLC in the schools in general. Then based on these data, the score for the PLC was calculated to give a measure of the PLC.

**Shared Vision and Values**

Shared vision and values inform many things that happen in the school. A collective engagement to develop a shared vision promotes commitment among staff for its realization. Although educators are less convinced about their involvement in the development of a shared vision, they are more agreeable to the statement ‘staff is committed to the shared vision for the improvement of the school’ with a mean score of above 4 and highest among the five statements. Hence, educators feel that they are working towards the improvement of the school.

On the other hand, the mean score for ‘A collaborative process exists for developing a shared sense of values among staff’ (4.01) shows that educators feel that they share common values. The score for shared values support norms of behaviour that guide individual decisions is 4.21; hence educators believe that the shared values inform their behaviours and actions. The score of 4.22 for ‘collective decisions are made in alignment with the school vision and values’ further confirms the educators’ commitment to the school vision and values.

On the whole we can say that educators are committed to the school vision and values which are shared and they guide the educators in their professional activities.
Table 30. Shared Vision and Values

<table>
<thead>
<tr>
<th>Description</th>
<th>N</th>
<th>Mean*</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>21. A collaborative process exists for developing a shared vision among staff</td>
<td>265</td>
<td>3.91</td>
<td>1.278</td>
</tr>
<tr>
<td>22. Staff is committed to the shared vision for the improvement of the school</td>
<td>265</td>
<td>4.32</td>
<td>1.120</td>
</tr>
<tr>
<td>23. A collaborative process exists for developing a sense of shared values among staff</td>
<td>265</td>
<td>4.01</td>
<td>1.219</td>
</tr>
<tr>
<td>24. Shared values support norms of behaviour that guide individual decisions</td>
<td>265</td>
<td>4.21</td>
<td>1.076</td>
</tr>
<tr>
<td>25. Collective decisions are made in alignment with the school’s vision and values</td>
<td>265</td>
<td>4.22</td>
<td>1.137</td>
</tr>
<tr>
<td>Shared vision and values</td>
<td>265</td>
<td>4.13</td>
<td>.951</td>
</tr>
</tbody>
</table>

Mean* - Range 1-5, higher values express stronger agreement

Focus on Student Learning

Focus on student learning is exceptionally very high with a total mean score of 4.6. The mean for all the five statements are above 4.5 on a scale of 1 to 5. The two statements with the highest scores are ‘Educators monitor students’ performance and provide constructive feedback’ and ‘staff is actively involved in improving student learning’. Both statements refer directly to actions taken by educators showing that these practices are actually taking place. The standard deviations for all five statements are also lower than the other sections and are less than 1, showing that there is more consistency in the response. Moreover, the same focus is reflected in the school development plan, assessments and professional development as shown by statements 26, 28 and 29 respectively.

We can conclude that in Mauritian secondary schools, the emphasis is on student learning. There is a great pressure for producing better results as discussed earlier. The survey data clearly reveals this aspect of the secondary schools in Mauritius.

Table 31. Focus on Student Learning

<table>
<thead>
<tr>
<th>Description</th>
<th>N</th>
<th>Mean*</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>26. School development Plan focuses on student learning.</td>
<td>265</td>
<td>4.56</td>
<td>.916</td>
</tr>
<tr>
<td>27. Educators monitor students’ performance and provide constructive feedback</td>
<td>265</td>
<td>4.71</td>
<td>.698</td>
</tr>
<tr>
<td>28. Emphasis is laid on assessment for learning</td>
<td>265</td>
<td>4.64</td>
<td>.790</td>
</tr>
<tr>
<td>29. Professional development focuses on student learning</td>
<td>265</td>
<td>4.52</td>
<td>.866</td>
</tr>
<tr>
<td>30. Staff is actively involved in improving student learning</td>
<td>265</td>
<td>4.68</td>
<td>.754</td>
</tr>
<tr>
<td>Focus on student learning</td>
<td>265</td>
<td>4.62</td>
<td>.602</td>
</tr>
</tbody>
</table>

Mean* - Range 1-5, higher values express stronger agreement
Collaboration - collective learning and shared personal practices

This section is about educators working collaboratively in order to improve their personal practices. At first glance, we can say that educators are working collaboratively to improve teaching practices as all the scores are near or above 4. Educators are working together to seek new knowledge and skills and to address student needs. A lot of this collaborative effort seems to be happening informally as shown by statement 34: ‘staff informally shares ideas and suggestions for improving professional practices’ which has the highest mean score (4.25). On the other hand statement 33: ‘staff engages in dialogue that reflects a respect for diverse ideas leading to continued enquiry’ scored the least among the 5 statements (mean score 3.98). This statement is really about the idea of working together, discussing and analyzing the actual situation and following up with sustained effort. It is a growth promoting activity and requires the effort of everyone. To be able to achieve this end, the support of the school management is important, in terms of providing the time, space and structure.

According to the survey, collective learning and shared personal practices seem to be important practices for improving student learning.

Table 32. Collaboration: Collective Learning and Shared Personal Practices

<table>
<thead>
<tr>
<th>Statement</th>
<th>N</th>
<th>Mean*</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>31. Staff works together to seek knowledge, skills, and strategies and apply this new learning to their work.</td>
<td>265</td>
<td>4.09</td>
<td>1.199</td>
</tr>
<tr>
<td>32. Staff plans and works together to search for solutions to address diverse student needs.</td>
<td>265</td>
<td>4.08</td>
<td>1.181</td>
</tr>
<tr>
<td>33. Staff engages in dialogue that reflects a respect for diverse ideas leading to continued inquiry.</td>
<td>265</td>
<td>3.98</td>
<td>1.192</td>
</tr>
<tr>
<td>34. Staff informally shares ideas and suggestions for improving professional practices.</td>
<td>265</td>
<td>4.25</td>
<td>1.124</td>
</tr>
<tr>
<td>35. Staff has the opportunity to encourage and offer advice to peers.</td>
<td>265</td>
<td>4.15</td>
<td>1.092</td>
</tr>
</tbody>
</table>

Collaboration - collective learning and shared personal practices

Mean* - Range 1- 5, higher values express stronger agreement

Continuous improvement based on reflective inquiry

The response for continuous improvement based on reflective inquiry is very high, with a total mean score of 4.3 on a Likert scale of 1 to 5. The highest score of 4.65 with a standard deviation of less than one for ‘academic performance results are discussed in departmental meetings to identify strengths and weaknesses’ shows that there is general agreement that students’ results are discussed and appropriate actions are taken at the level of the departments in order to
improve performance. According to the survey data, we can say that teaching strategies are adapted to students’ needs and new practices are adopted based on reflective enquiry.

Table 33. Continuous Improvement based on Reflective Inquiry

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean*</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>36. The staff reviews student work to share and improve instructional practices.</td>
<td>265</td>
<td>4.31</td>
<td>1.038</td>
</tr>
<tr>
<td>37. Academic performance results are discussed in departmental meetings to identify strengths and weaknesses.</td>
<td>264</td>
<td>4.65</td>
<td>.877</td>
</tr>
<tr>
<td>38. New teaching strategies are developed based on the identified strengths and weaknesses.</td>
<td>265</td>
<td>4.35</td>
<td>1.009</td>
</tr>
<tr>
<td>39. staff engages in dialogue that leads to continuous improvement through reflective inquiry.</td>
<td>265</td>
<td>4.18</td>
<td>1.136</td>
</tr>
<tr>
<td>40. Staff has the opportunity to share results of new practices.</td>
<td>265</td>
<td>4.00</td>
<td>1.243</td>
</tr>
<tr>
<td>Continuous improvement based on reflective practices</td>
<td>264</td>
<td>4.29</td>
<td>.847</td>
</tr>
</tbody>
</table>

Mean* - Range 1-5, higher values express stronger agreement

Based on the survey, we can suggest that elements of the Professional Learning Community are present to a large extent in the 8 schools surveyed. There is a great focus is on student learning. Collaborative efforts and reflective practices lead to improved teaching practices and student learning. Collective learning and inquiry lead to continuous improvement. However, the school climate and school structure do not seem to be optimal for the development of the PLC. In order to better understand the relationships between the PLC and the school conditions (leadership, school climate and structure) correlation and regression analyses have been carried out.

**Correlations between Leadership, school factors and PLC**

Pearson Correlation with 2-tailed test has been carried out. The correlation coefficient \((r)\) determines the correlations between leadership, school factors and the PLC. The results are shown in table 34 below. The purpose is to determine the strength of the correlations. Based on the correlation coefficients, a correlation diagram with all the elements has been constructed as shown in Figure 9.

The correlation scale used is in accordance with Huguenin (2015). The correlations between the two types of leadership, namely instructional and shared leadership and the school climate is positive but weak \((r = .31 \text{ and } .35 \text{ respectively})\). The correlations between school leadership and school structure are greater than that of school climate, but are also considered as weak \((r = .55 \text{ and } .51)\). The PLC is positively correlated to both instructional and shared leadership, however,
the correlation between instructional leadership and the PLC is greater \((r = .58)\). School climate is positively correlated to school structure with an \(r\) value of .51. However, there is a greater correlation between school structure and PLC \((r = .536)\) compared to school climate and PLC \((r = .421)\), although both are considered as positive and weak.

The Pearson correlations between shared vision and values and leadership, school climate and school structure are more or less equal ranging between .44 and .54. This also shows a weak positive correlation.

Focus on student learning is weakly correlated to instructional leadership \((r = .457)\) and very weakly correlated to shared leadership \((r = .293)\). There is a very weak correlation with the school climate \((r = .185)\). The correlations are significant at the 1% level.

The correlations between collaboration and shared practices and school leadership, school climate and school structure are significant and almost the same, ranging between .373 and .448, showing a weak positive correlation.

The correlation between reflective practices and instructional leadership is greatest with an \(r\) value of .522 followed by school structure with \(r\) value of .448. The correlation with shared leadership and school climate are similar \((r = .373)\).

| Table 34. Pearson Correlation Coefficients for school variables |
|--------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
|                           | Instructional Leadership | Shared Leadership | Climate | Structure | Shared Vision & Values | Focus on SL | Collaboration | Continuous Improvement | PLC |
| Instructional Leadership  | 1 | | | | | | | | |
| Shared Leadership         | .600** | 1 | | | | | | | |
| Climate                   | .312** | .348** | 1 | | | | | | |
| Structure                 | .55** | .514** | .51** | 1 | | | | | |
| Shared vision and values  | .51** | .441** | .474** | .543** | 1 | | | | |
| Focus on student learning | .457** | .293** | .185** | .297** | .436** | 1 | | | |
| Collaboration             | .445** | .408** | .373** | .448** | .587** | .575** | 1 | | |
| Continuous Improvement    | .522** | .373** | .373** | .448** | .615** | .621** | .692** | 1 | |
| PLC                       | .580** | .464** | .421** | .536** | .819** | .746** | .869** | .881** | 1 |

**Correlation is significant at the 0.01 level (2-tailed)
Regression Analysis

The Pearson Correlations show only the correlation between the variables, but do not indicate whether there is a causative effect between the dependent variable (PLC) and the predictors (instructional Leadership, shared leadership, school climate and school culture). Running the Regression analysis has helped us to understand the relationships between the dependent variable and the predictors. Linear Regression was first carried out and the results are given in table 35.

<table>
<thead>
<tr>
<th>Table 35. Regression Analysis (Bivariate)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coefficients&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>PLC/ Instructional Leadership</td>
</tr>
<tr>
<td>PLC/ Shared Leadership</td>
</tr>
<tr>
<td>PLC/ School Climate</td>
</tr>
<tr>
<td>PLC/ School Structure</td>
</tr>
</tbody>
</table>

<sup>a</sup> Dependent Variable: PLC
The Linear Regression analysis treats the predictors separately and shows the linear relationships between the PLC and each predictor separately. The gradient of the regression line gives us a measure of how the predictors (Instructional Leadership, shared leadership, school climate and school structure) influence the dependent variable (PLC) separately.

The collective influence of all the predictors on the dependent variable has been tested using the Multiple Regression analysis. This aims at demonstrating the joint effect of all the 4 independent variables (instructional leadership, shared leadership, school climate and school structure) on the Professional Learning Community. It is the process of constructing a linear equation that predicts the values of the dependent (y) variable using the values of the independent variables (x) using Ordinary Least Square (OLS) method. This OLS model can be represented as the equation:

\[ Y = b_0 + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + e \]

\( Y \) is PLC, \( X_1 \) to \( X_4 \) are the 4 predictors (instructional leadership, shared leadership, school climate and school structure), \( b_0 \) is the constant term, \( b_1 \) to \( b_4 \) are the sample estimates from the population parameters from the equation and \( e \) is the error term.

To confirm the validity of this model, we have considered the three assumptions: non-normality, multicollinearity and heteroskedasticity before running the multiple regression. Endogeneity, that is loop of causality between the variables does not apply to the model as the predictors are less likely to be influenced by the PLC.

Multicollinearity, that is a high correlation between the independent variables, has been measured using the VIF (Variance Inflation Factor) and the inspection of the correlation coefficients. These two indicators show whether two or more independent variables are highly correlated. The VIF values (from SPSS) are very low (ranging from 1.35 to 1.757) and below 3. The Pearson correlation coefficients are also considered as weak (ranging from .421 to .58) as shown in table 34. Based on the VIF values and \( r \) values, it is therefore, less likely that the results are distorted by multicollinearity (Wichers, 1995).

For regression analysis, data need to show both normality and homoscedasticity. Normality is where all the variances follow a straight line which is the line of best fit. Homoscedasticity is where the variances along the line of best fit remain similar as you move along the line.

The Shapiro-Wilk test for non-normality was performed. The null hypothesis was rejected showing that there is significant evidence of non-normality. The Breusch Pagan test for
heteroscedasticity was performed. The null hypothesis is rejected showing that there is significant evidence of heteroscedasticity. These tests were performed using R (open source programming language and software environment for statistical computing) as they could not be run in SPSS.

The White correction was applied and addressed both the issue of non-normality and heteroscedasticity. An OLS regression with robust with standard errors was then run. The table below shows the results.

<table>
<thead>
<tr>
<th>Table 36. Multiple Regression- PLC and school factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coefficients( ^a )</td>
</tr>
<tr>
<td>(Constant)</td>
</tr>
<tr>
<td>Instructional leadership</td>
</tr>
<tr>
<td>Shared leadership</td>
</tr>
<tr>
<td>School structure</td>
</tr>
<tr>
<td>School climate</td>
</tr>
</tbody>
</table>

\( ^a \) Dependent Variable: PLC; \* significant at .05 level; *** significant at .001 level

Therefore, the OLS multiple regression model for the influence of instructional leadership, shared leadership, school climate and school structure on the Professional Learning Community can be represented as:

\[
PLC = 2.823 + .186 \times \text{Instructional Leadership} + .137 \times \text{Shared Leadership} + .079 \times \text{School structure} + .014 \times \text{School climate} + e
\]

This model shows how the Professional Learning Community is influenced by the combined effects of the 4 variables (Instructional leadership, shared leadership, school structure and school climate), based on the data collected from educators. It is noted that the values are different from the simple regressions (table 35) which measures the effects separately. The model shows that instructional leadership and shared leadership have greater influence on PLC and the values are significant at the 0.1% level. The effect of school structure is smaller and significant at the 5% level. The effect of school climate is very small and not significant. **To sum up, leadership has an influence on the PLC.** The influence of instructional leadership is greater than shared leadership. School structure has little influence on the PLC, probably an indirect effect. The effect of school climate is negligible. This regression model supports our theoretical model.
Comparing the 8 Schools

A detailed analysis of the quantitative data for the 8 schools is essential for comparing different leadership styles, school climate and school structure and their impact on the PLC. The 8 schools have been labelled A to H in order to maintain anonymity and confidentiality.

Response Rate

Figure 10 shows the percentage response for each of the 8 schools under study. School G has the highest response rate of 78.3 % that is 47 out of the 60 questionnaires distributed were returned. School D has the lowest response rate of 26.7%. School A and H also show a low response rate of 36.7% and 41.7% respectively. The other schools B, C, E and F show a relatively good response ranging from 60 to 70 percent.

Educators’ Profile for the 8 schools

The educator’s profile provides detailed analysis of the gender, position as HOD, subject areas and experience for each school separately.

Gender

The gender differences for each of the 8 schools are shown in the table 37. The gender differences vary widely from one school to another. Female respondents are larger in number compared to their male counterparts in most schools except for schools B and E. For school C the number of male and female respondents is almost equal. Exceptionally in schools A and H,
there are very few male respondents. Both these two schools are state and girls’ schools. School G which is a private girls’ school has also fewer male respondents.

Table 37. Educators’ Gender

<table>
<thead>
<tr>
<th>School</th>
<th>Gender</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>F</td>
<td>20</td>
<td>90.9</td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>2</td>
<td>9.1</td>
</tr>
<tr>
<td>B</td>
<td>F</td>
<td>13</td>
<td>36.1</td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>23</td>
<td>63.9</td>
</tr>
<tr>
<td>C</td>
<td>F</td>
<td>18</td>
<td>48.6</td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>19</td>
<td>51.4</td>
</tr>
<tr>
<td>D</td>
<td>F</td>
<td>10</td>
<td>62.5</td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>6</td>
<td>37.5</td>
</tr>
<tr>
<td>E</td>
<td>F</td>
<td>18</td>
<td>45.0</td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>22</td>
<td>55.0</td>
</tr>
<tr>
<td>F</td>
<td>F</td>
<td>27</td>
<td>65.9</td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>14</td>
<td>34.1</td>
</tr>
<tr>
<td>G</td>
<td>F</td>
<td>35</td>
<td>74.5</td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>12</td>
<td>25.5</td>
</tr>
<tr>
<td>H</td>
<td>F</td>
<td>23</td>
<td>88.5</td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>3</td>
<td>11.5</td>
</tr>
</tbody>
</table>

Subject Areas in the 8 schools

Table 38 shows the number of educators for the different subject areas in the 8 schools surveyed. There is a random involvement of all the subject areas in most of the schools. In all schools, respondents are from all 5 subject areas except for school D where only 3 subject areas are represented. The largest number of respondents is from the language and science departments.

Table 38. Educators for each Subject Area

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maths</td>
<td>1(4.5)</td>
<td>4(11.1)</td>
<td>6(16.2)</td>
<td>2(12.5)</td>
<td>5(12.5)</td>
<td>8(19.5)</td>
<td>7(14.9)</td>
<td>5(19.2)</td>
<td>38</td>
</tr>
<tr>
<td>Sciences</td>
<td>2(9.1)</td>
<td>6(16.7)</td>
<td>10(27)</td>
<td>637.5</td>
<td>11(27.5)</td>
<td>7(17.1)</td>
<td>12(25.5)</td>
<td>5(19.2)</td>
<td>59</td>
</tr>
<tr>
<td>Economics</td>
<td>5(22.7)</td>
<td>7(19.4)</td>
<td>2(5.4)</td>
<td>0</td>
<td>8(20)</td>
<td>2(4.9)</td>
<td>612.8</td>
<td>4(15.4)</td>
<td>34</td>
</tr>
<tr>
<td>Technical</td>
<td>2(9.1)</td>
<td>3(8.3)</td>
<td>4(10.8)</td>
<td>0</td>
<td>1(2.5)</td>
<td>5(12.2)</td>
<td>4(8.5)</td>
<td>1(3.8)</td>
<td>20</td>
</tr>
<tr>
<td>Languages</td>
<td>9(40.9)</td>
<td>13(36.1)</td>
<td>11(29.7)</td>
<td>7(43.8)</td>
<td>10(25)</td>
<td>11(26.8)</td>
<td>13(27.7)</td>
<td>8(30.8)</td>
<td>82</td>
</tr>
<tr>
<td>Others</td>
<td>3(13.6)</td>
<td>3(8.3)</td>
<td>4(10.8)</td>
<td>1(6.3)</td>
<td>5(12.5)</td>
<td>8(19.5)</td>
<td>5(10.6)</td>
<td>3(11.5)</td>
<td>32</td>
</tr>
<tr>
<td>Total</td>
<td>22(100)</td>
<td>36(100)</td>
<td>37(100)</td>
<td>16(100)</td>
<td>40(100)</td>
<td>41(100)</td>
<td>47(100)</td>
<td>26(100)</td>
<td>265</td>
</tr>
</tbody>
</table>
Sciences, Economics, Technical and languages are clusters of subjects as follows:

- **Sciences** – Chemistry, Physics and Biology.
- **Economics** – Economics, Principles of Account and Business Studies.
- **Technical** – Design & Technology, Food and Nutrition and Dress and Textiles.
- **Languages** – English, French, Hindi, Urdu, Tamil, Telegu, Marathi and Modern Chinese.

Hence, the table below gives an idea of how many departments are involved. For example, in schools G and H there are 8 departments involved as there are 8 HODs. In school B there are 9 departments involved in the survey with a total of 37 respondents.

<table>
<thead>
<tr>
<th>School</th>
<th>Number of HODS</th>
<th>Number of Educators</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>6</td>
<td>16</td>
<td>22</td>
</tr>
<tr>
<td>B</td>
<td>9</td>
<td>27</td>
<td>36</td>
</tr>
<tr>
<td>C</td>
<td>6</td>
<td>31</td>
<td>37</td>
</tr>
<tr>
<td>D</td>
<td>6</td>
<td>10</td>
<td>16</td>
</tr>
<tr>
<td>E</td>
<td>7</td>
<td>33</td>
<td>40</td>
</tr>
<tr>
<td>F</td>
<td>6</td>
<td>35</td>
<td>41</td>
</tr>
<tr>
<td>G</td>
<td>8</td>
<td>39</td>
<td>47</td>
</tr>
<tr>
<td>H</td>
<td>8</td>
<td>18</td>
<td>26</td>
</tr>
<tr>
<td>Total</td>
<td>56</td>
<td>209</td>
<td>265</td>
</tr>
</tbody>
</table>

**Years of Experience of Educators**

<table>
<thead>
<tr>
<th>Percentage Years of Experience</th>
<th>1 to 4</th>
<th>5 to 9</th>
<th>10 to 14</th>
<th>more than 15</th>
</tr>
</thead>
<tbody>
<tr>
<td>School A</td>
<td>0.75</td>
<td>1.13</td>
<td>1.5</td>
<td>4.9</td>
</tr>
<tr>
<td>B</td>
<td>1.5</td>
<td>0.75</td>
<td>2.26</td>
<td>8.67</td>
</tr>
<tr>
<td>C</td>
<td>1.89</td>
<td>1.13</td>
<td>2.64</td>
<td>8.3</td>
</tr>
<tr>
<td>D</td>
<td>0</td>
<td>0</td>
<td>0.75</td>
<td>5.28</td>
</tr>
<tr>
<td>E</td>
<td>3.01</td>
<td>6.8</td>
<td>1.5</td>
<td>4.15</td>
</tr>
<tr>
<td>F</td>
<td>4.9</td>
<td>8.3</td>
<td>0.75</td>
<td>1.5</td>
</tr>
<tr>
<td>G</td>
<td>3.01</td>
<td>4.15</td>
<td>4.9</td>
<td>5.66</td>
</tr>
<tr>
<td>H</td>
<td>1.89</td>
<td>2.26</td>
<td>2.64</td>
<td>3.01</td>
</tr>
<tr>
<td>Total Percentage</td>
<td>17</td>
<td>24.5</td>
<td>17</td>
<td>41.5</td>
</tr>
</tbody>
</table>

Considering each school separately, it is noted that all of them have the majority of the respondents in the category greater than 15 years except for schools E and F. 85% of the
respondents of school F and 63% of those of school E have less than 10 years of experience, this
trend is different from the other schools. In school D none of the respondents have less than 10
years of experience.

Table 41 shows the number of years HODs and educators have been working in their present
schools. 82 out of the 265 respondents have been working for more than 10 years in their present
school, making a percentage of 31%, which is the highest of the four categories. However, 4
schools have almost none of them in this category as shown in table 41. On the other hand, the
distribution is more or less the same in the three others categories.

<table>
<thead>
<tr>
<th>School</th>
<th>Percentage</th>
<th>Number of Years working in Present School</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&lt; 2</td>
<td>2 to 4</td>
</tr>
<tr>
<td>A</td>
<td>1.9</td>
<td>3.4</td>
</tr>
<tr>
<td>B</td>
<td>1.5</td>
<td>0.8</td>
</tr>
<tr>
<td>C</td>
<td>1.5</td>
<td>1.1</td>
</tr>
<tr>
<td>D</td>
<td>0</td>
<td>3.8</td>
</tr>
<tr>
<td>E</td>
<td>1.9</td>
<td>1.1</td>
</tr>
<tr>
<td>F</td>
<td>5.3</td>
<td>3.0</td>
</tr>
<tr>
<td>G</td>
<td>1.5</td>
<td>2.3</td>
</tr>
<tr>
<td>H</td>
<td>4.9</td>
<td>4.2</td>
</tr>
<tr>
<td>TotalPercentage</td>
<td>18.5</td>
<td>19.6</td>
</tr>
</tbody>
</table>

Table 42. Experience in present school and total number of years of experience

<table>
<thead>
<tr>
<th>Experience in present school</th>
<th>School</th>
<th>TotalNumber ofYears of Experience</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>State</td>
<td>Private</td>
</tr>
<tr>
<td>2 to 4 years</td>
<td>14.3</td>
<td>5.3</td>
</tr>
<tr>
<td>5 to 7 years</td>
<td>10.2</td>
<td>8.3</td>
</tr>
<tr>
<td>8 to 10 years</td>
<td>2.6</td>
<td>9.8</td>
</tr>
<tr>
<td>&gt; 10 years</td>
<td>.4</td>
<td>30.6</td>
</tr>
<tr>
<td>Total percentage</td>
<td>40</td>
<td>60</td>
</tr>
</tbody>
</table>
In an attempt to explain the differences between the schools in terms of educators’ years of service in the school and years of experience, state and private schools have been tabled separately. Table 42 shows the trends in state and private schools. In private schools the majority of the respondents (30.6%) have been working in the school for more than 10 years, whereas in state schools most of them have from 1 to 7 years of service in their present school; although many of them (14.7%) have more than 15 years of experience. The most probable reason is that there is no transfer of educators in private schools compared to state schools. It is also to be noted that private schools have a greater percentage of educators (26%) with more than 15 years of experience.

**Leadership in the 8 Schools**

In this section we have analysed the school leadership patterns in connection with instructional leadership and shared leadership in the 8 school under study based on the educators’ survey.

**Instructional Leadership**

Instructional leadership in the 8 schools varies. Schools A to H show differences in the mean and standard deviation. School E has the highest mean value and relatively low standard deviation compared to the others schools. School C shows a high standard deviation. To test whether the differences are significant, the one-way ANOVA was carried out and the significance value of .000 (< .05) proves that there are significant differences between the means of the eight schools. However, at this level, we do not know between which schools the differences are significant. Therefore, the Post Hoc test has been carried out. Bonferroni method was chosen although it is the most conservative one as it reduces type 1 error, it has good statistical power and it can be used for large number of unequal comparisons. The results are given table 44.
Table 43. Instructional Leadership for the 8 schools

<table>
<thead>
<tr>
<th>School</th>
<th>Mean*</th>
<th>N</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>4.0818</td>
<td>22</td>
<td>.72941</td>
</tr>
<tr>
<td>B</td>
<td>4.4857</td>
<td>35</td>
<td>.51856</td>
</tr>
<tr>
<td>C</td>
<td>3.8162</td>
<td>37</td>
<td>1.33781</td>
</tr>
<tr>
<td>D</td>
<td>4.0250</td>
<td>16</td>
<td>.64859</td>
</tr>
<tr>
<td>E</td>
<td>4.6450</td>
<td>40</td>
<td>.59483</td>
</tr>
<tr>
<td>F</td>
<td>4.1951</td>
<td>41</td>
<td>.75298</td>
</tr>
<tr>
<td>G</td>
<td>4.4936</td>
<td>47</td>
<td>.54350</td>
</tr>
<tr>
<td>H</td>
<td>4.2923</td>
<td>26</td>
<td>.61509</td>
</tr>
<tr>
<td>Total</td>
<td>4.2917</td>
<td>264</td>
<td>.80318</td>
</tr>
</tbody>
</table>

Mean* - Range 1- 5, higher values express stronger agreement

Table 44. Post Hoc Test for Instructional Leadership

<table>
<thead>
<tr>
<th></th>
<th>SCHOOLS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
</tr>
<tr>
<td>S</td>
<td>C</td>
</tr>
<tr>
<td></td>
<td>A</td>
</tr>
<tr>
<td></td>
<td>B</td>
</tr>
<tr>
<td></td>
<td>C</td>
</tr>
<tr>
<td></td>
<td>D</td>
</tr>
<tr>
<td></td>
<td>E</td>
</tr>
<tr>
<td></td>
<td>F</td>
</tr>
<tr>
<td></td>
<td>G</td>
</tr>
<tr>
<td></td>
<td>H</td>
</tr>
</tbody>
</table>

* . The mean difference is significant at the .05 level

According to the Post Hoc test for instructional leadership, the main differences lie between school C and schools B, E and G, as the p values are less than .05 as shown in table 44. Moreover, referring to the error plot (Annex 4), School C is on the lower side, and schools B, E and G are on the higher side.

Therefore, we can say that schools B, E and G exhibit greater patterns of instructional leadership. However, the differences between these 3 schools and schools A, D, F and H are not significant. The difference is significant between school C and the rest.
**Shared Leadership**

The mean values and standard deviations for the 8 schools are different. Schools B, E and H have higher mean values indicating higher levels of shared leadership. The lower standard deviations show that the responses are more consistent. For further analysis, the one-way ANOVA was carried out and the significance value of .000 (< .05) shows that there are significant differences between the means of the eight schools. These differences are also illustrated by the error plot (*Annex 4*).

**Table 45. Shared Leadership for the 8 Schools**

<table>
<thead>
<tr>
<th>School</th>
<th>Mean*</th>
<th>N</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>3.5636</td>
<td>22</td>
<td>.98877</td>
</tr>
<tr>
<td>B</td>
<td>4.1444</td>
<td>36</td>
<td>.60966</td>
</tr>
<tr>
<td>C</td>
<td>3.3568</td>
<td>37</td>
<td>1.44694</td>
</tr>
<tr>
<td>D</td>
<td>3.4000</td>
<td>16</td>
<td>1.26702</td>
</tr>
<tr>
<td>E</td>
<td>4.1650</td>
<td>40</td>
<td>.62411</td>
</tr>
<tr>
<td>F</td>
<td>3.8049</td>
<td>41</td>
<td>.93860</td>
</tr>
<tr>
<td>G</td>
<td>3.5447</td>
<td>47</td>
<td>1.02040</td>
</tr>
<tr>
<td>H</td>
<td>4.2308</td>
<td>26</td>
<td>.73254</td>
</tr>
<tr>
<td>Total</td>
<td>3.7940</td>
<td>265</td>
<td>1.01741</td>
</tr>
</tbody>
</table>

Mean* - Range 1-5, higher values express stronger agreement

**Table 46. Post Hoc Test for Shared Leadership**

<table>
<thead>
<tr>
<th>SCHOOL</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td></td>
<td>.805</td>
<td>1.00</td>
<td>1.00</td>
<td>.589</td>
<td>1.00</td>
<td>1.00</td>
<td>.533</td>
</tr>
<tr>
<td>H</td>
<td></td>
<td>.018*</td>
<td>.328</td>
<td>1.00</td>
<td>1.00</td>
<td>.166</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>O</td>
<td></td>
<td></td>
<td>1.00</td>
<td>.010*</td>
<td>1.00</td>
<td>1.00</td>
<td>.015*</td>
<td></td>
</tr>
<tr>
<td>O</td>
<td></td>
<td></td>
<td></td>
<td>.239</td>
<td>1.00</td>
<td>1.00</td>
<td>.220</td>
<td></td>
</tr>
<tr>
<td>L</td>
<td></td>
<td></td>
<td></td>
<td>1.00</td>
<td>.096</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.00</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>G</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.122</td>
<td></td>
<td></td>
</tr>
<tr>
<td>H</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* . The mean difference is significant at the .05 level
The Post Hoc test with Bonferroni shows that the significant differences lie between school C and schools B, E and H.

Therefore, we can say that schools B, E and H exhibit higher level of shared leadership, which is significantly different from school C, but not significantly different from schools A, D, F and G. Schools B and E therefore, show highest pattern of instructional and shared leadership. School G has high instructional leadership, but less shared leadership, whereas school H has high shared leadership but less instructional leadership. School C has lowest patterns of both instructional and shared leadership.

**Supportive School Climate**

As discussed in the previous section, the mean score for school climate is relatively low and less than 4 on a Likert scale of 1 to 5. A detailed school wise analysis shows marked differences, especially for schools C and D. The mean scores range from 3.9 to 4.4 for all schools, except for schools C and D where the values are much lower (3.2). These differences are also illustrated by the error plot. Moreover, the one-way ANOVA confirms that there are significant differences in the mean scores which have been further investigated by the Post Hoc test.

<table>
<thead>
<tr>
<th>School</th>
<th>Mean*</th>
<th>N</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>4.2727</td>
<td>22</td>
<td>.66917</td>
</tr>
<tr>
<td>B</td>
<td>4.4444</td>
<td>36</td>
<td>.69300</td>
</tr>
<tr>
<td>C</td>
<td>3.2270</td>
<td>37</td>
<td>1.14325</td>
</tr>
<tr>
<td>D</td>
<td>3.2250</td>
<td>16</td>
<td>1.09026</td>
</tr>
<tr>
<td>E</td>
<td>4.2900</td>
<td>40</td>
<td>.76721</td>
</tr>
<tr>
<td>F</td>
<td>3.9512</td>
<td>41</td>
<td>.97548</td>
</tr>
<tr>
<td>G</td>
<td>3.9489</td>
<td>47</td>
<td>.90647</td>
</tr>
<tr>
<td>H</td>
<td>4.0462</td>
<td>26</td>
<td>.98681</td>
</tr>
<tr>
<td>Total</td>
<td>3.9600</td>
<td>265</td>
<td>.98845</td>
</tr>
</tbody>
</table>

Mean* - Range 1- 5, higher values express stronger agreement
Table 48. Post Hoc Test for School Climate

Post Hoc (Bonferroni) – significant values

<table>
<thead>
<tr>
<th>SCHOOL</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
</tr>
</thead>
<tbody>
<tr>
<td>S</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>1.00</td>
<td></td>
<td>.001*</td>
<td>.016*</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>H</td>
<td></td>
<td>.000*</td>
<td></td>
<td>.000*</td>
<td>1.00</td>
<td>.526</td>
<td>.418</td>
<td>1.00</td>
</tr>
<tr>
<td>O</td>
<td></td>
<td>1.00</td>
<td></td>
<td>.000*</td>
<td>.015*</td>
<td>.011*</td>
<td>.015*</td>
<td></td>
</tr>
<tr>
<td>O</td>
<td></td>
<td>.003*</td>
<td></td>
<td>.208</td>
<td>.184</td>
<td>.140</td>
<td></td>
<td></td>
</tr>
<tr>
<td>L</td>
<td></td>
<td>1.00</td>
<td></td>
<td>1.00</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F</td>
<td></td>
<td>1.00</td>
<td></td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>H</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* . The mean difference is significant at the .05 level.

Schools C and D are significantly different from the other schools. School C is significantly different from all the other schools and school D is significantly different from schools A, B and E.

Hence we can conclude that schools A, B, E, F, G and H have a supportive school climate which is felt to a lesser extent in schools C and D.

Supportive School Structure

The total mean score (3.38) for supportive school structure is the least among the 8 sections. Schools B and E (both are private schools) show the highest mean scores, that is 3.9 and 4 respectively. They stand out from the other schools. On the other hand, 4 schools, A, C, D and F have low mean scores ranging from 2.82 to 2.98.

The analysis of variance shows significant differences as the $p$ value is less than .05. The error plot (Annex 4) also shows a lot of variations among the schools.
### Table 49. Supportive School Structure for the 8 schools

<table>
<thead>
<tr>
<th>School</th>
<th>Mean*</th>
<th>N</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>2.8273</td>
<td>22</td>
<td>.97452</td>
</tr>
<tr>
<td>B</td>
<td>3.9167</td>
<td>36</td>
<td>.66997</td>
</tr>
<tr>
<td>C</td>
<td>2.9622</td>
<td>37</td>
<td>1.26213</td>
</tr>
<tr>
<td>D</td>
<td>2.9625</td>
<td>16</td>
<td>1.31498</td>
</tr>
<tr>
<td>E</td>
<td>4.0000</td>
<td>40</td>
<td>.72182</td>
</tr>
<tr>
<td>F</td>
<td>2.9854</td>
<td>41</td>
<td>.99638</td>
</tr>
<tr>
<td>G</td>
<td>3.3191</td>
<td>47</td>
<td>1.01267</td>
</tr>
<tr>
<td>H</td>
<td>3.7154</td>
<td>26</td>
<td>.96361</td>
</tr>
<tr>
<td>Total</td>
<td>3.3781</td>
<td>265</td>
<td>1.06699</td>
</tr>
</tbody>
</table>

Mean* - Range 1-5, higher values express stronger agreement

### Table 50. Post Hoc Test for Supportive School Structure

<table>
<thead>
<tr>
<th>SCHOOL</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
</tr>
</thead>
<tbody>
<tr>
<td>S</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>O</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>O</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>L</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* . The mean difference is significant at the .05 level

According to the Post Hoc test, School B is significantly different from schools A, C, D and F. School E is significantly different from schools A, C, D, F and G. School H is not significantly different from the others. Therefore, schools B and E have greater supportive school structure, followed closely by school H. Schools B and E are private schools and H is a state school.

**Professional Learning Communities in the 8 Schools**

**Shared Vision and Values**

The mean scores for shared vision and values are above 4 for 6 schools ranging from 4.11 to 4.58. For 2 schools, C and F, the mean scores are 3.3 and 3.9 respectively. It is also to be noted that for these two schools, the standard deviations are greater and above 1. This shows that there is greater variation in the response. In the error plot diagram school C is well below the others, whereas school B is at the top with the least standard variation showing more consistency in the response.
With a significant difference in the analysis of variance test and the Post Hoc analysis, school C is found to be significantly different from all the other schools except D and F. School C and F are also significantly different from B.

Table 51. Shared Vision and Values for the 8 schools

<table>
<thead>
<tr>
<th>School</th>
<th>Mean*</th>
<th>N</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>4.1182</td>
<td>22</td>
<td>.59732</td>
</tr>
<tr>
<td>B</td>
<td>4.5889</td>
<td>36</td>
<td>.57559</td>
</tr>
<tr>
<td>C</td>
<td>3.3297</td>
<td>37</td>
<td>1.30488</td>
</tr>
<tr>
<td>D</td>
<td>4.1125</td>
<td>16</td>
<td>.79320</td>
</tr>
<tr>
<td>E</td>
<td>4.4550</td>
<td>40</td>
<td>.65003</td>
</tr>
<tr>
<td>F</td>
<td>3.8878</td>
<td>41</td>
<td>1.12610</td>
</tr>
<tr>
<td>G</td>
<td>4.2553</td>
<td>47</td>
<td>.79531</td>
</tr>
<tr>
<td>H</td>
<td>4.3385</td>
<td>26</td>
<td>.72392</td>
</tr>
<tr>
<td>Total</td>
<td>4.1328</td>
<td>265</td>
<td>.95148</td>
</tr>
</tbody>
</table>

Mean* - Range 1- 5, higher values express stronger agreement

Table 52. Post Hoc Test for Shared Vision and Values

<table>
<thead>
<tr>
<th>Post Hoc (Bonferroni)</th>
<th>Significant values</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCHOOLS</td>
<td>A</td>
</tr>
<tr>
<td>S</td>
<td>A</td>
</tr>
<tr>
<td>C</td>
<td>B</td>
</tr>
<tr>
<td>O</td>
<td>C</td>
</tr>
<tr>
<td>O</td>
<td>D</td>
</tr>
<tr>
<td>L</td>
<td>E</td>
</tr>
<tr>
<td>S</td>
<td>F</td>
</tr>
<tr>
<td>G</td>
<td></td>
</tr>
<tr>
<td>H</td>
<td></td>
</tr>
</tbody>
</table>

* . The mean difference is significant at the .05 level

So, we can say that educators’ opinion about shared vision and values in their schools vary. In schools C, D and F, there are less shared values and vision. Schools A, B, E, G and H show more shared vision and values with school B at the highest position.
Focus on Student Learning

All schools have a mean score of above 4 which shows that they all either agree or strongly agree that they focus on student learning. The total mean score for Focus on student learning is 4.6 which is very high. The standard deviations for all schools are relatively low except for school C. The error plot (Annex 4) also reveals some specific nature of school C with the lowest mean score and highest standard deviation. School E has the highest mean score and lowest standard deviation, showing that it is highest in the list.

Table 53. Focus on Student Learning for the 8 schools

<table>
<thead>
<tr>
<th>School</th>
<th>Mean*</th>
<th>N</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>4.7545</td>
<td>22</td>
<td>.45745</td>
</tr>
<tr>
<td>B</td>
<td>4.6389</td>
<td>36</td>
<td>.47526</td>
</tr>
<tr>
<td>C</td>
<td>4.1081</td>
<td>37</td>
<td>1.03987</td>
</tr>
<tr>
<td>D</td>
<td>4.7125</td>
<td>16</td>
<td>.43799</td>
</tr>
<tr>
<td>E</td>
<td>4.8100</td>
<td>40</td>
<td>.31033</td>
</tr>
<tr>
<td>F</td>
<td>4.5366</td>
<td>41</td>
<td>.61553</td>
</tr>
<tr>
<td>G</td>
<td>4.7787</td>
<td>47</td>
<td>.33682</td>
</tr>
<tr>
<td>H</td>
<td>4.7231</td>
<td>26</td>
<td>.40428</td>
</tr>
<tr>
<td>Total</td>
<td>4.6219</td>
<td>265</td>
<td>.60225</td>
</tr>
</tbody>
</table>

Mean* - Range 1-5, higher values express stronger agreement

Table 54. Post Hoc Test for Focus on Student Learning

<table>
<thead>
<tr>
<th>SCHOOL</th>
<th>S</th>
<th>C</th>
<th>H</th>
<th>O</th>
<th>O</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>1.00</td>
<td>/</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>B</td>
<td>/</td>
<td>.001*</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>C</td>
<td>/</td>
<td>.002*</td>
<td>/</td>
<td>.012*</td>
<td>.000*</td>
<td>.027*</td>
</tr>
<tr>
<td>D</td>
<td>/</td>
<td>/</td>
<td>.126*</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>E</td>
<td>/</td>
<td>/</td>
<td>/</td>
<td>.858</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>F</td>
<td>/</td>
<td>/</td>
<td>/</td>
<td>/</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>G</td>
<td>/</td>
<td>/</td>
<td>/</td>
<td>/</td>
<td>/</td>
<td>1.00</td>
</tr>
<tr>
<td>H</td>
<td>/</td>
<td>/</td>
<td>/</td>
<td>/</td>
<td>/</td>
<td>/</td>
</tr>
</tbody>
</table>

*. The mean difference is significant at the .05 level

The ANOVA test shows that there are significant differences between the schools. Further investigation with the Post Hoc test shows that there are no significant differences among the schools except for school C. School C is significantly different from all the other schools.

Therefore, it can be concluded that all schools have a strong focus on student learning, even school C, as the mean value is above 4.
**Collaboration- collective learning and shared personal practices**

According to the survey data, all schools show high collaboration, collective learning and shared personal practices, except for school C. School C has the lowest mean score (3.3) and highest standard deviation (1.3), followed by school D. On the other hand, school E has the highest mean score (4.5) and lowest standard deviation (.528), hence the highest level of collective learning and shared personal practices. In the error plot (*Annex 4*), there is a marked distinction between schools C and D compared to the rest.

<p>| Table 55. Collaboration: Collective Learning and Shared Personal Practices |
|-----------------------------|----------|------|----------|</p>
<table>
<thead>
<tr>
<th>School</th>
<th>Mean</th>
<th>N</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>4.2455</td>
<td>22</td>
<td>.79025</td>
</tr>
<tr>
<td>B</td>
<td>4.2889</td>
<td>36</td>
<td>.73825</td>
</tr>
<tr>
<td>C</td>
<td>3.3243</td>
<td>37</td>
<td>1.31009</td>
</tr>
<tr>
<td>D</td>
<td>3.8750</td>
<td>16</td>
<td>1.05293</td>
</tr>
<tr>
<td>E</td>
<td>4.5000</td>
<td>40</td>
<td>.52818</td>
</tr>
<tr>
<td>F</td>
<td>4.0732</td>
<td>41</td>
<td>.95578</td>
</tr>
<tr>
<td>G</td>
<td>4.2936</td>
<td>47</td>
<td>.67740</td>
</tr>
<tr>
<td>H</td>
<td>4.1538</td>
<td>26</td>
<td>.73170</td>
</tr>
<tr>
<td>Total</td>
<td>4.1117</td>
<td>265</td>
<td>.92436</td>
</tr>
</tbody>
</table>

Mean* - Range 1- 5, higher values express stronger agreement

<table>
<thead>
<tr>
<th>Table 56. Post Hoc Test for Collaboration in the 8 schools</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Post Hoc (Bonferroni) – Significant values</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td><strong>SCHOOLS</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td><strong>S</strong></td>
</tr>
<tr>
<td>A</td>
</tr>
<tr>
<td>S</td>
</tr>
<tr>
<td>C</td>
</tr>
<tr>
<td>H</td>
</tr>
<tr>
<td>O</td>
</tr>
<tr>
<td>L</td>
</tr>
<tr>
<td>S</td>
</tr>
<tr>
<td>G</td>
</tr>
<tr>
<td>H</td>
</tr>
</tbody>
</table>

* . The mean difference is significant at the .05 level

The significant value of .000 (< .05) for the ANOVA test shows significant differences between the schools. The Post Hoc test however, shows that the significant difference is between school C and the others. There are no significant differences between schools A, B, D, E, F, G and H.

Therefore, we can say that collective learning and shared personal practices take place to a larger extent in all schools compared to school C.
Continuous improvement based on reflective inquiry

All schools show a very high response for continuous improvement based on reflective inquiry, with a total mean value of 4.3 on a scale of 1 to 5. School C demarcates from the other schools with the minimum mean value of 3.5 and the maximum standard variation of 1.29. Moreover, on the error plot diagram, we can see clearly that school C is much below the other schools.

Table 57. Continuous Improvement based on Reflective Inquiry

<table>
<thead>
<tr>
<th>School</th>
<th>Mean*</th>
<th>N</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>4.2909</td>
<td>22</td>
<td>.75272</td>
</tr>
<tr>
<td>B</td>
<td>4.4111</td>
<td>36</td>
<td>.43803</td>
</tr>
<tr>
<td>C</td>
<td>3.5189</td>
<td>37</td>
<td>1.29225</td>
</tr>
<tr>
<td>D</td>
<td>4.5000</td>
<td>16</td>
<td>.57504</td>
</tr>
<tr>
<td>E</td>
<td>4.5450</td>
<td>40</td>
<td>.55282</td>
</tr>
<tr>
<td>F</td>
<td>4.1610</td>
<td>41</td>
<td>.90246</td>
</tr>
<tr>
<td>G</td>
<td>4.6128</td>
<td>47</td>
<td>.54757</td>
</tr>
<tr>
<td>H</td>
<td>4.3680</td>
<td>25</td>
<td>.79515</td>
</tr>
<tr>
<td>Total</td>
<td>4.2947</td>
<td>264</td>
<td>.84708</td>
</tr>
</tbody>
</table>

Mean* - Range 1-5, higher values express stronger agreement

Table 58. Post Hoc Test for Continuous Improvement based on Reflective Inquiry

Post Hoc (Bonferroni) – Significant values

<table>
<thead>
<tr>
<th>SCHOOLS</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>/</td>
<td>.009*</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
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<tr>
<td>H</td>
<td>/</td>
<td>.000*</td>
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<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>O</td>
<td>/</td>
<td>.001*</td>
<td>.000*</td>
<td>.010*</td>
<td>.000*</td>
<td>.001*</td>
<td>/</td>
<td></td>
</tr>
<tr>
<td>O</td>
<td>/</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>/</td>
<td></td>
</tr>
<tr>
<td>L</td>
<td>/</td>
<td>.793</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>/</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S</td>
<td>/</td>
<td>.208</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>/</td>
<td></td>
<td></td>
</tr>
<tr>
<td>G</td>
<td>/</td>
<td>1.00</td>
<td>/</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>H</td>
<td>/</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* . The mean difference is significant at the .05 level

The analysis of variance and Post Hoc test show significant differences only between school C and the other schools A, B, D, E, F G and H.

Hence, again, based on the data collected, we can say that educators in all schools practice reflective inquiry leading to continuous improvement to a large extent, except for school C.

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Professional Learning Communities

All the 4 elements of the PLC have been analysed collectively to give one combined score for the PLC. Table 59 shows the mean scores for the PLC in the 8 school under study. The trend is the same as for the individual elements of the PLC. School E has the maximum mean score and school C the minimum mean score.

Table 59. Mean Scores for the PLC

<table>
<thead>
<tr>
<th>School</th>
<th>Mean*</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>4.3523</td>
<td>.53396</td>
</tr>
<tr>
<td>B</td>
<td>4.4819</td>
<td>.45828</td>
</tr>
<tr>
<td>C</td>
<td>3.5703</td>
<td>1.04386</td>
</tr>
<tr>
<td>D</td>
<td>4.3000</td>
<td>.64343</td>
</tr>
<tr>
<td>E</td>
<td>4.5775</td>
<td>.36567</td>
</tr>
<tr>
<td>F</td>
<td>4.1646</td>
<td>.70669</td>
</tr>
<tr>
<td>G</td>
<td>4.4851</td>
<td>.45144</td>
</tr>
<tr>
<td>H</td>
<td>4.3780</td>
<td>.54181</td>
</tr>
</tbody>
</table>

Mean* - Range 1- 5, higher values express stronger agreement

The error plot (Annex 4) shows the PLC distribution for the 8 schools. All the schools are more or less on the same line, except for school C which is at a lower level. There is also a marked difference in the standard deviations. It is lower for schools B, E and G, which shows less variation in the response. This can also be observed in the error plot.

The ANOVA test gives a significant value of .000 (< .05) showing that there are significant differences between the schools. The Post Hoc test further shows that the difference lies between School C and the other schools. From these data and analysis, we can conclude that all schools exhibit Professional Learning Community except for school C.

Table 60. Post Hoc Test for Professional Learning Community

<table>
<thead>
<tr>
<th>Post Hoc (Bonferroni) – Significant Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCHOOLS</td>
</tr>
<tr>
<td>A</td>
</tr>
<tr>
<td>S</td>
</tr>
<tr>
<td>A</td>
</tr>
<tr>
<td>B</td>
</tr>
<tr>
<td>C</td>
</tr>
<tr>
<td>O</td>
</tr>
<tr>
<td>O</td>
</tr>
<tr>
<td>L</td>
</tr>
<tr>
<td>S</td>
</tr>
</tbody>
</table>

*. The mean difference is significant at the .05 level
Summary of Findings from the Educator’s Questionnaire

As a summary of the findings for the 8 schools, the table below shows the mean scores and the schools having the minimum and maximum score for the different sections. Schools with comparatively higher scores are also given.

Schools B and E show high levels of both instructional and shared leadership. 6 schools show supportive school climate, whereas only 3 schools show supportive school structure. Opinions on shared vision and values differ, with 5 schools showing satisfactory response. For 3 elements of the PLC: focus on student learning, collaboration - collective learning and shared personal practices and continuous improvement based on reflective inquiry; all schools show a good response except school C. Hence, in general, according to these findings, we can say that PLC exists in all the schools with the exception of school F.

<table>
<thead>
<tr>
<th>Sections</th>
<th>Mean Score*</th>
<th>School with Lowest Score</th>
<th>School with Highest Score</th>
<th>Schools with higher mean scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Instructional leadership</td>
<td>4.29</td>
<td>C (3.81)</td>
<td>G (4.49)</td>
<td>B, E, G</td>
</tr>
<tr>
<td>2 Shared Leadership</td>
<td>3.79</td>
<td>C (3.4)</td>
<td>H (4.23)</td>
<td>B, E, H</td>
</tr>
<tr>
<td>3 School climate</td>
<td>3.96</td>
<td>C &amp; D (3.2)</td>
<td>B (4.4)</td>
<td>A, B, E, F, G, H</td>
</tr>
<tr>
<td>4 School structure</td>
<td>3.38</td>
<td>A (2.8)</td>
<td>E (4.0)</td>
<td>B, E, H</td>
</tr>
<tr>
<td>5 Shared vision and values</td>
<td>4.13</td>
<td>C (3.33)</td>
<td>B (4.59)</td>
<td>A, B, E, G, H</td>
</tr>
<tr>
<td>6 Focus on student learning</td>
<td>4.62</td>
<td>C (4.11)</td>
<td>E (4.8)</td>
<td>A, B, D, E, F, G, H</td>
</tr>
<tr>
<td>7 Collaboration- Collective learning and shared practices</td>
<td>4.11</td>
<td>C (3.2)</td>
<td>E (4.5)</td>
<td>A, B, D, E, F, G, H</td>
</tr>
<tr>
<td>8 Continuous improvement based on reflective inquiry</td>
<td>4.29</td>
<td>C (3.5)</td>
<td>G (4.6)</td>
<td>A, B, D, E, F, G, H</td>
</tr>
<tr>
<td>9 Professional Learning Community</td>
<td>4.29</td>
<td>C (3.57)</td>
<td>E (4.57)</td>
<td>A, B, D, E, F, G, H</td>
</tr>
</tbody>
</table>

Mean score* - Range 1-5, higher values express stronger agreement
Comparing School Types - State/Private and Low input/High input
For further analysis of the survey data, the school types have been compared that is: low input/high input schools and state/private schools.

**Table 62. Comparing School Types**

<table>
<thead>
<tr>
<th>Item</th>
<th>State / Private</th>
<th>Low input / High input</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Instructional leadership</td>
<td>.024*</td>
<td>.017*</td>
</tr>
<tr>
<td>2 Shared Leadership</td>
<td>.697</td>
<td>.933</td>
</tr>
<tr>
<td>3 School climate</td>
<td>.49</td>
<td>.015*</td>
</tr>
<tr>
<td>4 School structure</td>
<td>.001*</td>
<td>.570</td>
</tr>
<tr>
<td>5 Shared vision and values</td>
<td>.295</td>
<td>.277</td>
</tr>
<tr>
<td>6 Focus on student learning</td>
<td>.662</td>
<td>.002*</td>
</tr>
<tr>
<td>7 Collaboration- Collective learning and shared practices</td>
<td>.470</td>
<td>.000*</td>
</tr>
<tr>
<td>8 Continuous improvement based on reflective inquiry</td>
<td>.761</td>
<td>.004*</td>
</tr>
<tr>
<td>9 PLC</td>
<td>.512</td>
<td>.002*</td>
</tr>
</tbody>
</table>

*Difference in the mean score is statistically significant*

The table shows the significant values for the analysis of variance (ANOVA) for the 8 sections for the school types: state/private and low input/ high input. There is a significant difference in instructional leadership both between state and private schools and high and low input schools; but no significant differences in shared leadership for both school types. School climate is significantly different in high and low input schools. There is significant difference in school structure between state and private schools.

There are no significant differences in shared vision and values for both school types. Yet the PLC is significantly different for high and low input schools.

The error plots illustrate the areas where there are significant differences. The nature of these differences is shown in the following figures:
Figure 11. Instructional Leadership in State and Private Schools

From figure 11, we can see that private schools exhibit greater patterns of instructional leadership compared to state schools.

Figure 12. Instructional Leadership in Low Input and High Input Schools

From figure 12, we can see that schools with low input exhibit greater instructional leadership as compared to high input schools.
Figure 13. School Structure in State and Private Schools

Figure 13 shows that respondents from private schools are more satisfied with their school structure as compared to state schools.

Figure 14. PLC in High Input and Low Input Schools

Low input schools focus more on student learning, work collaboratively to share personal practices and carry out more reflective practices leading to continuous improvement. Hence low input schools are more involved in the PLC compared to high input schools as shown in figure 14.
Details of the mean scores and standard deviation for the school types with statistically significant differences are given in the 2 tables below.

Table 63. Significant Differences between State and Private Schools

<table>
<thead>
<tr>
<th></th>
<th>State schools</th>
<th>Private school</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean Score*</td>
<td>Standard Deviation</td>
</tr>
<tr>
<td>Instructional Leadership</td>
<td>4.15 (.71)</td>
<td>4.38 (.85)</td>
</tr>
<tr>
<td>School structure</td>
<td>3.10 (1.07)</td>
<td>3.56 (1.02)</td>
</tr>
</tbody>
</table>

Mean score* - Range 1- 5, higher values express stronger agreement

According to the data analysis, private schools show significantly greater instructional leadership and school structure as compared to state schools.

Table 64. Significant Differences between Low Input and High Input Schools

<table>
<thead>
<tr>
<th></th>
<th>Low input schools</th>
<th>High Input school</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean Score*</td>
<td>Standard Deviation</td>
</tr>
<tr>
<td>Instructional Leadership</td>
<td>4.39 (.67)</td>
<td>4.16 (.94)</td>
</tr>
<tr>
<td>School Climate</td>
<td>4.09 (.87)</td>
<td>3.79 (1.11)</td>
</tr>
<tr>
<td>Focus on student Learning</td>
<td>4.72 (.45)</td>
<td>4.49 (1.06)</td>
</tr>
<tr>
<td>Collaboration</td>
<td>4.29 (.76)</td>
<td>3.88 (1.07)</td>
</tr>
<tr>
<td>Continuous Improvement</td>
<td>4.42 (.71)</td>
<td>4.12 (.98)</td>
</tr>
<tr>
<td>PLC</td>
<td>4.4 (.54)</td>
<td>4.13 (.83)</td>
</tr>
</tbody>
</table>

Mean score* - Range 1- 5, higher values express stronger agreement

As shown in table 64, low input schools exhibit greater instructional leadership and school climate. 3 elements of the PLC (focus on student learning, collaboration and continuous improvement) have significantly higher scores as compared to high input schools. The overall PLC is also significantly higher in low input schools.

**School Performance Coefficient and Professional Learning Community**

The School Performance Coefficient (SPC) has been calculated using the academic input (CPE results) and the academic output (SC results) as given in Chapter 3, section 3.2.2. It is noted that even though the input and output scores show a similar trends; the school performance coefficient reveals significant differences among the 8 schools. The schools with the highest SPC are the low input private schools. Private schools as discussed earlier are schools with comparatively lower input in terms of students’ academic intake as they are not high demand
schools. The 2 private schools under investigation have been chosen as they have a relatively high % pass at SC although they are low input schools (79.64 for school E and 97.69 for school G). The School Performance Coefficient for these 2 schools are the highest (2.62 for school E and 2.25 for school G) with a considerable gap compared to the others schools. From these data we can conclude that these two private schools are more effective in promoting academic performance of their students. Moreover, school E has the highest school performance coefficient despite having the lowest input score. This shows that the students have made considerable progress during the 5 years of secondary schooling.

The school ranked third on the list based on the SPC (1.8) is school D. There is however, a considerable difference between the SPC values of School D compared to school E and G. School D is an elite state school admitting the best students in the island. These students achieved excellent results at CPE, yet the SC results of many students are not outstanding. The SPC value of 1.8 does not indicate that school D is the best school of the island based on academic performance though it is perceived to be.

The other three state schools, A, F and H have the lowest SPC values. School H (high input) and school F (low input) have the lowest School Performance Coefficients (0.49 and 0.75 respectively). School H has the highest % pass at SC (100%) but the lowest SPC; that is all students have passed but the quality of the results is not very good. School F has the lowest % pass (79.14 %) and very low SPC, showing that as a school it is not very effective in promoting student achievement. These state schools are high demand schools, they are perceived as ‘good’ schools and they admit students with good CPE results but their academic performance are inferior to the other schools.

The SPC values for the 2 confessional schools, B and C are very close (1.67 and 1.68 respectively). The school context for confessional schools is different from state schools. They are also high demand schools and they cater for students of all abilities unlike the state schools. However, based on the SPC values, their academic performance are better than the state schools.

These school performance coefficients show that the schools do have an influence on the academic performance of the students. Some schools are more effective in promoting the academic performance of the students.
Correlation and Regression Analysis: Professional Learning Community and Academic performance

Pearson Correlation Coefficients

The correlation between student academic performance and Professional Learning Communities has been calculated using quantitative data from the educator’s questionnaire and the school performance coefficients (SPC). The Pearson correlation test has been carried out between the SPC and the 4 elements of the PLC. The $r$ values lie between .1 and .14, showing a very weak positive correlation (Huguenin, 2015) between the SPC and the elements of the PLC. These values are consistent for all the 4 elements of the PLC. The correlation between the PLC as a whole and the SPC is also positive but weak, with an $r$ value of .14.

| Shared vision and values | .107 |
| Focus on student learning | .092 |
| Collaboration: Collective learning and shared personal practices | .105 |
| Continuous Improvement based on reflective inquiry | .139* |
| Professional Learning Community | .14 |

* Correlation is significant at the .05 level (2-tailed)

These correlation coefficients indicate a very weak but positive correlation between the PLC and school performance coefficient (SPC). The correlation coefficient only gives the strength of the association between the school performance coefficient and the Professional Learning Community. In order to find out whether the SPC is influenced by the PLC, regression analysis has been carried out.

Simple Linear Regression

Regression analysis between SPC and PLC has been performed using the Ordinary Least Square (OLS) method. The dependent variable ($Y$) is School Performance Coefficient and the predictor ($X$) is Professional Learning Community. The relationship is specified by the equation of a straight line:

$$Y = b + cX + e$$

$b$ is the intercept, $c$ is the slope of the line of best fit, $Y$ is the dependent variable (SPC), $X$ is the predictor (PLC) and $e$ is the error term.
Before running the regression, the assumptions were tested as in section 4.1.3.6. The data showed no multicollinearity but there is evidence of non-normality and heteroscedasticity.

The White correction was applied and addressed both the issue of non-normality and heteroscedasticity. An OLS regression with robust standard errors was then run. Table 66 shows the results.

<table>
<thead>
<tr>
<th>Coefficients(^a)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant (b)</td>
<td>-16.5</td>
</tr>
<tr>
<td>PLC (c)</td>
<td>4.107</td>
</tr>
<tr>
<td>Sig.</td>
<td>0.0693*</td>
</tr>
</tbody>
</table>

\(^a\) Dependent Variable: SPC; * significant at the .1 level

This OLS model can be represented as the equation: \[ SPC = -16.5 + 4.107 \times PLC + e \]

This regression analysis shows that Professional Learning Community has a positive and relatively strong influence on school performance coefficient at the 10% level of significance. This high level of significance is due to the fact that for each school, there is only one SPC value. As the accepted level of significance is 5%, we cannot draw valid conclusions based on this value. We can nevertheless conclude that the existence and level of PLC in the schools under study have an influence on school performance coefficient, but the degree of influence cannot be pronounced.

The scores of the educator’s survey and the school performance coefficient have enabled us to draw several inferences concerning the school leadership, school climate, school structure and academic performance in the 8 schools under study. The relationships between the school factors and the Professional Learning Community have been tested. School leadership is seen to have a significant influence on the Professional Learning Community. The school factors have a lesser influence on the Professional Learning Community. School structure is less supported by the schools but have a greater impact on Professional Learning Community. Finally, Professional Learning Community seems to have a positive influence on the school performance. That is, in schools where there is greater collaboration and collective learning, the school performance coefficient is greater.
4.1.2. Student’s Questionnaire
The student’s questionnaire investigates the level of student wellbeing. It has 4 components namely: student self-esteem, student social wellbeing, student teacher relationship and student friend relationship. A general analysis has been carried out, followed by a detailed analysis for the 8 schools. Then student wellbeing has been correlated with the Professional Learning Community.

**Students’ Profile**
Student profile consists of gender and age only.

**Gender**
The schools surveyed are boys’, girls’ or co-educational schools. There are 3 girls’ schools, 3 boys’ schools and 2 co-educational schools. The total percentage of male respondents is 57% and that of the female respondents is 42.6%.

**Age**
Students involved in the survey are from form 4, the age group being 14 to 15 years. According to the data collected, 3.7% of the students are in the age group 13 to 14 years; and 96.3% of them are in the age group 15 to 16 years. Therefore, a great majority of students have between 15 and 16 years old. This is true for all the 8 schools under study.

**Measure of Internal Reliability and Homogeneity of Variance**
To measure internal reliability, the Cronbach’s Alpha test (Cronbach, 1951) was carried out on the student questionnaire section wise. Factor Analysis (Catell, 1952) was carried out using the Principal Component Analysis (PCA) to determine homogeneity of variance for the 4 sections, namely self-esteem, social wellbeing, student teacher relationship and student friend relationship; and then for student wellbeing as a whole.

The Cronbach’s $\alpha$ for section 1 ($\alpha=.41$) is relatively low. When the last question was eliminated, the Cronbach’s $\alpha$ was raised to .64, therefore, it was decided to eliminate question 5 from section 1 in order to increase the internal reliability of this section. For sections 2, 3 and 4, the Cronbach’s $\alpha$ lies between .71 and .74, which shows acceptable levels, thus confirming their internal reliability. Moreover, Cronbach’s $\alpha$ for the 4 sections together, as a measure of student wellbeing, was increased to .786. The $\alpha$ values are given in table 67.
For Factor Analysis, sections 1 and 3 were extracted as 1 component, which shows that there is homogeneity of variance in these 2 sections.

However, as sections 2 and 4 were both extracted as 2 components, further investigation was carried out to find out where the differences lie.

For section 2 on social wellbeing, it was found that the last question (number 12) was problematic and when it was excluded, the section was considered as 1 component by Factor analysis and the Cronbach’s $\alpha$ was raised to .766. Therefore, it was decided to eliminate question 12 in order to increase homogeneity of variance in the section. This also increased the internal reliability.

For section 4, student friend relationship, the best solution was to remove the 2 problematic questions (questions 18 and 19) and to add question 12 which is related to student and friends. Factor Analysis extracted the section as 1 component which is satisfactory, but the Cronbach’s $\alpha$ was decreased from .725 to .603. Thus, homogeneity of variance increases but internal reliability decreases. Therefore, it was decided to maintain the section as it is in order to have a higher internal reliability.

The amendments gave results which are considered to be the best solution. Table 67 shows the values before and after the amendments.

Table 67. Cronbach's Alpha for Student's Questionnaire

<table>
<thead>
<tr>
<th>SN</th>
<th>Section</th>
<th>Cronbach's $\alpha$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Self Esteem</td>
<td>.641</td>
</tr>
<tr>
<td>2</td>
<td>Social Wellbeing</td>
<td>.711</td>
</tr>
<tr>
<td>3</td>
<td>Student teacher relationship</td>
<td>.736</td>
</tr>
<tr>
<td>4</td>
<td>Students and friends</td>
<td>.736</td>
</tr>
<tr>
<td>5</td>
<td>Student Wellbeing</td>
<td>.786</td>
</tr>
</tbody>
</table>

Table 68. Cronbach's Alpha and Factor Analysis

<table>
<thead>
<tr>
<th>SN</th>
<th>Section</th>
<th>Cronbach’s $\alpha$</th>
<th>Factor Analysis</th>
<th>Cronbach’s $\alpha$</th>
<th>Factor Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Self esteem</td>
<td>.641</td>
<td>1 component</td>
<td>.641</td>
<td>1 component</td>
</tr>
<tr>
<td>2</td>
<td>Social wellbeing</td>
<td>.711</td>
<td>2 component</td>
<td>.766</td>
<td>1 component</td>
</tr>
<tr>
<td>3</td>
<td>Student teacher</td>
<td>.736</td>
<td>1 component</td>
<td>.736</td>
<td>1 component</td>
</tr>
<tr>
<td>4</td>
<td>Students and friends</td>
<td>.728</td>
<td>2 component</td>
<td>.728</td>
<td>2 component</td>
</tr>
<tr>
<td>5</td>
<td>Student wellbeing</td>
<td>.786</td>
<td></td>
<td>.775</td>
<td></td>
</tr>
</tbody>
</table>
**Student wellbeing**

The table below gives an overview of the general findings from the student questionnaire. For student self-esteem and social wellbeing a 5 point Likert scale was used with disagree (1) to agree (5). For student teacher relationship and student friend relationship a 3 point Likert scale was used with No (1), to Yes (3).

<table>
<thead>
<tr>
<th>Component</th>
<th>Mean</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Student self-esteem</td>
<td>3.96</td>
<td>.66</td>
<td>3.80</td>
<td>4.23</td>
</tr>
<tr>
<td>2. Social wellbeing</td>
<td>4.08</td>
<td>.75</td>
<td>3.88</td>
<td>4.33</td>
</tr>
<tr>
<td>3. Student teacher relationship</td>
<td>2.14</td>
<td>.45</td>
<td>2.03</td>
<td>2.25</td>
</tr>
<tr>
<td>4. Student Friend relationship</td>
<td>2.24</td>
<td>.44</td>
<td>2.03</td>
<td>2.48</td>
</tr>
<tr>
<td>5. Student wellbeing</td>
<td>2.57</td>
<td>.25</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Mean a - Range 1-5, higher values express stronger agreement
Mean b - Range 1-3, higher values express stronger agreement

**Student Self-esteem**

Student self-esteem means how happy the student is about himself/herself personally and in relation to the school. According to the student survey data, and considering the 4 statements below, the mean score for self-esteem is 3.96 on a 5 point Likert scale of 1 to 5 with a standard deviation of .655. That is, in general, the students are quite satisfied about themselves.

**Table 70. Student Self Esteem**

<table>
<thead>
<tr>
<th>Statement</th>
<th>N</th>
<th>Mean*</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>I am happy with myself as a student</td>
<td>429</td>
<td>4.23</td>
<td>.798</td>
</tr>
<tr>
<td>I am the kind of student I want to be</td>
<td>429</td>
<td>3.80</td>
<td>1.068</td>
</tr>
<tr>
<td>I feel OK about how good I am as a student</td>
<td>429</td>
<td>3.69</td>
<td>.991</td>
</tr>
<tr>
<td>I understand clearly what I have to do as a student</td>
<td>429</td>
<td>4.13</td>
<td>.895</td>
</tr>
</tbody>
</table>

Mean* - Range 1-5, higher values express stronger agreement

The mean scores for *I am happy with myself as a student* and *I understand clearly what I have to do as a student* are higher compared to the other 2 statements. That is, they feel more confident about themselves and what they have to do. However, when it comes to their personal achievements and aspirations, they are less confident.
Social Wellbeing
Social wellbeing measures how happy the students are with their school. The total mean score for social wellbeing is slightly above 4 (4.08) showing that in general students either agree or strongly agree with their wellbeing at school.

As for self-esteem, for the two general statements *I love my school* and *I am proud to be a student of this school*, the scores are higher compared to the other statements concerning their personal feelings.

Table 71. Student Social Wellbeing

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean*</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>I love my school</td>
<td>429</td>
<td>4.16</td>
<td>.975</td>
</tr>
<tr>
<td>I am proud to be a student of this school</td>
<td>429</td>
<td>4.33</td>
<td>.895</td>
</tr>
<tr>
<td>I feel safe in my school</td>
<td>429</td>
<td>3.88</td>
<td>1.055</td>
</tr>
<tr>
<td>I feel at ease in my school</td>
<td>429</td>
<td>3.93</td>
<td>.953</td>
</tr>
<tr>
<td>Social wellbeing</td>
<td>4.08</td>
<td></td>
<td>.745</td>
</tr>
</tbody>
</table>

Mean* - Range 1- 5, higher values express stronger agreement

Student Teacher Relationship
For this section, a 3 point Likert scale has been used, with: 1- No, 2- Sometimes and 3- Yes. The total mean score is 2.14 with a standard deviation of .445, which shows a relatively good student teacher relationship. We can say that there is a warm and friendly relationship between students and teachers and the students and teachers get along well with each other. However, for the statement *students and teachers talk and discuss outside class hours*, the mean score is lowest. This shows that interactions between students and teachers outside classes are not common.

Table 72. Student Teacher Relationship

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean*</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>There is a warm and friendly relationship between students and teachers</td>
<td>427</td>
<td>2.25</td>
<td>.537</td>
</tr>
<tr>
<td>Students and teachers get along well with each other</td>
<td>427</td>
<td>2.19</td>
<td>.586</td>
</tr>
<tr>
<td>Students feel close to and trust their teachers</td>
<td>427</td>
<td>2.15</td>
<td>.727</td>
</tr>
<tr>
<td>Students and teachers are happy to be together</td>
<td>427</td>
<td>2.09</td>
<td>.594</td>
</tr>
<tr>
<td>Students and teachers talk and discuss outside class hours</td>
<td>427</td>
<td>2.03</td>
<td>.725</td>
</tr>
<tr>
<td>Student teacher relationship</td>
<td>2.14</td>
<td></td>
<td>.445</td>
</tr>
</tbody>
</table>

Mean* - Range 1- 3, higher values express stronger agreement
**Student Friend relationship**

The mean score for student friend relationship is 2.24 on a 3 point Likert scale. This shows a good relationship among students in the school. In general, the students believe that there is a warm and friendly relationship and students get along well with each other. But when it comes to trust and respect among the students, the response is lower.

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean*</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students get along well</td>
<td>368</td>
<td>2.44</td>
<td>.602</td>
</tr>
<tr>
<td>with each other</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>There is a warm and</td>
<td>368</td>
<td>2.48</td>
<td>.599</td>
</tr>
<tr>
<td>friendly relationship</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>among students</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Students in my school</td>
<td>368</td>
<td>2.21</td>
<td>.642</td>
</tr>
<tr>
<td>help each other</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Students in my school</td>
<td>368</td>
<td>2.04</td>
<td>.678</td>
</tr>
<tr>
<td>respect one another</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Students in my school</td>
<td>368</td>
<td>2.03</td>
<td>.680</td>
</tr>
<tr>
<td>can count on each other</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student and friends</td>
<td>2.24</td>
<td>.444</td>
<td></td>
</tr>
</tbody>
</table>

Mean*- Range 1-3, higher values express stronger agreement

**Comparing the 8 schools for student wellbeing**

In this section a detailed analysis of the 8 schools under study has been carried out to find out whether the school has an impact on the student wellbeing.

**Response Rate**

The overall response rate for the 8 schools is 84.1%, which is relatively high. The only school with a very low response rate (35%) is school A. School E achieved a 100% response, that is all students returned their filled questionnaires. 4 schools, namely B, C, D and F achieved 95% response. The high response rate as shown in table 74 can be explained by the fact that questionnaires were given to students to fill in class and were returned on the same day.
Table 74. Students' Response Rate

<table>
<thead>
<tr>
<th>School</th>
<th>Number of questionnaires given</th>
<th>Number of questionnaires returned</th>
<th>Percentage response</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>A</td>
<td>60</td>
<td>21</td>
</tr>
<tr>
<td>2</td>
<td>B</td>
<td>65</td>
<td>62</td>
</tr>
<tr>
<td>3</td>
<td>C</td>
<td>65</td>
<td>62</td>
</tr>
<tr>
<td>4</td>
<td>D</td>
<td>75</td>
<td>71</td>
</tr>
<tr>
<td>5</td>
<td>E</td>
<td>60</td>
<td>60</td>
</tr>
<tr>
<td>6</td>
<td>F</td>
<td>60</td>
<td>40</td>
</tr>
<tr>
<td>7</td>
<td>G</td>
<td>65</td>
<td>62</td>
</tr>
<tr>
<td>8</td>
<td>H</td>
<td>60</td>
<td>51</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>510</td>
<td>429</td>
</tr>
</tbody>
</table>

**Gender**

60% of the respondents are boys and 40% are girls. The chart shows the distribution of boys and girls in the 8 schools. It is clearly shown that schools B, C and D are boys’ schools; A, G and F are girls’ schools and E and F are co-educational schools.

**Figure 15. Students' Gender**
**Student Wellbeing**

Table 75. Student Wellbeing for the 8 Schools

<table>
<thead>
<tr>
<th>Schools</th>
<th>MEAN SCORES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Student self-(^a)-esteem</td>
</tr>
<tr>
<td>A</td>
<td>4.07</td>
</tr>
<tr>
<td>B</td>
<td>3.94</td>
</tr>
<tr>
<td>C</td>
<td>3.75</td>
</tr>
<tr>
<td>D</td>
<td>3.80</td>
</tr>
<tr>
<td>E</td>
<td>4.18</td>
</tr>
<tr>
<td>F</td>
<td>4.21</td>
</tr>
<tr>
<td>G</td>
<td>4.16</td>
</tr>
<tr>
<td>H</td>
<td>3.75</td>
</tr>
<tr>
<td>Total</td>
<td>3.96</td>
</tr>
</tbody>
</table>

Mean \(^a\) - Range 1-5, higher values express stronger agreement

Mean \(^b\) - Range 1-3, higher values express stronger agreement

Table 74 gives a summary of all the mean scores for the 4 components of student wellbeing for the 8 schools under study as will be discussed in this section.

**Student Self-esteem**

According to the survey data, as shown in table 75, there is little difference between student self-esteem in the 8 schools. The standard deviation is also below one for all schools. However, schools A, E, F and G show slightly higher scores compared to schools C, D and H. This is also illustrated by the error plot *(refer to Annex 4)*.

Further data analysis was carried out by comparing the mean for each school using the one-way ANOVA. The significant value between the groups is \(.000 (> .05)\) therefore, there are significant differences between the schools. The Post Hoc test with Bonferroni is given in table 76.
Table 76. Student Self-esteem for the 8 Schools

<table>
<thead>
<tr>
<th>SCHOOL</th>
<th>Mean*</th>
<th>N</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>4.0714</td>
<td>21</td>
<td>.47528</td>
</tr>
<tr>
<td>B</td>
<td>3.9435</td>
<td>62</td>
<td>.54400</td>
</tr>
<tr>
<td>C</td>
<td>3.7500</td>
<td>62</td>
<td>.61571</td>
</tr>
<tr>
<td>D</td>
<td>3.7958</td>
<td>71</td>
<td>.80546</td>
</tr>
<tr>
<td>E</td>
<td>4.1750</td>
<td>60</td>
<td>.64490</td>
</tr>
<tr>
<td>F</td>
<td>4.2063</td>
<td>40</td>
<td>.56865</td>
</tr>
<tr>
<td>G</td>
<td>4.1613</td>
<td>62</td>
<td>.53961</td>
</tr>
<tr>
<td>H</td>
<td>3.7500</td>
<td>51</td>
<td>.67082</td>
</tr>
<tr>
<td>Total</td>
<td>3.9627</td>
<td>429</td>
<td>.65461</td>
</tr>
</tbody>
</table>

Mean*- Range 1-5, higher values express stronger agreement

Table 77. Post Hoc Test for Student Self-esteem

<table>
<thead>
<tr>
<th>Post Hoc (Bonferroni) – Significant values</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCHOOL</td>
</tr>
<tr>
<td>--------</td>
</tr>
<tr>
<td>C</td>
</tr>
<tr>
<td>H</td>
</tr>
<tr>
<td>O</td>
</tr>
<tr>
<td>O</td>
</tr>
<tr>
<td>H</td>
</tr>
</tbody>
</table>

* . The mean difference is significant at the .05 level

From these data, we can say that schools A and B are not significantly different from the other schools. Schools C, D and H are significantly different from schools E, F and G. Altogether; we can say that schools E, F and G have higher student self-esteem as compared to the other schools. Schools A and B are in the middle and students of schools C, D and H have lower self-esteem.

**Student Social Wellbeing**

The school with the highest student social wellbeing is H with a mean score of 4.39. The standard deviation of .44 shows minimum variance in the response. Schools A, B and D have almost the same mean score (4.1). Similarly, schools C, E and G have almost the same mean score and they are lower down the list. The same can be observed in the error plot (refer to Annex4).
Table 78. Student Social Wellbeing for the 8 Schools

<table>
<thead>
<tr>
<th>School</th>
<th>Mean</th>
<th>N</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>4.1071</td>
<td>21</td>
<td>.55097</td>
</tr>
<tr>
<td>B</td>
<td>4.1492</td>
<td>62</td>
<td>.72494</td>
</tr>
<tr>
<td>C</td>
<td>3.9315</td>
<td>62</td>
<td>.81252</td>
</tr>
<tr>
<td>D</td>
<td>4.1479</td>
<td>71</td>
<td>.74830</td>
</tr>
<tr>
<td>E</td>
<td>3.9750</td>
<td>60</td>
<td>.79950</td>
</tr>
<tr>
<td>F</td>
<td>4.0625</td>
<td>40</td>
<td>.72446</td>
</tr>
<tr>
<td>G</td>
<td>3.9073</td>
<td>62</td>
<td>.83621</td>
</tr>
<tr>
<td>H</td>
<td>4.3873</td>
<td>51</td>
<td>.43679</td>
</tr>
<tr>
<td>Total</td>
<td>4.0763</td>
<td>429</td>
<td>.74463</td>
</tr>
</tbody>
</table>

Mean*: Range 1-5, higher values express stronger agreement

To test for significant differences, the ANOVA was carried out and a significant value of .017 (<.05) shows that there are significant differences between the schools for student social wellbeing. Post Hoc test reveals that the only significant difference is between school H and schools C and G. The other schools are not significantly different.

Therefore, based on the survey data, we can conclude that school H is highest in terms of student social wellbeing, which is followed closely by the other schools, except for schools C and G which exhibit lower student social wellbeing.

Table 79. Post Hoc Test for Student Social Wellbeing

<table>
<thead>
<tr>
<th>Post Hoc (Bonferroni) – Significant values</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCHOOL</td>
</tr>
<tr>
<td>S</td>
</tr>
<tr>
<td>----</td>
</tr>
<tr>
<td>C</td>
</tr>
<tr>
<td>H</td>
</tr>
<tr>
<td>O</td>
</tr>
<tr>
<td>L</td>
</tr>
<tr>
<td>E</td>
</tr>
<tr>
<td>F</td>
</tr>
<tr>
<td>G</td>
</tr>
<tr>
<td>H</td>
</tr>
</tbody>
</table>

*. The mean difference is significant at the .05 level

Student Teacher Relationship

Student teacher relationship is an important aspect of the school as it is directly linked to the PLC. On the 3 point Likert scale used, all schools scored above 2 except school C. Of the 8 schools surveyed, school E scored the maximum (2.3), followed closely by schools A and H with mean scores of 2.26. The error plot shows that School C is lower down compared to the other 7 schools (refer to Annex 4).
Table 80. Student Teacher Relationship for the 8 Schools

<table>
<thead>
<tr>
<th>School</th>
<th>Mean*</th>
<th>N</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>2.2667</td>
<td>21</td>
<td>.25560</td>
</tr>
<tr>
<td>B</td>
<td>2.2000</td>
<td>61</td>
<td>.37771</td>
</tr>
<tr>
<td>C</td>
<td>1.8387</td>
<td>62</td>
<td>.44329</td>
</tr>
<tr>
<td>D</td>
<td>2.1859</td>
<td>71</td>
<td>.45270</td>
</tr>
<tr>
<td>E</td>
<td>2.3233</td>
<td>60</td>
<td>.44962</td>
</tr>
<tr>
<td>F</td>
<td>2.0900</td>
<td>40</td>
<td>.40749</td>
</tr>
<tr>
<td>G</td>
<td>2.0645</td>
<td>62</td>
<td>.44762</td>
</tr>
<tr>
<td>H</td>
<td>2.2560</td>
<td>50</td>
<td>.40816</td>
</tr>
<tr>
<td>Total</td>
<td>2.1424</td>
<td>427</td>
<td>.44527</td>
</tr>
</tbody>
</table>

Mean*. Range 1-3, higher values express stronger agreement

The one-way ANOVA was carried out. The significant value of .000 (< .05) shows that there are significant differences between the schools. The Post Hoc test shows that the differences are significant between school C and schools A, B, D, E and H, but not significant between school C and schools F and G. School E is also significantly different from school G.

Table 81. Post Hoc Test for Student Teacher Relationship

<table>
<thead>
<tr>
<th>Post Hoc (Bonferroni) – Significant values</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCHOOL</td>
</tr>
<tr>
<td>--------</td>
</tr>
<tr>
<td>A</td>
</tr>
<tr>
<td>B</td>
</tr>
<tr>
<td>C</td>
</tr>
<tr>
<td>D</td>
</tr>
<tr>
<td>E</td>
</tr>
<tr>
<td>F</td>
</tr>
<tr>
<td>G</td>
</tr>
<tr>
<td>H</td>
</tr>
</tbody>
</table>

*. The mean difference is significant at the .05 level

Hence, we can conclude that school E shows greatest student teacher relationship. Schools A, B, D and H also have good student teacher relationship. On the other hand, schools C, F and G are lower down with school C at the lowest position.
Student Friend Relationship
For student and friends, the mean scores for all 8 schools are very close together, with the highest score for school D (2.4) and the lowest score for school G (2.17). It is to be noted that only 12 students of school D replied to questions in this section. On the error plot, there is no marked difference to be noted, except that the quartile range for schools A and D are much larger.

Table 82. Student Friend Relationship

<table>
<thead>
<tr>
<th>School</th>
<th>Mean*</th>
<th>N</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>2.2857</td>
<td>21</td>
<td>.56770</td>
</tr>
<tr>
<td>B</td>
<td>2.1803</td>
<td>61</td>
<td>.34584</td>
</tr>
<tr>
<td>C</td>
<td>2.3032</td>
<td>62</td>
<td>.39628</td>
</tr>
<tr>
<td>D</td>
<td>2.4000</td>
<td>12</td>
<td>.39080</td>
</tr>
<tr>
<td>E</td>
<td>2.2333</td>
<td>60</td>
<td>.54514</td>
</tr>
<tr>
<td>F</td>
<td>2.2550</td>
<td>40</td>
<td>.42242</td>
</tr>
<tr>
<td>G</td>
<td>2.1742</td>
<td>62</td>
<td>.43228</td>
</tr>
<tr>
<td>H</td>
<td>2.2600</td>
<td>50</td>
<td>.46114</td>
</tr>
<tr>
<td>Total</td>
<td>2.2408</td>
<td>368</td>
<td>.44388</td>
</tr>
</tbody>
</table>

*Mean*: Range 1-3, higher values express stronger agreement

The one-way ANOVA gave a significant value of .583 (> .05) hence, there is no significant difference between the 8 schools for student friend relationship.

Student Wellbeing
All the 4 elements have been combined together to give a measure of student wellbeing. Table 82 shows the mean scores for the 8 schools. They are not very different. Moreover, the standard deviations are low showing little variation in the response.

Table 83. Student Wellbeing for the 8 Schools

<table>
<thead>
<tr>
<th>School</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>2.6369</td>
<td>.22602</td>
</tr>
<tr>
<td>B</td>
<td>2.5379</td>
<td>.20347</td>
</tr>
<tr>
<td>C</td>
<td>2.4907</td>
<td>.26453</td>
</tr>
<tr>
<td>D</td>
<td>2.4948</td>
<td>.17793</td>
</tr>
<tr>
<td>E</td>
<td>2.6904</td>
<td>.26785</td>
</tr>
<tr>
<td>F</td>
<td>2.6303</td>
<td>.25415</td>
</tr>
<tr>
<td>G</td>
<td>2.5984</td>
<td>.21802</td>
</tr>
<tr>
<td>H</td>
<td>2.4638</td>
<td>.23638</td>
</tr>
<tr>
<td>Total</td>
<td>2.5692</td>
<td>.24901</td>
</tr>
</tbody>
</table>
On the error plot (*refer to Annex 4*), all schools are almost on the same line, except school C. The ANOVA gave a significant value of .000 (< .05) showing that there are significant differences between the schools. Hence the Post Hoc Test was carried out.

Table 84. Post Hoc Test for Student Wellbeing

<table>
<thead>
<tr>
<th>Post Hoc (Bonferroni) – Significant values</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCHOOL</td>
</tr>
<tr>
<td>C</td>
</tr>
<tr>
<td>H</td>
</tr>
<tr>
<td>O</td>
</tr>
<tr>
<td>O</td>
</tr>
<tr>
<td>L</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>G</td>
</tr>
</tbody>
</table>
| H | *. The mean difference is significant at the .05 level

The Post Hoc test shows that school E is significantly different from B, C and H. F is also significantly different from H.

Table 85. Summary of Findings on Student Wellbeing

<table>
<thead>
<tr>
<th>Mean Score</th>
<th>School with Minimum Score</th>
<th>School with Maximum Score</th>
<th>Schools with higher mean scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student self-esteem</td>
<td>3.96</td>
<td>C&amp;H (3.75)</td>
<td>F(4.2)</td>
</tr>
<tr>
<td>Social wellbeing</td>
<td>4.08</td>
<td>G (3.90)</td>
<td>H (4.39)</td>
</tr>
<tr>
<td>Student teacher relationship</td>
<td>2.14</td>
<td>C (1.8)</td>
<td>E (2.3)</td>
</tr>
<tr>
<td>Student and friends</td>
<td>2.24</td>
<td>G (2.17)</td>
<td>A (2.28)</td>
</tr>
<tr>
<td>Student wellbeing</td>
<td>2.57</td>
<td>H (2.46)</td>
<td>E (2.69)</td>
</tr>
</tbody>
</table>

Student wellbeing consisting of the 4 elements (self-esteem, social wellbeing, student teacher relationship and student friend relationship) shows no specific trend in the 8 schools under study. Table 84 shows a summary of all the findings concerning student wellbeing. It is to be noted that there are no general patterns in the 8 schools under study. Some schools have scored higher in one section and lower in another section. Some schools show greater self-esteem, social wellbeing and student teacher relationship. These include all school types. Therefore, based on these findings, a general conclusion about student wellbeing cannot be drawn.
Comparing Low input and high input schools

Table 86. Student Wellbeing in Low Input and High Input Schools

<table>
<thead>
<tr>
<th></th>
<th>Low Input</th>
<th>High Input</th>
<th>Significant value for ANOVA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self esteem</td>
<td>4.17</td>
<td>3.81</td>
<td>.000*</td>
</tr>
<tr>
<td>Social wellbeing</td>
<td>3.97</td>
<td>4.14</td>
<td>.031*</td>
</tr>
<tr>
<td>Student teacher relation</td>
<td>2.18</td>
<td>2.11</td>
<td>.151</td>
</tr>
<tr>
<td>Student and friends</td>
<td>2.22</td>
<td>2.26</td>
<td>.473</td>
</tr>
</tbody>
</table>

*Difference in the mean score is statistically significant

Table 86 shows the mean scores for low input and high input schools for the 4 elements of student wellbeing. There are differences in the mean scores between the low input and high input schools with regard to student self-esteem, social wellbeing, student teacher relationship and student friend relationship. Low input schools show greater student self-esteem and student teacher relationship compared to high input schools. On the other hand, high input schools show greater social wellbeing and slightly higher student friend relationship.

Further analysis using the one-way ANOVA shows significant differences ($p < .05$) only for self-esteem and social wellbeing. Hence, low input schools show greater student self-esteem and high input schools show greater student social wellbeing. There are no significant differences for student teacher relationship and student friend relationship.

Comparing State and Private schools

There are differences in the mean scores between state and private schools with regard to all 4 elements of student wellbeing: student self-esteem, social wellbeing, student teacher relationship and student friend relationship, but the differences are small. The one-way ANOVA shows significant differences for social wellbeing and student teacher relationship as shown in table 87.

Table 87. Student Wellbeing in State and Private Schools

<table>
<thead>
<tr>
<th></th>
<th>State Schools</th>
<th>Private Schools</th>
<th>Significant value for ANOVA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self esteem</td>
<td>3.90</td>
<td>4.01</td>
<td>.112</td>
</tr>
<tr>
<td>Social wellbeing</td>
<td>4.19</td>
<td>3.99</td>
<td>.006*</td>
</tr>
<tr>
<td>Student teacher relation</td>
<td>2.19</td>
<td>2.10</td>
<td>.041*</td>
</tr>
<tr>
<td>Student friend relation</td>
<td>2.28</td>
<td>2.22</td>
<td>.275</td>
</tr>
</tbody>
</table>

* Difference in the mean score is statistically significant

State schools show significantly greater student social wellbeing and student teacher relationship. The differences regarding self-esteem and student friend relationship are not significantly different.
The student survey measures the student wellbeing in terms of self-esteem, social wellbeing, student teacher relationship and student friend relationship. It is to give the idea of the emotional and social development of the students, then linking them to the school conditions.

In general, student self-esteem seems to be satisfactory, except that students are not very confident about their personal achievements. Students express their love and trust in their schools. There is a good student teacher relationship; however interactions outside classes are limited. There is also a friendly environment among students, although the element of trust is not really felt.

From the survey data, we cannot say that some schools in particular show greater or lesser student wellbeing as the scores vary for the different elements of student wellbeing. There is no general trend to be noted. However, we can say that the low input schools under study show greater student self-esteem and student teacher relationship. High input schools show greater social wellbeing and student friend relationship. State schools show greater social wellbeing and student teacher relationship as compared to private schools. On the other hand, school E which is a private low input school exhibits the highest student teacher relationship. When taken separately, the scores for each school are different and therefore, the results cannot be used to draw general conclusions about student wellbeing in the 8 secondary schools.

**Correlation between Professional Learning Community and Student Wellbeing**

In order to find out whether there is a correlation between PLC and student wellbeing, data from the 4 elements of the PLC from the educator’s questionnaire and data from the student questionnaire have been crossed analysed. 2-tailed Pearson correlation test has been carried out between the 4 elements of the PLC and the 4 components of student wellbeing. The \( r \) values obtained indicate the degree of correlation. The results are given in table 88.

<table>
<thead>
<tr>
<th></th>
<th>Shared vision and values</th>
<th>Focus on student learning</th>
<th>Collaboration</th>
<th>Continuous Improvement</th>
<th>PLC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self esteem</td>
<td>.134*</td>
<td>.207**</td>
<td>.267**</td>
<td>.215**</td>
<td>.250**</td>
</tr>
<tr>
<td>Social wellbeing</td>
<td>.148*</td>
<td>.095</td>
<td>.071</td>
<td>.068</td>
<td>.110</td>
</tr>
<tr>
<td>Student/teacher</td>
<td>.351**</td>
<td>.321**</td>
<td>.319**</td>
<td>.306**</td>
<td>.388**</td>
</tr>
<tr>
<td>relationship</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student/friend</td>
<td>-.186*</td>
<td>-.077</td>
<td>-.132</td>
<td>-.145*</td>
<td>-.170**</td>
</tr>
<tr>
<td>relationship</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student wellbeing</td>
<td>.288**</td>
<td>.320**</td>
<td>.320**</td>
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**. Correlation is significant at the 0.05 level (2-tailed), * . Correlation is significant at the 0.01 level (2-tailed)**
Based on the Pearson Correlation tests carried out between the 4 components of student wellbeing and the 4 elements of the PLC, it is found that there is a weak positive correlation between elements of the PLC and student teacher relationship, with $r$ values ranging from .306 (continuous improvement) to .388 (PLC as a whole). There is a weaker positive correlation between student self-esteem and elements of the PLC with $r$ values ranging from .134 (shared vision and values) to .267 (collaboration). The correlations between student social wellbeing and elements of the PLC are very weaker with $r$ values ranging from .068 to .148. The small negative $r$ values between student friend relationship and the elements of the PLC indicate no correlation.

These findings reveal that Professional Learning Community is associated with student teacher relationship. It can be said that teachers in a PLC relate better with students and the latter appreciate the efforts that their teachers do to help them. The PLC is also related to some extent to student self-esteem. However, there is little or no correlation with student social wellbeing and student friend relationship.

We tried to run regression analysis but the results were not consistent. The reason is that we imported the PLC mean scores in the student SPSS file and this gave only one value for each school. As there is loss of the variances, the results are not reliable. Therefore, OLS regression analysis was not performed.

To sum up the quantitative phase, we can say that the schools under study show a good level of collaboration and collective learning. School leadership comprising rectors, deputy rectors and heads of departments, is predominantly of the instructional type with less shared leadership. Instructional leadership seems to have a greater impact on the PLC. School structure is seen to have a greater effect on the PLC compared to school climate. School academic performance can be considered to be influenced by the PLC. Schools where there are greater levels of PLC tend to show better academic performance. On the other hand, student wellbeing is not directly influenced by the PLC. Some associations between student teacher relationship and the PLC do exist.

These inferences are valuable to situate the schools and to decide on the next phase of the study. Although we got some conclusive results, they cannot be generalized to all Mauritian secondary schools because of our small sample size. However, these results have helped us to decide on the qualitative phase. They have enabled us to select the two schools for the case study. In this
mixed methodology, the results of the quantitative study have been used for the selection of the two schools. The aim of the case study is to describe collaboration in two different settings, one with high level of collaboration and one with low level of collaboration.

4.2 Qualitative Analysis

The educator’s survey has provided data about the school leadership, school climate, school structure and elements of the PLC in general and in the 8 schools under study. According to these data, we can say that instructional leadership forms a major part of the leadership activities, followed by shared leadership in some schools. School structure seems to be problematic especially in some schools. Focus on student learning is an important aspect of the school and educators collaborate in order to improve performance and to create professional growth. In other words, even though the term PLC was not used and measured directly, its characteristics have been analysed and can be considered to be present in the 8 schools to varying degree.

On the other hand, the student survey explored the student wellbeing in relation to the school. Student wellbeing differs from one school to another. There are differences in the student self-esteem, social wellbeing, student teacher relationship and student friend relationship in the different schools. We cannot say that in some schools the student wellbeing is higher compared to others as there are no common trends in the four elements under measure.

For further investigation and in order to understand certain aspects which have not been revealed by the survey data, we will now discuss the findings from the qualitative analysis. Interviews of the rectors and 3 HODs of two schools will now be analysed.

The 2 schools have been selected based on certain specific criteria and using data obtained from the educator’s survey. The two main criteria for selection are: a low input school and the level of collaboration. The levels of collaboration in the 4 low input schools namely A, E, F and G have been assessed using the mean scores for the 4 elements of the PLC, as shown in table 89.

The choice of the two schools is important to compare two contrasting levels of PLC. The ideal situation would have been to take two schools which are statistically different; however this is not possible because all the four low input schools have a relatively high score for the PLC. So we had to choose the schools with the highest and lowest mean scores. School E has the highest
mean score for the PLC and School F has the lowest score for the PLC. School E is a private school and school F is a state school. Both schools are low input and co-educational. These two schools have been selected for the case study. These two different levels of the PLC would help us to compare the nature and extent of the PLC.

<table>
<thead>
<tr>
<th>Table 89. Comparing Collaborative Work in the 4 Low Input Schools</th>
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<tbody>
<tr>
<td>Elements of PLC</td>
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<tr>
<td>Shared vision and values</td>
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<tr>
<td>Focus on student learning</td>
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<tr>
<td>Collaboration and shared practices</td>
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<tr>
<td>Continuous improvement based on reflective inquiry</td>
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<tr>
<td>PLC</td>
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Mean* - Range 1- 5, higher values express stronger agreement

For the two selected schools E and F, interviews were carried out for the rector (Head of School) and three HODs. The interviews were audio taped and transcribed verbatim by an independent person. The transcripts were then analysed using QDA Miner, using the appropriate categories and codes as stated in chapter 3. Then, the codes were interpreted following as far as possible the same pattern as for the quantitative analysis: school leadership, school factors and elements of the PLC.

4.2.1 Leadership

Leadership patterns for school E and school F have been analysed in order to determine the predominant leadership styles. Based on the interview data, the leadership patterns have been categorized as instructional, transformational and shared. The school leadership can be essentially of one type or a blend of several patterns. However, the leadership patterns depend considerably on the rector’s personality and values. The type of leadership prevailing in the school influences all school conditions either directly or indirectly. School leadership impacts on the amount and nature of collaborative work, thus determining the presence and nature of the PLC. Instructional and shared leadership have been explored as they are directly linked to the PLC. Elements of transformational leadership have been added as they have been evoked during the interviews. Directive leadership has not been mentioned, but many examples given indicate
its strong presence. All these leadership patterns are important in defining the two leadership styles. Leadership characteristics of school E and school F have been discussed based on the interview data.

**Leadership at School F**

School F is a low input state secondary school with a relatively lower level of PLC. The leadership style would help us to understand how the school is functioning and the nature of the PLC.

During the interview, a lot has been said about instructions coming from the rector to the HODs for actions to be taken at the level of the departments. HOD Physics said “we needed to follow instructions given”. The rector talked about giving instructions, for example, in the implementation of co-teaching: “I did a power point presentation to my math department; I asked them whether they were interested. I gave them the various structures of co-teaching”. This clearly indicates that the instructions came from the rector.

Giving the sense of direction and instructions are indeed important to ensure that everyone knows exactly what to do. It is the basic role of the head of school to guarantee the proper functioning of the departments and the school at large.

The rector talked about how she had music and dance classes introduced for upper classes. She said, “I also fought to have music and dance classes for form 4 forms 5, lower and upper six as well”. It is a good initiative from the rector to give students the opportunity to continue with Music and Dance classes in upper forms. The decision and action are initiated by the rector.

HOD Math and English and the rector talked about the setting up of school committees. The rector reported: “I think while setting up committees, whenever there are some activities, I ensure that not the same people are in the committees”. School committees are an opportunity to delegate power and tasks. A group of educators from different departments work together towards certain specific goals; for example, disciplinary committee, pastoral care committee, exam committee… Each committee has a specific function and helps in one facet of the school life. The rector ensures that there are different educators in different committees; this is a way to involve maximum staff members. HOD English said “You have to delegate because it is impossible to do the whole thing”. This statement again relates to committees as delegation of
tasks. HOD Math mentioned “mainly she (the rector) will organize many committees” showing that decisions are made by the rector.

These statements about the setting up of school committees suggest the directing and supervising role of the rector without the delegation of power. Staff members are not involved in the decision making process and they execute tasks assigned to them as a team. This role of the rector is important for the good functioning of the school but is not related to instructional or shared leadership.

The rector introduced co-teaching at school with the idea of improving student performance. She explained how she facilitated the implementation of co-teaching:

> I did a few class observations. I talked to them about common lesson plans, for the class they are working together. I believe they worked marvellously well. The presentation on co-teaching gave a clear picture of what is expected from them. I think this is what created that collaboration, setting the tone, showing the vision, and co-teaching is important.

This illustrates the role of the rector as an instructional leader as she is guiding the instructional process. She explained about co-teaching to her staff members and supervised its implementation. The initiatives and guidance regarding co-teaching came from the rector. However, it is to be noted that she often uses the pronoun ‘I’ instead of ‘we’, which tends to show that the thinking process, decisions and planning emanate principally from the rector, with little involvement of the staff.

According to her, co-teaching has helped to promote collaboration, which can be correct but nothing has been mentioned the HODs. On the contrary, one HOD explained how this initiative was imposed on them without prior communication:

> We did not decide to do co-teaching, when we got our time table, we noticed that 2 teachers got the same class, we went to inquire as we thought it was a mistake, but then we were told that it was not a mistake but we need to do co-teaching.

It means the decision was taken by the rector and staff members were given instructions and guidance. They had no choice than to accept the decision and comply. So whatever has been said by the HODs and the rector tend to show that there is a top down model of leadership. Decisions and instructions come principally from the rector to the HODs and the educators. Therefore, we can say that the implementation of co-teaching illustrates instructional leadership. Moreover, the
HODs do not feel that they are part of the decision making process. As one HOD said, “The decision making is at the level of the rector.” and he bluntly stated:

There should be more collaboration with management. For example, they don't consult us before taking decisions. They just impose it on you. Perhaps things should change at the level of management; they should consult all of the teachers before taking a decision. This would be a good thing, taking everybody's advice before taking decisions.

These two statements further suggest a top down model of leadership. The HOD does not seem to appreciate the fact that all decisions come from the rector and they just have to abide by the instructions given. He used a very strong word “impose” which reflects his disagreement and wished that things were different. There seems to be an urgent need to involve staff members in the decision making process.

HOD Math mentioned the rector’s intervention “if something is not going well in the school” in order to show the rector’s concern about what is happening. This is important to ensure the smooth running of the school. The rector says:

When there is resistance I take time to explain, I take the time to show them why the system is like this and I am open to suggestions and advice. If they come with better solutions I will say why not give it a try.

This illustrates problem solving and how the rector tries to manage these difficult situations.

Another point raised by the HODs was communicating with HODs or chairpersons of committees. HOD English said that the rector relied a lot on the HODs and they met often to discuss about issues. HOD Math gave the example of how the rector communicates to the chairpersons when there is something wrong and how the chairpersons in turn pass on the message to the others for actions to be taken. This is another example of problem solving.

Moreover, one HOD attempts to illustrate distributed leadership at school. She says, “I have known her for about four years but it was distributed leadership. And everyone has his task to do. She was there guiding the chairpersons”. He mentioned distributed leadership but the example he gave did not illustrate distributed leadership. What he said is more about the supervising role of the rector. Hence, there are no interview data to suggest that the leadership is shared or distributed.

According to the interview data, there are indications of the rector managing instructional programs. The implementation of co-teaching has been a good opportunity for the rector to be
involved in the management of the instructional program. The rector was leading, supervising and evaluating the teaching and learning process during co-teaching. She assisted her staff members to develop the required skills and gave them the opportunity to collaborate. The rector was also well informed about the students’ performance and was doing her best to monitor student progress together with the HODs. These describe the rector as an instructional leader. However, there were no references made about defining school goals, or promoting a positive school learning climate as per Hallinger’s (2005) model of instructional leadership. Also, there are no interview data concerning transformational leadership; that is idealized influence, inspirational motivation, intellectual stimulation or individualized consideration as described by Judge & Bono (2000). Interview data show no evidence of shared leadership.

Hence, from these data, we can conclude that rector of school F is actively involved in supervising, managing and directing activities and projects for the school. She exhibits a strong directive leadership and some elements of instructional leadership. There is no indication of shared leadership.

**Leadership in School E**

School E is a low input private school with a relatively high level of PLC. The school management includes both the manager and the rector. The manager is the founder of the school and has been the rector for a very long time. The manager is very well respected by everyone and they all believe that they are working according to his vision. The rector performs all the duties as the school leader and the manager is present to advise and guide the rector and the HODs. Based on this vision, the rector gives the sense of direction and leads the school.

One of the rector’s roles is to give instructions to the HODs for implementation in the department. HOD Math of school E mentions “The rector gives the direction”, and “The rector gives instruction that is he wants such thing to happen”. He further adds “He [the rector] gives the instructions to the head and I am here to give the instructions to the staff”. This shows the directing role of the rector to ensure the proper functioning of the departments.

The rector talks about a reflective process before doing the strategic planning for the school. It involves literature review and input from the staff. This has been well elaborated by the rector. Firstly, he refers to what he has termed as ‘pilot strategies’, whereby he studied a number of researches on school effectiveness and school improvement. He mentions two references in
particular, namely “The Key Characteristics of Effective schools” by Peter Mortimore and ‘The Seven Habits of Highly Effective Teens” by Sean Covey. He also reads about the latest researches that were carried out in schools worldwide. Then, he tried to see how some strategies can be imported to his school context. He is well aware of the specificity of his school, and said that over the years, they have adapted certain strategies not only specific to Mauritius but specific to his school, being gender mixed in a rural area. He also mentions the contribution of his staff, “I would say that to achieve all of this without the collaborative spirit of my staff, we would not have reached this point”.

So the strategic planning is an informed process which involves prior studies and analysis. He then uses relevant data to prepare his school development plan. Two important things for him are: how to increase the effectiveness of the school and how to guide the students effectively; as he referred to these two main relevant literatures. There is reflection, experimentation and communication before the planning of the school development plan. The rector knows very well what he aspires for the school and tries to find the best strategies that are specific to his school context. In this way, he is defining the school mission. He talks about the input from his staff members and he believes that their contributions are crucial. This illustrates instructional leadership and involves the participation of the staff.

HOD English mentions seminars which are organized every end of year to reflect on the effectiveness of the school. He added, “Through a seminar, our rector prepares the latest things and the best practices, notes and ideas...” This has also been evoked by all HODs and rector of school E. As the rector pointed out,

> I usually do the workshop end of 3rd term, at the end of October/November. I have been doing it since November 1999. Each year we have a topic which I usually decide upon the title and I make it public in my last staff meeting so that they have at least 3 weeks to prepare for that. Usually it is about pedagogy, school improvement, teacher effectiveness, everything which concerns staff and student improvements.

The aim of the seminar is school improvement and school effectiveness. Again the rector shows how he engages his staff members in this improvement process. The theme for discussion is chosen by the rector probably based on the school’s needs. All staff members are given the opportunity to reflect on it and to prepare for the common discussions in the workshop. Therefore, all staff members are given the opportunity to question certain practices and to
provide their suggestions. This helps in *maintaining high visibility*, which is one requisite for instructional leadership (Hallinger, 2005).

According to HOD Physics, the rector seems to be always present and fully aware of what is happening in the school and he tries to give his help wherever needed. As he says “*The rector is very active and dynamic. He gives a proper monitoring*” and further adds,

*The rector is here to see to it that these decisions are being implemented. He knows very well that all decisions that are being taken, at times it will work correctly, at times it is not going to work that well. Even he does a reflective part.*

This shows that the rector is fully aware of the instructional program and attends to its demands. In this way, the rector is seen to carry out an important monitoring role in order to ensure that all the work is being done conveniently. If not, he tries to see how to bring about certain corrective measures. This role of *supervising and evaluating instructions* is essential in promoting school effectiveness and it reveals another aspect of instructional leadership.

The HODs have the feeling that their rector is instrumental in their development. He encourages them to innovate in their teaching methods and even help by providing relevant materials. As HOD Physics says,

*He encourages us to make use of multimedia like illustrations, movies, small clips from YouTube. We are being encouraged to use that in our practice. He even downloads it for us. He brings his part as well.*

He feels that the rector also acts as a facilitator. He says, “*He has his load of work as well. He is the one behind the curtain for us*”. This feeling promotes a pleasant and motivating working environment and shows how the rector promotes a *positive school learning climate*.

Moreover, according to HOD Math, the rector is well informed about his students’ needs. He stated “*The rector will say that such student has problem with such topic so the teacher who is free will sit with the pupil*”.

This shows that the rector is aware of the students’ learning process and guides the educators to provide relevant pedagogical support. This is another aspect of instructional leadership which is the *monitoring of student progress*. In doing so, he is well appreciated by his staff members as they are getting his support. Still, he is not satisfied and is always looking for ways to improve. As a future endeavour, he says that he will be embarking on further monitoring of the
departments in a more systematic way for improving teaching and learning. He says:

*I would be scrutinizing a bit more what is happening in departmental meetings. We are already doing it, but since it is on paper, it takes us some time, but with ICT coming in the picture, with a click of a button I will be getting all information at any time of the day, so I believe that I will be giving much more emphasis on what is happening in the department. This is going to be the focal point of the new phase of development.*

To be informed about what is happening in the departments is critical, as it is one way of *coordinating the curriculum* in order to ensure proper teaching and learning at the level of the departments. This seems to be a priority for the rector because he knows very well that improving student performance lies in the instructional processes. Knowing what is happening in the departmental meeting will help him to better guide the HODs.

*Collaboration* has been elaborated by all HODs and the rector of school E. Firstly the rector himself seems to be fully aware of the importance of working with a team. As he said:

*My belief is that there is no progress in the educational area if you don't have a team around you. It's not a one-man ship because you can come up with many ideas but if you don't have people who are going to be implementing them, if you don't have people to be checking whether the implementation is being done in the same way that it should be done. So if you don't have these kinds of people around you, there is no way that you will be seeing progress in the educational area.*

According to the rector, he works with his team and his strength is his staff, because they are the ones who will be working directly with the students. He trusts and relies on his educators to be always by his side. The statement shows the idea of teamwork and interdependency. It shows how each and every one should have certain skills to function as a team. Teamwork is therefore, a priority for the rector. This illustrates the notion of shared leadership.

Statements from all three HODs give the idea that shared leadership prevails in the school and is encouraged by the rector.

*Shared decision making* takes place in the school according to the HODs. HOD English states, “there is freedom given to us, our views are taken on board” and further adds, “*The head in our institution see to it that every member's views are valued*”. HOD Physics said, “*Anytime there are instructions coming up, it is like a discussion. You give your ideas and views then the decision is taken*”; and referring to the seminar, HOD Math reports “*We are going to put questions*. What can be done in such and such case then we start discussing department wise
then point forward what we discuss”. Hence, all HODs agree and give examples of how there is shared decision making and they are satisfied that their views are being taken into consideration.

Interdependency has also been evoked in two instances. Firstly, HOD physics mentions. “The rector, I will say, relies a lot on the heads of departments”. Secondly, HOD English talks about his department,

Collaboration comes with the head himself at the departmental level. Somebody can be new to the department. The person can have special ideas. We are not going to look down upon the person. That is the form of collaboration that we have here.

These two statements show that starting from the leader to the youngest staff member; everyone has its role to play and contributes to the team. Everyone seems to rely a lot on each other; this is an essential collaborative skill.

The end-of-year seminars seem to be well appreciated by all HODs. It is also seen as a means to strengthen their team through interaction, discussion and sharing. The rector initiates the process, involves everyone, ensures that everyone contributes and then uses the outcomes for the planning of the coming year. As HOD English stated,

The seminar is not a one-man show. We come with a theme for every academic year. We are informed in advance about that, whatever we have discussed are written on the white board, taken on board by the rector who prepares his strategies for the next academic year. In that way it is shared.

This shows that the seminar is planned and prepared in advance. The rector organizes and guides the process. Views and suggestions from staff members are taken on board for improvement plans.

HOD Math explains how the rector decides on a topic for discussion and prepares a brief together with the manager, and then there are discussions department wise. Everyone is free to question what has been said and finally all points are noted.

HOD Physics, on his side, explains how the rector selects one person from each department and gives them all the necessary support for their presentation during the seminar.

So, all three HODs show clearly how the seminars are being planned and organized with the participation of everyone. All staff members are free to give their views and they discuss on important issues and how to improve. This creates the spirit of oneness and promotes
collaboration at all levels. This is probably the strategy used by the rector to encourage teamwork and to focus on their common vision. It can be said to be a success as collaborative work and shared leadership seem to be well anchored in their school culture.

Transformational leadership depends a lot on the approach and values of the school leader. The rector, HOD English and Physics provide examples of transformational leadership behaviour. The rector said:

*I think first and foremost, I would be looking at staff empowerment as really important. What I mean is how we usually empower our staff by encouraging them to be subject specialist. And I think that this is something which is very important if we are referring to, if we want to promote student effectiveness or even student retention at the school so I believe that encouraging them and supporting them to be subject specialist, I would say is the driving force in the institution...*

According to him, to nurture his institution, he has to grow his people. He wants all his staff to have mastery over their subject, for him this is the way to promote his school’s effectiveness. He insists that all his teachers should be subject specialists. In this way, he promotes staff development and provides relevant opportunities. This statement shows how the rector promotes professional development as well as intellectual stimulation, which according to him is directly linked to school effectiveness and student welfare. These are indications of both transformational and instructional leadership.

Moreover, in a second statement, he explains how he actively listens to his staff. He said:

*One of the things I have enjoyed during these seminars is to listen to people talking. They may give you an advice which they may not have thought that it could be used in a particular way but then we listen to their ideas and can use of them somewhere. This way I have borrowed many ideas from my staff and I think this reflects today in the school achievement.*

Active listening is one important skill that leaders should possess. Not only he proves to be very much conscious about this important skill but he puts it into practice. As he says, many of the achievements have emerged from ideas coming from his staff. This is also a way to show recognition to his staff. When they feel that they have contributed to the success of the institution, they acquire the sense of belonging and commitment and of course they will be motivated to invest themselves even more.

He explained how he has tried over the years to get his staff with him to focus on the school goal. The aim is to put in all necessary effort in order to improve student performance because
This is the only way to be recognized at national level, both for the school and for the teachers. He stated that it has been a long process and all along, there have been consultations with his staff:

*It is a difficult process I have to admit that, but it was developed over the years, not over a single staff meeting. It was not even developed over a single year. I think the development was seen to be taking place, the day when they started to realize what the management is proposing to them. It does not only benefit the school management but it benefits the whole school.*

This statement describes how the rector tries to instil a conducive school climate which is aligned with the school vision. According to him, it has been a long and tedious process. Consultations with his staff have been ongoing and all along he has encouraged the collaborative spirit. He has been guiding his staff along the way to make them understand that they need to align their thoughts and actions to the benefit of the school and in the process, they will benefit as well. This can be said to be an example of transformational leadership by *intellectual stimulation*.

HOD English of school E reported:

*Our rector always comes up with new ideas which he shares with us. In a way we feel we are lucky because we are being updated on those changes, and with those ideas, at times also during the seminars, he gives us handouts which we read and try to implement. Then depending upon the classroom reality, certain good practices which may work in Europe may not necessarily work in the Mauritian context. We try to adapt and adjust to suit our needs.*

This statement shows that the rector is well appreciated for what he is doing. The staff members learn from him and he is seen as a role model. It is an opportunity for them to know what is happening elsewhere and how to adapt and use these good practices in their teaching and learning. This can be seen as *idealized influence*, which is another aspect of transformational leadership.

According to the HOD Math, the rector is not only involved in leadership roles but also helps to execute the work, that is, he is a team player. As he said, “*Sometime we can say that the rector does a lot of work for us, and then we do the rest*”. So there is the feeling that their leader accompanies them in their daily activities. This can be said to be an example of *inspirational motivation*, which further illustrates transformational leadership.

HOD English refers to the manager as “*enlightened and inspirational*” and says he is respected
by all. Even though he is above 70, he comes to work every day. He is like a role model and a mentor to the staff. He said that the manager “sets the example” and gives an example:

_He has been running classes on Saturdays and Sundays till late at night especially for students who have got problems in Mathematics and Additional Math. A teacher who is new to the profession, like in his field, he invites the teacher, when he is teaching his high flyers and highly motivated students to join in their class, to learn from him._

This shows the commitment and dedication of the manager to the school community. He goes beyond his capacity to help students, those who are doing very well as well as the slow learners, so that they can improve their performance. Inviting a new teacher to observe the class has a dual purpose; firstly, to learn and adopt some good teaching practices and secondly, to encourage him to do the same, that is coaching students for improving performance.

Not much has been said about the manager, as the focus was on the rector who is the school leader. But from the statement of HOD English we can say that the manager exhibits many characteristics of a transformational leader.

Therefore, based on what has been discussed, it can be said that the rector exhibits a large spectrum of leadership qualities. There is directive leadership and well defined instructional leadership. There are indications of shared leadership to some extent. The rector also exhibits transformational leadership traits.

It can be noted that there are marked differences in the two leadership patterns which are probably due to the school context. School F is a school with only about 10 years of existence and the present rector started the school. She manages and leads the school according to her style, skills and know-how. Based on the findings, we can conclude that the leadership patterns in school F are mostly directive and to some extent, instructional. School E is a well-established school with more than 50 years of existence. There is a strong leadership working in a systematic way comprising of the manager and the rector. The rector is well aware of his school’s needs and uses theory and practice (praxis) to improve the school. According to the interview data, the rector shows directive, instructional, shared and transformational leadership traits. There seem to be an organized and systematic process, whereby everyone is well informed about the school mission and the school culture.
Table 90. Leadership in Schools E and F

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<th>Leadership Style</th>
<th>Indicators</th>
<th>School F</th>
<th>School E</th>
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<tr>
<td><strong>Directive</strong></td>
<td>Decision making</td>
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<td></td>
<td>Instructing</td>
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<td></td>
<td>Directing</td>
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<td>√</td>
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<tr>
<td><strong>Instructional</strong></td>
<td>Defining School mission</td>
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<td>Managing Instructional program</td>
<td>Supervising and Evaluating Instructions</td>
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<td>Coordinating the curriculum</td>
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<td>Monitoring student progress</td>
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<td></td>
<td>Promote a positive school learning climate</td>
<td>Protecting instructional time</td>
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<td>Promoting Professional Development</td>
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<td>Maintaining high visibility</td>
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<td>Providing incentives for teachers</td>
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<td>√</td>
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<tr>
<td></td>
<td>Providing incentives for learning</td>
<td></td>
<td>√</td>
</tr>
<tr>
<td><strong>Transformational</strong></td>
<td>Idealized influence</td>
<td></td>
<td>√</td>
</tr>
<tr>
<td></td>
<td>Inspirational motivation</td>
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<tr>
<td></td>
<td>Intellectual stimulation</td>
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</tr>
<tr>
<td></td>
<td>Individualized consideration</td>
<td></td>
<td>√</td>
</tr>
<tr>
<td><strong>Shared/ Distributed</strong></td>
<td>Shared vision and values</td>
<td></td>
<td>√</td>
</tr>
<tr>
<td></td>
<td>Shared decision making</td>
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<td>√</td>
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<tr>
<td></td>
<td>Leadership as a collective entity</td>
<td></td>
<td>√</td>
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<tr>
<td></td>
<td>Empowering teachers</td>
<td></td>
<td>√</td>
</tr>
<tr>
<td></td>
<td>Collaboration and collegiality</td>
<td></td>
<td>√</td>
</tr>
</tbody>
</table>

Table 90 summarizes the leadership traits of the rectors of school E and school F based on the interview data. There is no right formula to lead a school effectively; a lot depends on the school context and the leader. But according to research, there are some leadership styles which have proved to be linked to the formation and development of PLCs, the two main ones are instructional and shared leadership.

### 4.2.2. School culture

The term **school culture** generally refers to the beliefs, perceptions, relationships, attitudes, and written and unwritten rules that shape and influence every aspect of how a school functions. Each school has a specific culture depending on the interactions of the above mentioned factors. School culture is very tacit, certain things can be said, but it is mostly felt. It cannot be changed easily and it directly affects the working of the PLC.
School Culture in School F

HODs of school F talked about their collaborative culture. According to the rector and the HODs, initiatives are taken at departmental level and school level to promote this collaborative culture.

HOD English talks about how they all pull their efforts together to help each other and encourage all new staff members to do same. According to HOD Math, collaboration is promoted at the level of each department and group which finally encompasses the whole school into a collaborative culture. She says:

I think that collaborative work does not start only in one department; I think it starts within each department and the management also, the staff and non-teaching staff must work together for better collaborative culture in the school.

HOD Physics explains how they should all be open-minded and help each other. He warns, “It is better to work in collaboration; the work goes on more smoothly. If we do not get along well with our colleagues, it will be difficult to share the classes”. So, according to him, being able to collaborate is essential for the smooth running of his department.

These reflections transmit the message that ‘At school F, we believe that collaboration is essential and we concentrate our effort to make it happen!’ In the departments the collaborative spirit is very much present and it acts as a lever to enhance their effectiveness.

The same collaboration culture has been expressed at the level of the school. One of the aims of organizing activities at school level is to promote collaboration among all staff as HOD English illustrated: “We see this collaboration when we organize the activities, for example, we had fund raising and blood donations, the whole school is going to participate”. Rector of school F also refers to school activities as an opportunity to collaborate and to work for the whole school community. She adds:

We had a big science exhibition, really huge and with a few science teachers it would have been difficult to organize such an event. I stressed again on the culture. I made them realize it's not for their department they are working but it's for the school.

So the activities are organized with the participation of everyone irrespective of their departments and they work collaboratively. The rector guides the whole process and ensures that everyone brings their contribution. According to her, trust in the school management is a

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prerequisite for collaboration. She said “It's a matter of trust as well. You trust and delegate a work. Then teachers feel, you trust their capabilities, so, trust is very important”.

Moreover, according to her, there are two important factors that influence school culture, namely interpersonal relationships and communication and the school leader plays an important role:

\[\text{I strongly believe that the culture of any organization, it comes from the head of school, head of the department; it's all a matter of culture. It's a matter of communication, how people interpret what you are communicating, it's about interpersonal relationship.} \]

Indeed, the interpersonal relationships are indicative of the school culture. Being able to rely on or to trust a colleague determines the kind of working relationships that prevail.

**School culture in school E**

The collaborative culture is also a very important feature in school E. Collaboration at the level of the department has been evoked by HOD Physics. He talks about the friendly and open-minded atmosphere that prevails in his department, which enables everyone to interact, share and learn from each other. According to him, the advantage they have is the positive attitude of all members of his department. This indicates that the collaborative culture indeed exists in the department.

From some of the reports, we can say that the spirit of oneness is promoted and is indeed part of the school culture. The rector said:

\[\text{The idea is to empower them to trust their colleagues and to allow them to think that they are part of the family. I think we need all of these if you really want to make collaborative progress in a school.} \]

This shows that the school management really puts in the effort to develop the required interpersonal skills for working together and to feel that they are all part of a family, hence aligning their thoughts and actions. The idea of being like a family has also been evoked by HOD Physics:

\[\text{I must say here right from the beginning, when you come to work here at 'school E', it is like you are in a 'school E' community. We function like this. So everything has to be done collaboratively among all the members.} \]

This clearly indicates the collaborative culture that exists there. It is clear from the very beginning for everyone coming to work at school E that they need to work together.

Furthermore, HOD English claims, “We have our own specificity. We operate very differently
from other institutions”. This statement indicates that they have a specific school culture which is not the same as in other schools. The same feeling is conveyed by HOD Physics when he says “This is why we are here, we are happy”.

Another common belief in school E is that they must put in all their effort for improving student performance. As the rector reports, “We are here to support hard working learners. I think that this is the mission of this institution, and it is ingrained in our school culture. Let's hope that it works this way”. The rector seems to be very clear about this and wants all his staff to do the same.

Focusing on improving student performance has also been treated in the school vision and values. It seems to be an important mission of the school. The rector and the HODs refer to the focus on student learning on many occasions and they are working to this end.

The rector seems to be putting in a lot of effort to promote the culture of continuously improving student performance based on collaboration. According to him, the foundation of this culture has been a gradual process developed over a number of years. He refers to this as an “iterative process” which means a summative process taking place over a number of years. He explained and negotiated with his staff in order to adopt this vision. As he says, something was proposed, but the staff did not believe. Then, because of the good results achieved by the students, there was a gradual shift in perception and finally they were all satisfied. As he says:

I find it was a dual relationship. It means this idea of collaboration is a success. That is the idea of enjoying success and of course becoming socially recognized. So I think that teachers realize that now they are becoming more valuable socially. I think that this is something very important.

So there was a lot of experimenting and hypothesizing before finally accepting this mutual benefit. They are all contributing to the success and they are self-satisfied. The good reputation of the school reflects the good work they are doing. Hence, now it is a general belief and everyone is convinced and accepts it.

Moreover, the rector mentions the importance of trust between the staff and the management. He says that the staff members came to understand that the welfare of the school is linked to their personal welfare.

Both schools have their own specific culture; based on their experiences and their school contexts. Although both schools enjoy a collaborative culture, their approaches are different. The
rector and HODs of school F are convinced that the collaborative culture is important, but there is more of cooperation that is working together to carry out activities and projects for the school and the department. In school E, there seems to be a collaborative culture embedded in the school system and focused on improving students’ academic results. There are some collaborative processes which lead to collective learning. We need to be cautious about the meaning of collaboration in connection with the PLC which leads to collective learning. What has been described as collaboration in both schools is essentially about cooperation. Collaboration leading to collective learning and continuous improvement is sparse and is found to some extent in school E.

4.2.3 School Structure – Facilities, Constraints and Improvement
School structure directly influences the teaching and learning process. Facilities and constraints are the two sides of the same coin; that is saying one thing determines the other. Some valuable indications have been given on improving the school structure as well. So, taking all these three together: facilities, constraints and improvements; a realistic picture of the school structure can be obtained.

**School structure in School F**
In school F there seems to be many issues concerning the school structure. The rector and HODs did not refer to any facilities offered at school; on the contrary, they mentioned several constraints.

Time is considered as a major constraint. According to HOD English, meetings cannot be held for a long time as students will be left unattended. Departmental meetings are held during recess in order not to compromise with the teaching time. The same has been said by HOD Math as there are no specific time slots provided on the time table for departmental meetings. The rector confirms this by saying, “There was no special arrangement made as such, it will be difficult to satisfy everybody”. Official departmental meetings are held during the educators’ free time.

HOD Math talks about a heavy work load. She reports that on top of conducting classes, there are other duties to attend to.

She also says that ICT facilities exist but is problematic. She explains that they “need to move the whole class to the audio visual room, to make all students move there, 15 minutes will be over”.

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Here the issue is not a lack of ICT facilities but their management and use due to time constraint.

Rector of school F considers the transfer of educators as another major constraint. She said that after having worked with and trained educators over a number of years, they get transferred. This means she has to start all over again.

HODs and the rector would like to see many improvements in the school. Firstly concerning the teaching materials and resources, HOD Math claims,

\[
\text{We are moving into a technological world, so we need to get good internet connections and the ICT tools. If we continue with talk and blackboard, it will be like we are still using the old methods of teaching. I think this will be very helpful.}
\]

This statement indicates that they are still using traditional teaching methods and they are aware that they need to include innovative teaching strategies. Latest technologies will surely promote teaching and learning, this is one way, the HODs want to see changes in school F.

HOD Physics complains about the long bureaucratic procedures for obtaining basic laboratory equipment and materials. He says that for two years he did not receive any required materials and adds “\text{This year I have received only some glass prisms and resistors. We do not get the apparatuses that we require}”. So, there seems to be a big problem for obtaining basic requirements for practical sessions. He would like to see many changes in this respect so that he can carry out the work satisfactorily.

The rector passionately talks about the infrastructural improvements that she wishes for the school, she says “\text{we fought a lot for the Design and Technology block, Music and Dance block; my dream was to complete the school with the football ground, and gymnasium}”. The rector started the school with the existing infrastructure which was inadequate. Gradually, there have been some improvements which according to her have not been sufficient and she did her best to make things move quickly. The Design and Technology block and the Music and Dance block are now present. Improving further on the infrastructure includes the coming of the gymnasium and football ground. This problem of lack of school infrastructure has also been evoked by HOD Physics. As he said, “\text{If management wants to have good level of learning, we need to have good infrastructure}”. This clearly means that the infrastructure is seen as inadequate and needs to be improved.
School Structure in School E

In school E, the rector and HODs talk about facilities as well as constraints. According to what is reported by the HODs, request for teaching materials, resources and equipment do not seem to be a problem in school E. HOD Math says that the school management provides them with all the resources they need. Whenever they need something, they report to the management and they get what they want. HOD Physics also supports this view and further shows how they get the support of the management in this respect. He says, “If there is a new apparatus that we need in the lab, I can look for it; they just get it for us. Anything we need, we do get it”. So, according to him, he gets the latest apparatuses and this is very useful in improving the teaching methods and in promoting student learning. HOD Physics further explains how the rector buys books, latest publications and test papers which he keeps in the lab for everyone to use. This is also another valuable pedagogical support and a facility for them to work collaboratively in the lab.

Concerning the time allocated for departmental meetings, the rector admits that it is not planned on the time table. He said

\begin{quote}
They don't have it on their time table unfortunately. But I usually advise them to do it once every fortnight. It doesn't need to be lengthy departmental meeting. It can be 5 min to 10 min during their teaching time.
\end{quote}

So it is clear that educators are not given official time for their departmental meetings. They are asked to have departmental meetings every fortnight but in their own free time. Also according to the rector, the meeting can be for 5 to 10 minutes, which is probably enough to settle some urgent issues but not for team learning and sharing of good practices.

On the other hand, HOD Math reports that they have one period on their time table. Probably, this is the only period when all the educators are free at the same time. This means that they have the possibility to meet every week to discuss and share their views and concerns. This surely helps in promoting collaboration in the departments.

So in general, time for departmental meetings needs to be planned by the HOD, based on their free time, if they want to have a fruitful and collaborative session.

In school E time is considered to be a major constraint as well. HOD Physics clearly states, “We have time constraint this is where the problem comes from!” HOD Math complains that they do not have time to think about other things. The rector is also aware of the time constraint; he has
been informed by his HODs that some discussions cannot take place because “they don't have much time to do that”. Hence, time is indeed a major obstacle which surely impedes on collaborative efforts.

A heavy work load is another constraint according to the HODs and the rector. HOD Math seems to be overworked with all his duties. As he says, “we have a lot of work to do here. In terms of preparation, correction and it is bulky”, and further adds, “If we decrease the work load I think a lot can be done about collaboration.” This shows that the HODs and educators have a lot to do and this is probably what limits the amount of formal collaboration in the department. Hence, there is the possibility to improve formal collaboration if the work load is decreased.

Another indication that the educators are overloaded came from HOD Math. He expressed his concerns about some additional work which may come from the rector. No one is willing to do the work, not because they do not want but because they already have a lot to do. The HOD has to get things done by any means, so he tries to convince one or few educators to do it together. This can be an opportunity to collaborate as well.

Another constraint which impact on collaboration is the student/teacher ratio as it adds to the duties and work load of the educators. HOD Math reports that they have about 35 students in a class; it means that class management is more demanding and giving individual attention to all students is a real challenge.

The rector of school E is well aware of and agrees to the fact that educators have a heavy work load. He reports:

> When we work on the timetable we have to respect certain criteria, for example, teachers should be working 32 periods with at least 32 to 40 students in the class so I would believe that these two are important. I would consider them as a handicap to effective collaborative work being done in a school.

In this statement, he talks about two important things: the number of classes per week and the student/teacher ratio. These criteria are set by the higher authorities and need to be respected. So it is mandatory for an educator to work for 32 periods per week, this is already a lot of work. On top of that with 32 to 40 students per class, it is indeed very challenging. The rector does not seem to be satisfied with these set criteria and he is convinced that if the work load is decreased, there would be more effective collaboration. It is to be noted that this is a constraint in all Mauritian secondary schools.
Rector of school E proposes that educators should be given less teaching load and other responsibilities, which according to him would be a stepping stone in promoting effective collaboration at school. Indeed, they would have more time and opportunities to discuss and work together. That is there would be more of sharing and reflection on their practices leading to continuous improvement.

He also proposes to reduce the student/teacher ratio, which is truly legitimate. It is aligned with their vision and values of focusing on student learning. He says that educators would have more time to devote to the monitoring of students’ learning. Educators would be better able to give individual attention to students, to analyse their performance and to bring about corrective measures.

HOD Math says that it is one of his duties to observe his colleagues and provide feedback, but he is not doing it, because of the heavy work load. So decreasing the work load would enable him to do so. He believes that it is a good initiative for sharing and learning. This is an important aspect of collaboration for the promotion of the PLC. He also proposes to have a Math lab, which according to him would promote student learning.

An area which is rapidly changing and needs continual improvement is ICT. HOD Math talks about getting the relevant software that will help them improve their practices: teaching and analysis. The rector also talks about getting the ICT tools that will help him to better monitor what is happening at the level of the department.

Concerning the infrastructure in school E, no shortcomings have been mentioned, but rather how the existing one has to be updated in order to satisfy the growing needs of the school. Most of the proposals made are linked to the promotion of effective collaboration for improving student learning.

According to HOD Math, the educators seem to appreciate the way in which the staffrooms are planned as it facilitates informal exchanges among colleagues of the same department. The rector also seems to be sensitive to this issue and proposed future improvements in the staffroom.

He admits that this initiative dated some five years back and needs to be further improved due to increase in the number of staff and in terms of ICT facilities. He says “it [the staffroom] will be in the centre of collaborative work and continual professional development”. This is a good
initiative as the rector is thinking in terms of staff development and capacity building. According to him, this will be a reality in the year 2017.

There seems to be major forthcoming infrastructural improvements which the rector conveys very passionately. He says “We will be seeing a new ‘school E’ emerging in 24 months, new infrastructure, new facilities, irrespective of the requirements of PSSA”.

So there are new improvement plans for the school. Usually the PSSA (Private Secondary School Authority) has a set of minimum criteria for a secondary school to operate. The rector’s aim is to go far beyond these minimum criteria and he wants the best for his school. He talks about the extension of the library to provide silent study corners for students, this is one way to promote student learning. He also talks about redesigning the school environment to adapt it to the needs of the students and staff. HOD English talks about creating more space and the “setting up of classrooms which will promote collaborative learning”. He further explains about the new class settings with students sitting in groups around tables instead of all students facing the blackboard due to lack of space.

4.2.4. Professional Learning Community

Professional Learning Community (PLC) is a collaborative learning process. Teachers meet regularly and work together to sharpen their teaching and to improve pedagogical practices. The ultimate aim of the PLC is to improve student learning. The PLC may have different shades of interpretation in different school contexts, but there appears to be broad international consensus on its nature. Hence, in the theoretical model, all the features of the PLC have been considered and they have been classified into three main elements which together form the PLC. The three elements of the PLC are: Shared vision and values focusing on student learning; Collaboration: collective learning and shared personal practices; and Continuous improvement based on reflective inquiry. These three elements are interconnected and directly influence one another. Analysis of the interview data has been done according to these three components in order to determine the nature of the PLC in each school.

One of the objectives of this study is to find out whether Mauritian secondary schools are working as PLCs. The concept of the PLC is not commonly used in the Mauritian context. However, its characteristics in terms of the 3 elements have been measured and will determine the existence and level of the PLC in the two schools.
**Professional Learning Community in School F**

The interview data will help us to understand how the school is functioning and will determine whether we can say that teachers are working together as a PLC. Findings regarding the 3 elements of the PLC are described here.

**Shared vision and values focusing on student learning**

The rector and HODs of school F did not elaborate on their school vision. However, according to some interview data, we can say that the common interest of the rector and all HODS is to improve the academic performance of students. All HODs and the rector talked about improving performance by conducting remedial classes. This shows that they are focusing on student learning.

Concerning shared values focusing on student learning, there are no relevant interview data to this effect. HOD Math explains how she encourages members of her department to share and work together, showing the value of collaboration.

Although shared vision and values focusing on student learning have not been expressed, there are many initiatives from the rector and the HODs which show their concerns about student learning.

Testimonies from the rector and all three HODs reflect the idea that the students are not performing well. Their main concern seems to be how to deal with the slow learners and how to improve their performance.

The common trends in the statements of the rector and the HODs are given in table 91:
Table 91. School F: Students' poor performance

<table>
<thead>
<tr>
<th></th>
<th>Poor performance</th>
<th>Remedial work</th>
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</thead>
<tbody>
<tr>
<td>Rector</td>
<td>“It's not always easy when you have mixed ability students”</td>
<td>“we have to do some remedial work with them”</td>
</tr>
<tr>
<td></td>
<td>“If the students have been able to get credits 3, 4, 5 they are still safe, with grade six...”</td>
<td></td>
</tr>
<tr>
<td>HOD Physics</td>
<td>“last year form 4 classes did very badly”</td>
<td>“I took a decision and conducted remedial classes during recess”</td>
</tr>
<tr>
<td></td>
<td>“I targeted these student who had got grade 6 and above”</td>
<td></td>
</tr>
<tr>
<td>HOD Math</td>
<td>“For the mock exams, we see that the students of form five and HSC have worked badly”.</td>
<td>“We put form 5 and HSC students in the same class and we try to do remedial work with them”</td>
</tr>
<tr>
<td>HOD English</td>
<td>“especially the intake is not that good”</td>
<td>“We do remedial classes”</td>
</tr>
</tbody>
</table>

It is noted therefore, that all of them are focusing on areas where students are not doing well and they are trying to help by conducting remedial classes. These classes are run mostly during recess.

HOD English also mentions how she and her colleagues encourage students to read. According to her, the students “do not have this reading culture” and they try by all means in the department to promote the reading culture. She says that in the department they use different strategies in different classes to achieve this, but she did not give examples.

HOD Math explains how in the department, they analyse the results to identify the problems students are facing, “First we have to look at the results and evaluate the student’s problems. What are the difficulties they are getting?” HOD English also says “We need to meet very often to discuss student performance” and adds that “we need to find means in order to motivate the students”.

Hence all 3 HODs and the rector seem to be very much concerned about their students’ poor performance and lack of motivation. For them, this is a big hurdle, but nevertheless, they try their best to improve the academic performance. The aim is to make everyone reach their maximum potential as mentioned by HOD Physics.

So, although the shared vision and values focusing on student learning are not spelt out, the HODs and the rector put a lot of emphasis on promoting student learning.
In a PLC, the premise of collaboration is to promote collective learning and improved practices.

In school F, formal collaboration in the department, as mentioned by the HODs, involves mainly routine work: preparation of scheme of work and preparation and correction of exams papers. However, these examples do not illustrate collaboration but cooperation. One example of formal collaboration which involves the participation and growth of all members of the department and is related to improved student performance is **co-teaching**.

Formal collaboration among different departments with the organization of certain events like exchange program, science exhibition and oriental language fair have been mentioned. These activities are seen as a way to encourage and develop certain collaborative skills: sharing of common values, interpersonal skills, communication; however, these are not related to the PLC.

There seems to be instructions coming mainly from the rector that is predominantly a top down vertical communication pattern. All the activities mentioned by the HODs and the rector are initiated by the rector, for example the main curricular activities of the department, co-teaching, science exhibition, oriental language fair and others not mentioned here. This is supported by the rector. She decides and gives instructions to the HODs and educators for appropriate actions. As she stated: “The major collaborative work goes on when I feel there is an activity, we have staff meeting, there is that appeal from the head, to show them the vision of that activity” and she further explains “I gave them the idea to market the oriental languages: this is what made them work together”. This clearly demonstrates the nature of the communication channel and the role of the rector in directing the processes. The rector stresses on the need to collaborate, however, it is mainly regarding school activities and not as a learning process for improving pedagogical practices.

Collaboration among the departments is given by two HODs. HOD of English talks about organizing certain activities which involved several departments. Similarly HOD Physics mentions collaboration with other departments and gives the example of the science exhibition which was a grand event and involved many departments. However, this is not an illustration of the PLC.

It is interesting to note that the amount of formal collaboration differs from one department to another. It is least in the English department and highest in the Physics department. HOD Math
talks mostly about collaboration in the department: co-teaching and how tests are planned and prepared to ensure uniformity. On the other hand, HOD Physics gives more examples of collaboration in the department. He shows the benefits of *co-teaching*, talks about how the work is planned and organized among the members in the department; and how they all collaborate by doing *panel correction*. These collaborative efforts can be said to be part of the PLC as members in the department work together and this leads to collective learning.

One interesting example of formal collaboration, already mentioned earlier, which took place in school F is co-teaching. Co-teaching has been mentioned by the HODs of Physics and Math and the rector. It was carried out during 2 consecutive years (2012 and 2013) in form 3 and in some departments only. According to the two HODs, co-teaching resulted in better class management and student learning, hence it may be perceived as a success since it improved student learning. As HOD Physics said “*we see the difference in the students in form 4 and 5*”.

The initiative came from the rector and several departments were requested to carry out this practice after a briefing session at the beginning of the year. As the rector said, it “*was a marvellous opportunity for collaboration*”. It was carried out in Form 3 as they are larger groups, 2 educators in one class had to plan and work together. Each educator had specific responsibilities; one focused more on the teaching process and the other one on monitoring learning and class management. Both of them had to plan and work together, reflect on their work and improve on it. Below is an extract of the rector’s views about co-teaching:

*They learned to work together. Because very often, let's say one teacher is explaining and the other is doing nothing, he will have the tendency to see where the other one is explaining well. I told them that this is not your objective but it is to be together in the class, to see how you can work together. The other one is here to observe what the children are doing in the sense not to maintain discipline only or to act as an assistant also. I had to make that very clear. In co-teaching, what I found in the literature, the main problem is what the co-teachers felt. One always felt being the assistant of the other; I had to make it very clear that both the teachers are equal academically and in their subject area. They are there for the students and they have to put their forces together for the students. The other teacher should know how to spot out the student who is having difficulty and that's where he has to step in.*

The rector introduced co-teaching to the staff members and encouraged them to give it a try. They tried it and in the process they made the effort to collaborate and learn together. They had
to plan and conduct the classes together which is different from their normal practice. So this was a great opportunity for them to learn and practice new collaborative skills.

The rector ensures that there is equal sharing of the tasks and that they are both putting in their maximum effort. As a new initiative the rector had to ensure that it goes on well. She was the one who was directing the process and gave instructions based on the theory and the problems they were facing.

Co-teaching is a good example of collective learning by sharing personal practices. The educators learnt new skills, both collaborative and pedagogical by experimenting, reflecting and sharing.

However, this practice has been implemented for two years only. ‘Were the educators happy about it?’ and ‘How far has it contributed to the development of collaborative and pedagogical skills?’ We cannot say!

According to the interview data, there is a large amount of informal collaboration. A lot of exchange takes place informally in order to improve the work in the department. HOD English talks about discussing the topics covered in class and aligning their work. HOD Math has been more general in his statement, he talks about what is happening in class and how they discuss and find solutions together. HOD Physics gives few examples: how another teacher can help students who have not understood the lesson; how they work out exam questions together and how they help colleagues who are having difficulties. This is an informal collaborative channel which also leads to improving practices and student learning.

Initiatives may come from any member of the department and is fully supported by the HODs. HOD Math of school F stated thus:

I just don't rely on my thinking, I have to tell everyone in the department what is happening in such a class and what should we do to help him or her? Then we all sit down together and discuss about it.

This shows that discussing about any issue is a normal process and everyone in the department is involved. It is a friendly way to learn and to improve teaching and learning.

It is interesting to note that in all departments, educators are willing to devote their free time; either free periods, recess or the holidays for informal collaboration. This collaborative space is used to discuss about results, specific problems students are facing, student or class behaviours
and how to solve specific problems. The table below illustrates examples given by the three HODs of school F.

<table>
<thead>
<tr>
<th>Department</th>
<th>Statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>“Most of the time we do such things when we are free or during recess/Long break and they will not complain”.</td>
</tr>
<tr>
<td>Math</td>
<td>“I know that I can rely on everyone and even in holidays I know they will be ready to come and support me”.</td>
</tr>
<tr>
<td>Physics</td>
<td>“A lot of things do happen informally as we are all in the same lab”.</td>
</tr>
</tbody>
</table>

A lot of collaboration occurs outside working hours, hence showing the need to collaborate. It is also to be noted that many formal work and meetings are carried out outside working hours.

The rector of school F focuses on activities whereby staff members interact and have fun. For example, she refers to a residential seminar where teachers cook together, organized activities with students and enjoyed themselves. She talks about how working together is important for co-teaching but leaves it to the educators to cope with any situation that may arise. As she said, “For co-teaching to work it was recommended to have common planning time together. They initiated themselves”.

Therefore, we can say that there are some collaborative efforts from staff members which promote collective learning and shared personal practices. This takes place at the level of the department mostly informally. The amount of such collaboration varies from one department to another. The support of the school leader for the collaborative effort leading to collective learning and shared personal practices has not been evoked.

Sharing of good practices among educators in or among the departments is another aspect of collaboration that promote student learning. Different schools or different departments may have different ways of doing so. Examples of how there is sharing of best practices in the department have been given by HODs of school F. There are also some interesting examples given outside the department.

*Sharing of best practices in the department* is enriching for everyone and it takes place naturally.
HOD English of school F states, “We like to share how to deal with the difficult students”. HOD Math also says “If someone is having problems with one class, most of us, we talk about it in the meeting, they share it with us and we try to find solutions together”.

So when someone has a problem, he/she can rely on members of the department for assistance and they will readily share their experience or know-how. In this way, together, they build up their capacity and contribute to problem solving. It is also interesting to note that the initiatives may come from the HODs or any other educator, the ideas are welcome by everyone and this is done mostly in an informal manner.

Colleagues in the department share their teaching experiences to improve practice and to make their subject more interesting. An example is described by HOD Physics of school F:

For example, we did a practical on “total internal reflection”, we had to choose a prism and show how light is coming and then is reflecting back, after having done this demonstration, they understood. There was a supply teacher; I told him that he can do the same to make students understand. The other colleagues can always use the same apparatuses. If I see a colleague doing a very interesting demonstration, I will ask him if I can do the same, in this way we share our practices.

The example illustrates how a lesson taught by one educator can be helpful to another educator to improve his teaching techniques, especially while teaching some difficult concepts. It involves sharing of personal practices generally in the department and also for helping someone in particular, either a new teacher or someone who is facing some difficulties. As HOD Physics of school F further adds, “Wherever a teacher is not confident or has some doubts on some concepts we try to help each other”. In this way, everyone in the department feels that they can always depend on a colleague for help and support.

In so doing educators can rely on their colleagues to improve their personal practices or to support them in difficult circumstances.

Another example of how educators share their personal practices to improve teaching and learning is given by rector of school F while referring to co-teaching:
During my interviews with co-teachers, one of the teachers gave me one of his experiences. There was one topic in Math which he always feared and was having trouble getting through; although he is a qualified and brilliant teacher. He came to tell me that it was through co-teaching that he was enlightened.

This illustrates one problem that all educators encounter, when they are not very confident with a particular concept to be taught. In co-teaching, the educators can learn from one another as the weakness of one can be the strength of the other. So, opportunities for sharing of good practices are greater when teachers plan and work together. It is also a means to remove doubts and uncertainties which all teachers experience and this boosts their self-confidence.

HODs of school F have mentioned the sharing of good practices during pedagogical meetings. In fact school F works together in a school cluster consisting of 6 secondary schools. Such pedagogical meetings are held on a regular basis; whereby all 6 schools work on a common syllabus and common examinations. For this purpose, meetings of the HODs from the 6 schools are held at least thrice a year, that is once per term. There are several meetings held simultaneously for different subject areas. During the meetings, they plan their scheme of work, discuss about pertinent issues regarding their subject area, plan and prepare common exam papers. It is a platform where all the HODs can voice out their concerns regarding their departments and they try to find solutions together. This is another way for the HODs to share their best practices and to learn from each other. HOD English of school F referred to such meetings: “we meet very often and we share our experiences”. This is indeed a good way for the HODs to interact and to share their views and concerns. It reinforces what the HODs are doing in their schools.

There are also workshops organized which gathered educators from all the 6 secondary schools. This is another opportunity for sharing of good practices among educators of the 6 secondary schools. However, such workshops do not take place on a regular basis.

**School F – Continuous Improvement based on Reflective Inquiry**

Continuous improvement is an ongoing effort to increase the efficiency and effectiveness of a system. It can take place through an informal set of guidelines or a formal practice; whichever pattern it takes; it is one of the main axes of a PLC. In a school, continuous improvement can take place at various levels. Reflective practices are an important ingredient for continuous
improvement and hence for the PLC. They play a very important role in the school context as we are always learning from our experience. We reflect individually and collectively on what we are doing and take corrective measures to improve our practices; that is we need to be reflective practitioners and improve continuously.

In this section, we will see to what extent continuous improvement based on reflective enquiry takes place in school F.

Few concrete examples have been given by the HODs. HOD Physics refers to the pedagogical meetings and gives an example of collective reflection on a problem they were all facing:

*For example, the syllabus had just changed, there was a chapter on electricity, and it was very bulky. First time I taught it, it was very long. At the level of the subject coordinator (common for the 6 schools), we decided to break it into small lots.*

When the HODs reflect on a particular problem together, they can come to some general consensus which can then be implemented at the departmental level in the different schools. Collective reflection can be very resourceful and can lead to the improvement of pedagogical practices in the department. It is a very scientific way of looking at things as referred to in the Deming (PDCA) cycle (plan, do, check and act).

Reflecting individually or together in the department about teaching methods and strategies is another important practice.

One example given by HOD Physics of school F is:

*When I teach the topic, I can see from the students' faces that I can improve to make them understand better; automatically I reflect on this and readjust for the next class. Even if we are not writing it down, we are always reflecting on what we are doing and try to improve for the next class.*

This shows a common practice which every educator should be doing and when they share their reflections at the level of the department, others can be encouraged to do same.

HOD Math also agrees that they need to reflect and review their strategies depending on the context, she said: “All students have their own needs. So we need to adapt ourselves to them”. Indeed, all students have different needs and educators must observe and reflect on the situation in order to provide the appropriate type of student support.

Moreover, HOD English of school F also states, “We discuss what we have done in class to make
Increasing student motivation is another way to improve learning and using innovative teaching strategies is definitely useful. Rector of school F talks about the importance of how teachers should be alert in class. Referring to co-teaching, she says that when one teacher is explaining, the second one needs to be attentive about the students’ reactions, to know whether they have understood. Then, together they need to reflect and review their teaching strategies. Co-teaching is therefore, an additional opportunity for reflective practices in smaller groups and on specific issues. Collective reflection then leads to reviewing teaching strategies for improvement.

Reflective inquiry is therefore, directly linked to better pedagogical practices. If it is done systematically and regularly, it leads to continuous improvement.

Continuous improvement can improve student learning, improve the effectiveness of the teaching force or improve the school as a whole. Continuous improvement of student learning has been evoked by HOD English. She relates how in the department, they discuss about the performance of students and then they try to improve the performance. HOD Math explains how she tries to set targets for improving results incrementally every year,

> When I do the meeting I tell everyone that we need to increase the percentage for passes. And I don't like to tell them for example, we have to increase by 10 per cent. This can't be realized in a year. We do it by two per cent every year. For this we have to rely on each other's help to be able to do that.

The aim is to improve the percentage pass in the subject. In the department, the educators meet and discuss about the performance and plan together the improvement process. There is a target set and a time frame. The HOD tries to show how the improvement is planned in a systematic manner so that educators are encouraged to work accordingly. According to her, it is more realistic to improve by 10% over five years with a target of 2% increase per year. At the end of the year, the results can be analysed and corrective measures proposed for the following year.

Interactions in the departmental, on a daily basis, are the foundations for continuous improvement. A lot has already been discussed in section 4.2.2.4.1.2, in formal and informal collaboration. Working together, solving problems collectively and sharing good practices are essential for continuous improvement of the department.

Rector and HOD Math of school F talk about the learning process taking place in the school and in the departments.
The rector talks about learning by doing, “They were also young and learning as well. They didn't really know about teaching profession so whatever came to them; they took it as a learning process”. As the school is new and all educators are new recruits, they are all learning on the spot depending on the situations that arise, learning from their experiences and by sharing their good practices. In such a condition, the continuous improvement process becomes a must and the learning curve is exponential.

HOD Math of school F admits that she has been learning a lot from her experience as HOD, “As HOD, I find it challenging and I came to learn many things; be it in the subject, in the department or through my colleagues. It is very enriching and I'm still learning many things”. She believes that learning is an ongoing process and that she is always learning and helping others to learn. Assuming the duties of HOD was an opportunity for her to learn many things by reflecting on her practices and by discussing with other HODs and educators.

Pedagogical meetings at the level of the school cluster also lead to personal and professional development. HODs share ideas; discuss about specific issues and learn from others’ experience. This leads to continuous improvement through reflective practices. For school F, HOD English refers to the pedagogical meetings and reports, “We get to meet the teachers of other schools. Last time there was a workshop may be one year ago and we discussed about how the oral class is conducted”. Such meetings enable HODs to discuss about pertinent issues regarding their subject areas. There are always new subject content, new methods or decisions coming from the higher management, so in the pedagogical meetings, these issues can be addressed and collective actions can be taken. So, when the HODs go back to their schools, they understand clearly how to proceed and are able to guide members of their department as well. Pedagogical meetings can be an effective pathway to continuous improvement; however, it is not a regular feature.

Based on these findings, we cannot say that school F is functioning as a PLC despite some characteristics of the PLC are present. The school vision is not clearly defined and shared vision and values are not well understood. Some form of collaboration and collective learning exist, but occur mostly in an informal manner. Reflective practices take place as well and lead to continuous improvement. Being a young school, the rector and educators learn from experience and improve their practices. In Mauritian schools, PLC is not institutionalized as in many developed countries, however, early forms and features of the PLC can be observed.
Professional Learning Community in School E

In school E there seems to be well defined school processes. The school management and staff seem to be confident about what they need to achieve. The elements of the PLC have also been described to a relatively large extent as described below.

School E – Shared vision and values focusing on student learning

In school E, there seems to be a clear vision which comes from the manager. It is to be noted that the manager is the founder of the school. The rector says clearly, “The vision has always been his. We are still working according to his vision. He got a certain vision so we are working according to his vision”. The statement of HOD English confirms that the vision emanates from the manager, and further added that they are just translating this vision into action through the work they are doing in the department. The school vision seems to be shared and understood by everyone.

There is consensus about focusing on student learning. As HOD English mentions, “We have a common vision. We all look at the same vision. We put the child at the centre of learning”. HOD Physics also says that their common vision is to make students achieve their maximum potential. He said that the vision is clearly conveyed by the rector and that they “all work to get the best results out of the pupils”. He further refers to the school motto “Success depends on proper use of time” and linked it to the vision, to demonstrate how they pull all their effort together and use their time judiciously to promote student learning.

According to the rector, the vision is also to create a collaborative culture so that everyone feels that “they are also the owners of the result being produced at school”. As he says “Well I think to enhance the collaboration in ‘school E’, that's the aim, to find other means to enhance collaboration in both teaching and support staff”. So, for him, his priority is to get all his staff: teaching and non-teaching to work together and to align their vision to the success of the school.

Values are fundamental beliefs which guide decisions and behaviour either individually or collectively. The values reflect the vision and the mission of a school and impact on the school culture. Shared values are important soft skills which enable all staff to synchronize their actions.

One important value that is shown by school E is the way they treat their people, students and staff. Referring to the way they treat students, HOD English claims that:
We have been given very strict sort of warning if I can say, but advice rather, from the instructional leader, that we should adopt a language which will not hurt the feelings of students, downgrade them, and humiliate them.

This demonstrates the sense of respect and care which are very important to motivate students. The example seems to come from the leaders themselves (the manager and the rector). As HOD English adds “It’s a kind of two way traffic. The response we have depends on what treatment we receive. The manager treats all staffs like his family”. He further refers to the school as his second home and believes that it gives the sense of unity and wellbeing.

HOD Physics talks about acting in all fairness towards all students, whatever their behaviour or ability. He also stresses that all teachers are encouraged to help students irrespective of whether they work with them or not.

According to HOD English, the values that are imparted to the students are sharing and respect, which goes in line with the other values that are promoted.

The rector seems to be very satisfied with his staff, as he says “I think that the advantage, I can say, many of my staff compared to other institutions is devoted and committed. I think I can say that for at least 90%”.

According to all interview data concerning values, we can say that the concept of shared values exists in school E. The HODs and the rector express the same concerns and they share common beliefs.

Student performance and welfare are of prime importance in a school. They are strong indicators of school effectiveness. So student focus should always remain one of the priorities of schools. All HODs and rector of school E have been systematic in their approach concerning the focus on student learning.

In school E, although they have low ability students, no one mentions that the students are doing badly or that the intake is not good. On the contrary, everyone talks about classifying the students in different categories in order to better satisfy their needs. A clear illustration is given by the rector himself:

School E being a mixed ability institution means that you have got different levels of student, you will be having high flyers, above average, below average, borderline and failures. So you are working with at least 7 types of students at ‘school E’. The main difficulty lies in how are you going to ensure that every
Similarly, HOD Physics says, “we are ensuring that all the students, across the spectrum from below average to excellent students, all are getting the same kind of attention”.

HOD English talks about different learners’ style, “Highly motivated students we do not mean our high flyers. A student can be of low ability but highly motivated”.

This shows a careful analysis of the learners’ typology; everyone is conscious about it and takes it into consideration while planning their teaching strategies.

In school E different strategies used to promote learning and their outcomes have been discussed both in normal classes and in special groups. HOD English of school E refers to a specific group of students who really need support, who are shy and introvert, who find it very hard to come out of their nutshell and interact with others and with the teacher. He even describes what he is actually doing for this category of learners:

*We can see that some students, who are introvert and shy by nature, are hesitant to ask questions, but in small groups they perform better. They come up with questions. They talk and discuss. They clarify concepts which are not clear to them. It helps them a lot.*

HOD Physics is very careful about giving all the students the required attention and support:

*At ‘school E’, it’s a challenge because we have to fit in all our students. Everyone gets the same amount of attention. We don’t want to penalize any of our students. So it’s a challenge every day because each student is different.*

He further adds that no one is left on his own; when the work is prepared it caters for students of different abilities. This is another way of dealing with students of different abilities in normal classes. Furthermore, HOD English warns about the teacher’s approach that should not demotivate the students to learn a particular subject.

The language used is indicative of the school culture. HOD Physics mentions “one important thing here is giving the proper attention to every student”. This indirectly conveys the message that ‘at school E’, this is our way of doing things’. So we can say that giving special attention to every student is embedded in the school culture in school E.

HOD Math goes one step further, identifying areas where the students need further learning and providing all the necessary support as shown below:
If they have problems with questions in such topic, we find those topics, photocopy them or download from the internet and provide the pupils all the facilities, all the things they want. We are going to help them to understand. If he or she wants further explanation, we are ready to give the explanation. We give personal guidance also.

Again this is done during the normal classes. Hence, different strategies are used simultaneously, in normal classes to attend to various students’ needs by a differentiation process and no one is left behind. This is the first level of action and they all seem to put in the required effort to realize it.

Special emphasis is laid on students who want to succeed. It is either the brilliant ones or the highly-motivated ones. The rector and the HODs have stressed on this issue and have given examples of how they are concentrating their effort to this end. The rector refers to “these students who really want to deliver” and explains how the educators work collaboratively to help these students to improve their performance. HOD English says “if the student has self-motivation he should be properly scaffolded” and further adds that innovative teaching strategies are adopted in order to support the highly motivated students. HOD Math reviews the whole process, starting with regular assessments from the beginning of the year to identify those who are doing well, then the full support, guidance and advice of the teacher is ensured; and a follow up of the work is done. The educators provide these students with extra resources and materials to promote learning. Their common goal is to rank students at national level.

The second level of action is a form of streaming or grouping students into smaller groups depending on their common interests and needs. In this way, specialized attention is given based on the groups. A good example is given below by HOD English of school E:

For example, a teacher at HSC working with 40 students: We spot the best elements from one section; we put them together in a smaller class. There we can work faster. And then we can cater for their needs. But if they had stayed in the same class, there would have been students with different abilities. So the high flyers are sort of penalized and then for the slow learners, we cannot go very fast, because they would lag behind. So in this way, in ‘school E’ we sort of stream them.

Only HOD English mentions this method, probably it is limited to some classes only as it involves more space and teachers. But, nevertheless it promotes learning in an effective way. More individual attention can be given to the students and there is greater monitoring of learning.
The third level of action is what they termed as extension classes. These classes are run outside school hours: during weekends, during school holidays, early morning, in the afternoon or during recess. The target groups are different categories of students, and not only slow learners. This is also one way to attend to the smaller groups mentioned in the second level of action. The aim is to improve performance at all levels.

The rector made a simple calculation to show that the amount of teaching time is very limited, if they want to achieve excellent results. Furthermore, he added that his teachers willingly help students outside school hours. As he said:

*So when you look at 12 % of the time being spent at school, don't think it is a sufficient amount of time if you want someone to achieve excellence especially when you have someone you know from poorer background. From their perspective in the departments, my teachers bring up their collaborative spirit, for example they would be ready to help student even during vacation time, before school starts, after school time or during weekends. They have this kind of work at the department level.*

This is fully supported by HOD English when he reports, *“We run special classes during weekends for our students which we call extension classes. So there we can give them additional coaching and we got special classes too”.*

This is another effective way to improve learning. Students are given extra coaching and attention, especially for those from poorer families who cannot afford private tutoring. But the questions are “How far all educators are really willing to sacrifice their free time for school work?” and ‘If educators are overworked, will this not impact on their normal work?’

**School E- Collaboration: Collective learning and shared personal practices**

Sharing of good practices among educators within or among the departments is one aspect of collaboration that promote student learning. Different schools or different departments may have different ways of doing so. HODs of school E give examples of how there is sharing of good practices mainly in the department, but there are also some examples outside and between the departments.

Helping a colleague who is having problems in a particular situation is a common example given by the HODs. HOD Math of school E states,
If someone has some problems, he will talk to the teacher or management. Then they come towards us. They will tell they have such and such problem. We do discuss in the staff room how to help to solve the problem.

HOD English of school E describes an example of how members of the department discuss about particular problems they face:

I have been teaching let's say in a class in a particular way, then when we are discussing that, we see that students are facing some difficulties in this area. So how do we go about improving this? We may get at times colleagues saying that they don't experience this difficulty. So we ask how and they say that they proceed this way. We try to experiment and at times it works.

So when someone has a problem, he/she can rely on members of the department for help and they readily share their experience and know-how. In this way, together, they build up their capacity and contribute to problem solving. It is also interesting to note that the initiatives may come from the HODs or any other educator, the ideas are welcome by everyone and this is done mostly in an informal manner.

Colleagues in the department share their teaching practices to improve the teaching process and to make their subject more interesting. HOD Physics of school E gives an example in the setting of practicals, “we can set one experiment. We have four teachers, may be one is setting it but we all collaborate to improve it and to make it more attractive”. He further explains by giving a specific example:

We have prepared experiments here which we take to class. This is what I have done to explain magnetism. I have seen that the students have understood it very well. So I just share it with my new colleagues. They can do it as well if they wish. It is not something that I am imposing on them. But they are doing something and then we can share. This is how it happens.

This sharing of personal practices generally takes place in the department. It helps anyone, either a new teacher or someone facing some difficulties.

Class observation is another way to share good practices. It has been evoked by HOD Physics of school E. As he explains:
Actually when I came here, our actual deputy rector was the HOD of Physics. He used to do a few of his classes in the Physics lab, so when I was free, I did attend some of his classes. There was another new colleague as well. We do many classes in the lab, so whenever someone is free, he/she is in the lab. We do observe and it’s not formally but informally. We can be doing something else but if a colleague is explaining an important part something that seems to be quite difficult, we look at it. After the class, we can still continue to talk about that.

This shows that in the Physics lab, over the years, there has been a collaborative culture. All educators freely observe the classes and practical sessions without interfering with the work and subsequently, use this as a subject for discussion and improvement. The educators do not feel embarrassed that they are being watched as it forms part of their culture. Unlike the others, they are used to this practice probably because most of the teachers conduct their classes in the lab.

HODs of school E have mentioned the sharing of good practices during seminars and workshops. Indeed, this is an effective way for staff members to discuss, reflect and improve their practices.

For school E, as discussed earlier, workshops are being organized at school level, usually at the end of the year to reflect on pedagogical issues. HODs of English and Math refer to these workshops as an important means to share best practices.

HOD English says, “We have a two days’ workshop in the month of November and our Rector always comes up with new ideas, he also elicits our views and we have open discussions/brainstorming on how we can improve on ourselves”. HOD Physics explains how he can learn from his colleagues from other departments:

_I can get a view from sociology department. We all sit back and listen. At the end of, let's say the sociology department finished with the presentation, I can ask questions. We are all colleagues, it's like a community. We are not here to argue, it is just sharing of ideas and practices. This is how the workshop takes place where we talk about school issues, how to motivate, set up discipline._

These two statements clearly indicate how educators discuss and share their ideas and experiences freely. It is an opportunity for them to improve professionally. Hence, the workshop is a common platform for all educators and school leaders to discuss their practices. Moreover, having the workshop at the end of the academic year enables them to make an overview of the whole year and based on the outcomes and contributions from each member, strategies are developed for the coming year. However, such exchanges take place only once a year, collaboration and collective learning may not be significant.
School E – Continuous Improvement based on Reflective Inquiry

As stated earlier, continuous improvement can be to improve student learning, to improve the effectiveness of the teaching force or to improve the school as an organization. Continuous improvement of student learning has been treated in a systematic way by school E.

The rector rightly argues that they need data for analysis, “We analyse results on a regular basis because we need data, without data we cannot do much progress”. He further adds that they regularly use the data to track students’ progress. But, he is not satisfied with the actual practice as it is time consuming, his aim is to computerize the whole process so that the analysis can be done more effectively. However, none of the HODs of school E mentioned how to improve learning based on performance analysis.

The ongoing personal and professional development of educators have been described by HODs of school E. HOD English is very apprehensive about the ongoing effort to improve his department. He said that the achievements so far “has all been brought about not by mere luck but has come up with innovative ideas, commitment and experimenting with new pedagogy” and further added that they are updating themselves all the time. This really shows the spirit of always improving by doing new things in a systematic and organized manner.

Professional development by following courses in teacher education is another way to improve professionally. It has been evoked by HOD English and HOD Math of school E. As HOD English proudly reported:

\[I\text{ take my own example; I joined this institution at the age of 20 with only my HSC. The school gave me the chance to go for teacher's diploma. The school later gave me the chance to go for my Bed. The school later released me to do my MA from Brighton University.}\]

HOD Math talked about following teacher education courses and stated that most of the teachers have their PGCE (Post Graduate Certificate in Education) and now most staff members are keen to go for further studies, hence leading to professional growth.

Courses on teacher education and pedagogy are essential for teachers to develop certain skills and to be empowered for their teaching and learning adventure. It is to be noted that in Mauritius, it is not compulsory for teachers to have a teacher education certificate when they join the teaching profession. But usually teachers follow such courses when they are in service and they are given approval and release by their employer. Nowadays there are many courses,
diploma, certificate, degree, masters … that teachers read. They do it on a voluntary basis and at their own pace.

Workshops and pedagogical meetings also lead to personal and professional development. Sharing of ideas; discussing about specific issues; and learning from others’ experience lead to continuous improvement. This is at the heart of the PLC.

Referring to the end of year seminars, HOD English says “Matters are brought into discussion by all colleagues, and then we try to find a solution and the best proposals are taken on board.” HOD Math further explained,

Normally at the end of every year we have our workshops that are being held at our school. We have some strategic planning that we do. Every year we take topics, we discuss and then all are being recorded. They polish it and put it on paper. Finally we have lots of things being resolved since 2000.

So, the seminar is an opportunity for all educators and the school management to reflect together on various issues regarding the continuous improvement of teaching and learning and school improvement at large. Each year, strategies are developed according to the needs and aspirations. Such seminars in school E are pathways to continuous improvement.

Reflective practices play an important role in a school. Several examples have been given by school E. Referring to the end of year seminar, HOD English explained, “We take stock of the academic year which is over as we have already assessed our students first term, second term and end of year examinations”. That is they reflect collectively on what they have been doing during the year and on the results; find out what are their weaknesses and their challenges and then accordingly they review their strategies.

Reflecting individually or together in the department about teaching methods and strategies is another common practice. HOD Physics gave a good example of how they reflect on their teaching practices and readjust their teaching methods in order to improve student learning:

At times when things do not work, you have to reflect and then correct on it. I will give you an example, it happened with a new batch of lower six students. We brought them to the lab, we gave them the setting of the practical and then they did it. But we had a lot of problems. Because practical has to be in the lab, it has to be hands-on right from the beginning. After reflecting on that, what came up? Let's take some periods; we will do theory and practical. We will explain everything, a – z on the board. They copy it in the copybook. They have it with them, every time they come for their practical classes. That
improved the work.

Teachers need to improve their teaching strategies or adapt them to their learners’ needs. The reflective process inevitably leads to continuous improvement.

As stated earlier, Professional Learning Communities are not common in Mauritian secondary schools. However, based on the interview data, we can conclude that the concept of the PLC is present to a larger extent in school E. The shared vision and values is well defined and supports collaborative work and student learning. The rector and the HODs expressed similar views about what they are expected to achieve, showing total alignment. The collaborative culture promotes collective learning and shared personal practices. Educators have the opportunities to reflect collectively on pedagogical issues and student learning; thus, leading to continuous improvement. However, the PLC is not formally present as it is in many schools in the western and American societies. Many initiatives are taken informally in the absence of the formal support. There are also several constraints that limit the working of the PLC, namely time constraint, heavy work load and high student/teacher ratio. The rector encourages educators to engage in collective learning and continuous improvement and promotes collegiality and shared leadership. Given the right conditions, school E has all the requisites to become a full-fledged PLC.
CHAPTER 5. Discussion

This chapter contains a discussion of the findings presented in previous chapters with regard to literature and context. The reader has already been introduced to some aspects of the secondary school context in Mauritius. The findings will be discussed in relation to this specific context.

This study follows a mixed methodology with a quantitative phase followed by the qualitative phase. It aims to investigate the role of the school leadership in the development of a Professional Learning Community (PLC) and its effect on the school’s level of effectiveness.

The findings will now be interpreted and used to formulate answers to the research questions. These findings can help as well to promote PLCs in Mauritian secondary schools in order to enhance their effectiveness. The discussion has been organized into three sections in order to provide answers to the three research questions.

The first section of the discussion addresses the first research question:

- *Are educators in Mauritian secondary schools working collaboratively in the form of Professional Learning Communities?*

This is to find out how educators are working collaboratively and to see whether these collaborative efforts are aligned with the PLC. This part of the discussion is based on quantitative data from the educator’s survey and some elements from the qualitative data.

In the second section of the discussion, we will treat the second research question:

- *Is Professional Learning Community linked to school effectiveness?*

We have assessed the levels of school effectiveness based on the students’ wellbeing and the school academic performance. Both student wellbeing and academic performance have been measured using quantitative data. Student wellbeing has been measured using the student wellbeing questionnaire with the 4 components: student self-esteem, social wellbeing, student teacher relationship and student friend relationship. Academic performance has been measured using the academic input and output. The academic input is students’ Certificate of Primary Education (CPE) results when they were admitted in form 1 and the academic output has been taken as the School Certificate (SC) results for the same students after 5 years of secondary schooling. Then, the student wellbeing and academic performance, as measures of school effectiveness have been related to the PLC in order to understand whether or not PLCs in the schools lead to greater school effectiveness.
It is to be noted that in the quantitative phase before carrying out the survey for educators and students, a pre-test was performed using the same sample size and was analysed in order to improve the instrument for more reliable and valid results.

The third part of the discussion relates to the third research question:

- **How school leadership is related to Professional Learning Community and in what ways school leaders are supporting the PLC?**

The third research question consists of 2 parts. The first part describes the leadership patterns, mainly associated with instructional and shared leadership; then it relates the leadership patterns to the promotion of the PLC. In other words, it is to describe how the PLC is influenced by school leadership. This part is based on quantitative data from the educator’s survey. For the second part of the third research question, we have tried to look in depth about how the rector is supporting the creation and/or development of the PLC. This part is based on the qualitative data from the interviews of rectors and HODs.

The study has been carried out in 8 secondary schools of different types: state and private schools and low input and high input schools. Then two schools have been chosen for the qualitative part. Before discussing the findings, the main results from both quantitative and qualitative phases have been synthesized and summarized as given below.

Firstly, in Phase I (quantitative methods) evidence of the PLC in the schools appeared. Educators work together to improve student learning. In Phase 2 (qualitative methods) the nature of the collaboration was further investigated and showed that it is not directly related to the PLC. Different schools have different levels of Professional Learning Community.

Secondly, in Phase I level of school effectiveness is found to be weakly correlated to the PLC. PLCs have an influence on the academic performance and on student teacher relationship. Phase 2 supports findings in phase 1, as it was seen that the school with greater level of PLC showed greater level of school effectiveness.

Thirdly, school leadership follows the directive and instructional models with little shared leadership. The support of the school leadership is important and determines the nature of the PLC. This is revealed by both phase 1 and phase 2 of the study.
Fourthly, the existence of the PLC is seen to be related to the school needs and context. PLC exists where there is a greater need to improve student academic performance. However, more information is still needed to support this finding as only one such school has been studied. The private schools tend to show greater collaboration and better school academic performance as compared to the state schools.

Lastly, concerning the PLC, there are differences not only between schools but between departments in a school. This is due to factors pertaining to the department, the role of the head of department and the nature of the subject.

The nature of collaboration, PLC, school’s level of effectiveness and the support of the school leadership will be discussed in the following sections.

5.1. Collaboration and Professional Learning Communities

PLC is not formally established in schools in Mauritius. The term PLC is familiar to only few people and ‘its interpretation can be different in different contexts’ (Mitchell & Sackney, 2000, p.46). As Ting (2016) reported, the term PLC is well known in western countries but it is not used commonly in other countries despite the fact that the concept of the PLC is used to improve schools. Bolam et al (2005, p.145) suggest that it is necessary to make explicit the use of the concept of PLC and to seek shared understanding. This may well be right. However, it is a concept which is difficult to translate in Mauritius; we must be careful while introducing new ideas in order to avoid confusion. Therefore, it may be more successful to discuss the PLC from a conceptual point of view. Hence, the term PLC has not been used in the survey, rather its characteristics which have been classified in the 3 elements as established in the theoretical model:

1. Shared vision and values focusing on student learning;
2. Collaboration: Collective learning and shared personal practices; and
3. Continuous improvement based on reflective inquiry.

These 3 elements cover all the characteristics of the PLC as per definitions in the theoretical framework based on the work of Louis et al., (1995); Newmann and Associates (1996); Visscher and Witziers (2004); Hord, (2004); Vescio et al. (2006); Lomos et al. (2011); Dufour and Reeves (2015); and OECD (2016).
5.1.1 Theoretical Model for Professional Learning Community

The term PLC has not been used in the educator’s survey; its 3 elements as per the theoretical model which covers all its characteristics have been measured. The sections in the educator’s questionnaire for the pre-test pertaining to the PLC are:

1. Shared vision and values focusing on student learning;
2. Collaboration - collective learning and shared personal practices; and
3. Continuous improvement based on reflective inquiry.

Homogeneity of variance test was carried out using Factor Analysis as given in section 4.1.1.2. In the questionnaire for the pre-test ‘Shared vision and values focusing on student learning’ was extracted as 2 components as compared to the other 2 elements of the PLC which were extracted as one component. Based on these results, we reviewed our theoretical model and modified it slightly in order to adapt it to the Mauritian context. Therefore, the questions were reframed in order to split the element ‘Shared vision and values focusing on student learning’ into 2 distinct elements namely: ‘shared vision and values’ and ‘focus on student learning’ in order to improve their coherence. Hence, in the final questionnaire, the PLC was given as 4 elements instead of 3 elements as initially planned.

The mean score for ‘focus on student learning’ (4.62) was distinctly greater than the mean score for ‘shared vision and values’ (4.13). This further supports the fact that these 2 components need to be treated as two distinct elements. The model still has the same constituents but however, it has been treated as 4 elements. That is:

1. Shared vision and values
2. Focusing on student learning
3. Collaboration - collective learning and shared personal practices and
4. Continuous improvement based on reflective inquiry.
The revised model for the PLC is given in figure 16.

Figure 16. Revised Theoretical Model of the PLC

The 4 elements of the PLC are not at the same level of functioning. Shared vision and values operate at the organizational level and they are initiatives taken at the school management level. Having a shared vision and values has been found to be centrally important (Andrew and Lewis, 2007). It requires the guidance of the school leader and the commitment of all stakeholders. They
are important to guide the other 3 elements of the PLC. There is broad agreement in the literature about shared vision and values as components of a PLC and as characteristics of effective schools. The high mean score for shared vision and values that appeared in this study is therefore legitimate.

*Focus on student learning* is linked to the shared vision and values and at the same time it is the main focus for actions to be taken at departmental level. The score for ‘focus on student learning’ is the highest among the 4 elements of the PLC. In Mauritius, there is great emphasis on improving student academic performance. Schools are rated on the basis of their academic performance. There are national targets which are set by the Ministry of Education and schools are expected to meet these targets. Therefore, there is always a high focus on improving academic results. However, improving academic results is one aspect of student learning. Student learning in the broad sense means much more than passing exams.

*Collaboration: collective learning based on personal practices* has the lowest mean score of 4.11, compared to the other 3 elements of the PLC. The nature of the collaboration will be discussed in the next section.

*Shared vision and values; Collaboration: collective learning based on personal practices; and Continuous improvement based on reflective inquiry* have lower mean scores as compared to *focus on student learning*. This has been explained by the high focus on academic performance in Mauritius Secondary Schools. The consistency of the 3 mean scores confirms relevant measures at the departmental level, through pedagogical activities, projects and interactions, whereby the HODs act as the subject leaders.

Based on the quantitative analysis of the educator’s survey, we can conclude a good level of the PLC. The mean scores for the 4 elements of the PLC are higher than the other sections measured in the educator’s survey as shown in Table 25. Taken together, the score for the PLC is 4.29, that is greater than 4 on the 5 point Likert scale (1- Disagree, 2- slightly disagree, 3- Neither agree nor disagree, 4- slightly agree, 5- Agree). The standard deviation of .69 shows consistency in the response. These results seem to indicate the existence of PLCs in the 8 selected secondary schools.

Andrew and Lewis (2007) stated that the shared vision and sense of purpose are found to be centrally important. Educators answering positively for the statement ‘shared vision and values
‘Support norms of behaviour that guide individual decisions’, support this statement. ‘Collective decisions are made in alignment with the school’s vision and values’ can also be said to exist based on the survey.

From the survey it would appear that educators work collaboratively, share their good practices and learn from their peers. Referring to the statements in the survey questionnaire, we can say that educators apply the new learning to their class situations and search for solutions to address diverse student needs. They review student work and analyse academic results to identify strengths and weaknesses. They are engaged in dialogue and are continuously improving based on their reflective practices.

As discussed earlier, the score for ‘focus on student learning’ is the highest of the 4 elements of the PLC, reflecting the great emphasis on student learning. In the Mauritian context, there is great competition for achieving very good academic results. The major challenge for all schools is to improve academic performance of their students.

Therefore, student learning has surely been considered in terms of academic performance as this is the main concern of all school stakeholders.

Hence, based on these high scores and the description of the PLC in the literature review, we tend to conclude that the schools are functioning as PLCs. Educators invest in collaborative efforts in order to improve the student performance. The HODs guide these collaborative efforts and provide the opportunities for sharing and learning from each other in the department. However, we do not have details and frequency of such practices. It is therefore, premature to conclude the existence of PLCs in the schools surveyed.

5.1.2. Collaboration

Collaboration is at the core of the PLC (Ronfeldt et al., 2015). As discussed above, the mean score for collaboration and collective learning is high, greater than 4 on the 5 point Likert scale, however it is least among the 4 elements of the PLC (namely shared vision and values, focus on student learning, collaboration and collective learning and reflective practices leading to continuous improvement). According to the survey data, educators ‘work together to seek knowledge, skills and strategies and apply the new learning to their work’. They ‘plan and work together to search for solutions to address diverse student needs’. They are given ‘the opportunity to encourage and offer advice to peers’. The score for the statement ‘staff informally
shares ideas and suggestions for improving professional practices’ is the highest among the 5 statements on collaboration as given in table 32. This indicates that collaboration for improving teaching and learning takes place more in an informal manner. It is therefore, important to understand the nature of the collaborative work and to see whether it supports the PLC.

**Nature of Collaborative work**

In order to supplement the quantitative findings on collaboration and to go in-depth in the nature of the collaborative work, we have used relevant qualitative data. Interviews with the HODs of the 2 selected schools have provided valuable information about how educators are working collaboratively in their department. HODs are educators with additional responsibilities of managing the department and leading the subject. HODs are therefore, in a good position to describe the activities taking place in their respective departments.

We have analysed the nature of the collaborative work as described by the HODs of the two schools. We can see that many of the examples given are not related to the PLC; that is they do not lead to collective learning. They are not focused on student learning and do not lead to continuous improvement through reflective practices. Such examples of collaborative work have been categorized and given in table 93.

<table>
<thead>
<tr>
<th><strong>Collaborative work</strong></th>
<th><strong>Examples</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>School Activities</strong></td>
<td>Organizing school activities, exhibitions and projects</td>
</tr>
<tr>
<td></td>
<td>Working together during activities</td>
</tr>
<tr>
<td></td>
<td>Working in school committees</td>
</tr>
<tr>
<td><strong>Departmental Activities</strong></td>
<td>Delegation of work in the department</td>
</tr>
<tr>
<td></td>
<td>Planning and preparation of scheme of work</td>
</tr>
<tr>
<td></td>
<td>Preparation and correction of examination papers</td>
</tr>
<tr>
<td></td>
<td>Replacing a colleague who is absent</td>
</tr>
<tr>
<td><strong>Helping colleagues</strong></td>
<td>Helping a colleague to solve a problem</td>
</tr>
<tr>
<td></td>
<td>Mentoring and encouraging a new colleague</td>
</tr>
</tbody>
</table>
On the other hand, there is collaborative work which focuses on student learning, leading to collective learning and continuous improvement through reflective practices. Therefore, these collaborative work nurtures the PLC. Such examples have been grouped into different categories and are given in table 94.

<table>
<thead>
<tr>
<th>Collaborative work</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Focus on student learning</td>
<td>Analysis of student performance</td>
</tr>
<tr>
<td></td>
<td>Working together on different teaching strategies adapted to the student’s needs</td>
</tr>
<tr>
<td>Collective Learning</td>
<td>Sharing of good practices in departmental meetings</td>
</tr>
<tr>
<td></td>
<td>Co-teaching</td>
</tr>
<tr>
<td></td>
<td>Class observation and sharing of personal practices</td>
</tr>
<tr>
<td></td>
<td>Working together in workshops and seminars</td>
</tr>
<tr>
<td></td>
<td>Discussing about some issues related to the subject, especially with change in syllabus</td>
</tr>
<tr>
<td>Reflective Practices</td>
<td>Finding solutions together</td>
</tr>
<tr>
<td></td>
<td>Reflecting together in pedagogical meetings</td>
</tr>
</tbody>
</table>

The examples given in table 94 tally with Ronfeldt et al. (2015) study on kinds of collaboration that exist in instructional teams. They found that (1) collaboration focused on analysing student data and developing instructional responses and (2) collaboration focused on curriculum and instructional decision-making are effective in promoting student learning. Moreover, they also cited Vescio et al. (2008, P.4): ‘The most effective PLCs were those characterized by collaboration with a clear and persistent focus on data about student learning’. Ronfeldt et al. (2015) also noted that teams that maintained a high level of ‘group instructional practice’ like preparing together for instruction, co-teaching, observing one another, and grouping students flexibly for particular instructional purposes had better student achievement. So, we can say that some of the collaborative efforts mentioned in the interviews support the literature on the nature of collaborative work.
The nature of the collaborative work has been classified; however, the type and frequency of these collaborative activities have not been studied in detail. These are important indicators to determine the extent to which PLCs exist.

It is also to be noted that many of the activities do not take place regularly, like seminars, workshops and pedagogical meetings. Co-teaching was carried out in one school and was discontinued after 2 years. Hence, the educators do work collaboratively, but it is less ‘learning-oriented and growth promoting’ (Toole and Louis, 2002).

The nature of collaboration is different in different schools. Survey results by Ronfeldt et al. (2015) also suggested that some kinds of collaboration are more common than others. Different schools favour different kinds of collaboration depending on some factors which can be said to be a function of school characteristics (Ronfeldt et al., 2015). Based on the quantitative analysis, the 8 schools have different mean scores for collaboration; some schools have higher scores compared to others. The mean score is highest for school E and lowest for school C. However, the analysis of variance shows no significant differences between the schools except for school C.

However, based on qualitative analysis, we can say that the frequency and nature of collaboration in the 2 schools are markedly different. School E shows greater amount of collaboration as compared to school F. These findings support Ronfeldt et al. (2015) views about the nature of collaboration in different schools. For instance, HODs of school E have provided several examples of collaboration and collective learning (attending to diverse student’s needs, improving academic performance and creating a collaborative culture) which were not mentioned by HODs of school F.

Duncombe and Armour (2004) would probably not use the term collaboration about many of the examples given. They distinguished between collaboration and cooperation and would rather use the term cooperation, which for them refers to a situation where teachers cooperate with each other, share work, replace colleagues and swap lesson plans (as given in table 93). Collaboration, on the other hand, is according to them when teachers work together to solve problems by discussing and exploring possible solutions, something which the HODs rarely mentioned.
Within a school, the nature and extent of collaboration can also be different in different departments. The quantitative data do not allow us to discriminate these aspects of collaboration. Analysis of variance (ANOVA) for the different subject areas in the survey has shown that there are no significant differences between the departments and the nature of collaboration. However, nuances in collaboration between the departments have been revealed by the qualitative data. Based on interviews of HODs, we can say that within a school, the nature and extent of collaboration vary from one department to another. As Ronfeldt et al. (2015, p.510) cautioned ‘in the absence of school-wide collaborative structures, individual efforts to collaborate should not be overlooked; school leaders and teachers should find ways to encourage such efforts’. In some departments there are more opportunities to collaborate. This can be illustrated by the three departments in school E. The HOD of Physics gave many examples of how they all work together in the department. It is the department with the highest level of collaboration probably because of two main reasons (1) they all work in the same laboratory and communication is easy; and (2) they work on practical classes together and share their experience. There is lesser collaboration in the English department as described by the HOD although he takes initiatives to promote the shared vision and learning. The math department seems to focus more on student learning and less on collaboration.

Therefore, we can say that in the two secondary schools studied, the nature of the subject contributes significantly to the nature and frequency of collaboration. This study has not provided sufficient relevant information for us to draw valid conclusions. This is one aspect of collaboration which could be further investigated.

**Formal and Informal Collaboration**

Collaboration takes place both formally and informally. Formal collaboration is planned by the school management and informal collaboration is not planned and depends mainly on the initiatives from the HODs and educators. Both types of collaboration support the PLC.

Formal collaboration occurs mainly through the departmental meetings, whereby educators have the opportunities to interact, share and learn from each other. Many of the collaborative activities mentioned in table 94 take place during the departmental meetings. These meetings are platforms for the analysis of student performance and for working on ‘strategies to improve student learning by improving teaching practice’ (Vescio et al., 2006, p.9). In Mauritius, HODs are
expected to carry out meetings every fortnight. However, the time allocated to the departmental meetings is limited due to time constraint. It is not allocated on the timetable as mentioned by both rectors in the interviews. As one rector mentioned ‘They don’t have it (slot for departmental meeting) on their time table unfortunately, but I advise them to do it once every fortnight’. Members of the department need to adjust and find an appropriate time to conduct the meeting with minimum disturbance to the teaching and learning process. As one of the HODs mentioned ‘departmental meetings cannot be held for a long time..., they are held during the recess in order not to compromise with the teaching time’. Therefore, HODs and educators have little time and opportunity to interact formally, this is one major obstacle in the development of the PLC.

Other formal collaborative efforts are initiatives based on the school vision and values, which can promote the development of the PLC. One example given in one school for the case study is co-teaching. The 2 co-teachers who are working in the same class need to plan their lessons together. They conduct the classes and reflect on their lessons together to find ways to improve. Co-teaching is an opportunity for educators to collaborate and learn together. As the rector mentioned ‘It was a marvellous opportunity for collaboration’. It has been seen as a constructive and successful activity by the HODs as it improved student learning. As one of the HODs stated ‘we see the difference in the students in form 4 and 5’. Organizing workshops and seminars are also opportunities to collaborate formally but it should not be a one off activity. Fullan (2005a, p.69) talks about the importance of redefining professional development stating that capacity building “is the daily habit of working together, and you can’t learn this from a workshop or course”.

On the other hand, most of the collaboration takes place informally. That is, the initiatives come from within the departments rather than from the school management. HODs and educators expressed their needs to collaborate for various reasons, both for assuming their duties more effectively and for sharing and learning from their colleagues. Some examples given by the HODs are:

- Sharing views and concerns informally about some issues related to either the subject or the students.
- Working in proximity in the same lab and sharing of practices in terms of setting of practicals, discussion with students and looking for appropriate teaching strategies together.
• Seating arrangement in the staffrooms in order to group educators with common interests. During recess or free time, they talk and reflect casually on certain issues and concerns.
• Collaboration around the planning and organization of certain pedagogical activities.

In general, educators make the effort to collaborate despite the time constraint and the heavy work load as mentioned by the HODs in the interviews. Collaboration also occurs outside official working hours as shown in Table 92. Some departments have more opportunities to collaborate compared to others. This is inevitable since the nature and extent of collaboration depends to a large extent on the departments and takes place informally.

5.1.3. Professional Learning Community in the Mauritian Context

In order to better understand whether PLCs exist in the schools under study we have analysed both the quantitative and the qualitative data. Based on the quantitative data, we tend to conclude the presence of PLCs as discussed in section 5.1.1. However, after a closer look and an in-depth analysis of the actual practices, as revealed by the qualitative data in the two schools, the presence of the PLC seems to be less likely.

There is indeed a high focus on student academic performance. Initiatives are taken at school and departmental levels to improve academic performance. This is only one aspect of student learning; therefore we cannot say that the focus is on student learning in the broad sense. When it comes to collaboration in the department, it does not always lead to collective learning hence not always related to the PLC. There is no formal set up to develop and promote the PLC. Some collaboration and collective learning take place formally but mostly informally. The concept of shared values and vision vary from one school to another. For example, based on the interview data, it is seen to be well defined and understood in school E but not in school F.

On the whole we can conclude that elements of the PLC exist to some extent at the school level. There are differences at departmental levels within a school. We can say that there is an early form of a PLC even though it is not institutionalized. The structure for the PLC is not well defined as it is in schools where PLCs have been studied (Wiley, 2001; Visscher and Witziers, 2004; Vescio et al., 2006; Sigurdardottir, 2010; Ting, 2016), that is there is no formal planning and support for the PLC. Characteristics of the PLC are used to some extent and mostly informally to promote the school’s level of effectiveness. Educators, in general, feel the need to collaborate, learn together and make the effort to collaborate despite various constraints. This potential can be tapped to further promote the PLC in the secondary schools. The differences
between the departments within a school, as McLaughlin and Talbert (2001) suggested, was supported by this research. There were different levels of PLC in the different departments. Each department tends to have some specificity in its own way of functioning irrespective of school wide vision and culture. In some departments there are greater opportunities for the PLC to evolve due to certain factors. Based on that, we have to be careful about the differences in the PLC between schools. The diversity within the school would rather imply that it might be more relevant to study PLC at the departmental level rather than the whole school. This is especially so in the schools under study as there is little evidence of school wide capacity to support PLCs.

5.2. School Effectiveness and Professional Learning Communities

This section relates to the second research question. It measures the level of effectiveness in the 8 secondary schools and relates it to the existence of the PLC in the Mauritian context. School effectiveness has been measured in terms of student wellbeing and school academic performance. It is based on data obtained from the student wellbeing questionnaire and on the analysis of the school academic performance. The aim is to find out whether when educators work together in the form of the PLC, it promotes student wellbeing and academic performance, hence leading to greater level of school effectiveness as revealed by several studies.

School effectiveness is difficult to define and means different things to different stakeholders; yet its understanding is essential for schools as there is substantial evidence that schools do make a difference (Stringfield and Herman, 1996). School effectiveness is determined by school inputs and school processes (Purkey and Smith, 1983) and it has a complicated construct (Uline et al., 1998). In majority of research carried out, school effectiveness is measured in terms of student achievement (Uline et al., 1998), which may not reflect the holistic approach in education. Therefore, in order to provide an impartial picture of school effectiveness, we have considered student wellbeing and student academic performance as measures of school effectiveness.

We have used the 2 correlates: student wellbeing and academic performance in order to produce a holistic, fair and valid outlook of school effectiveness. Firstly we studied the level of student wellbeing through the student questionnaire; in terms of its 4 components:
student self-esteem
- social wellbeing
- student teacher relationship and
- student friend relationship

Secondly, we calculated the school performance coefficient (SPC) for the 8 schools by comparing the student academic input and output using two national examinations. For the input, we used the Certificate of Primary Education (CPE) results as students are admitted to secondary schools based on these results. Student academic output is measured in terms of School Certificate (SC) results after 5 years of secondary schooling. In the Mauritian context, the SC results are indicators of how secondary schools are performing academically and the % passes at SC are rendered public. They are posted on the Mauritius Examinations Syndicate (MES) website and are freely accessible.

5.2.1. School wellbeing

The student questionnaire measured 4 aspects of student wellbeing namely self-esteem, social wellbeing, student teacher relationship and student friend relationship. It gave us information about students’ self-satisfaction, their perceptions of their school and how they relate with their teachers and peers.

Based on data collected from the student survey, it is noted that in general, students in Mauritian secondary schools are confident about themselves and they are conscious of their duties as students; but they are not very satisfied with their personal achievements. Hoy and Miskel (1996) related school effectiveness to several outcomes, one of them is socio-emotional growth of students. Therefore, in general, students aspire to achieve more and they expect schools to support them in their quest.

Students love and are proud of their school but they do not feel sufficiently safe and at ease in their school. These findings are related to social wellbeing and school health in general. As Hoy, Tarter and Bliss (1990) emphasized, ‘a healthy school is a place where people enjoy spending their days, rather than a place to be endured’. They linked school health to higher student achievement; therefore social wellbeing is an important prerequisite for promoting student learning. Based on the student’s questionnaire, we can say that students are happy with their
schools, but schools need to make a bigger effort to create a more friendly and safe environment for the students to progress.

In general, teachers and students get along well and they share a warm and friendly relationship. There is also a good relationship among students in the schools. A healthy interpersonal relationship is an important correlate of school effectiveness (Uline et al., 1998). It helps to create a conducive environment for learning. However, there are few interactions between students and teachers outside classrooms, which probably show that there is a need for greater monitoring of student progress (Sammons et al., 1995); which is another important correlate of school effectiveness. In class usually teachers cannot give individual attention to some students in particular. Taking them individually outside the classroom at some other time; and guiding them help to improve their performance might help. Moreover, informal interactions outside classes can help to provide personal, emotional or psychological support to some students according to their needs.

According to the data collected on the four components of student wellbeing: student self-esteem, social wellbeing, student teacher relationship and student friend relationship, we can conclude that the Mauritian secondary schools are effective in promoting student wellbeing to some extent. However, they are not seen to be fully satisfying the needs of the students. The schools are expected to further support the students in their needs and aspirations. They need to provide a friendlier and safer environment, to create more opportunities for students and teachers to interact informally and constructively thus promoting a more positive school climate.

5.2.2. School Academic Performance

Student academic performance is one essential correlate of school effectiveness. A school cannot be said to be effective if student achievement is low. When school effectiveness is reduced to a single variable, it is generally student achievement (Uline et al., 1998). Student academic performance depends on many factors and the contribution of the school is crucial. The term input-output in research on school effectiveness was introduced in late 1980s and is still very relevant to-day, as schools are being assessed on certain performance criteria (Hanushek, 1989). There are several school-related characteristics which are considered as school inputs and school outputs. However, there are nuance views concerning school inputs. Through meta-analysis Darling-Hammond showed that input variables such as student-teacher ratio, teacher
certification, education and experience and per-student funding are associated with student achievement. On the other hand, Hanushek (1989); PISA (2000) and OECD (2001) found that these input variables play a small role in explaining student achievement. Considering these different views on student achievement and in order to have a fair picture of student academic performance, we decided to focus on school input and output in terms of academic performance only. The CPE results have been taken as academic input and SC results as academic output.

**School Performance Coefficient**

The school academic performance is taken as an input-output measure. CPE and SC results of the same students have been analysed and used to calculate the school performance coefficient (SPC) as given in chapter 3, section 3.2.2.3. The SPC has been carefully worked out after exploring a number of possibilities in order to eliminate all bias and to give the most accurate measure of the academic performance for each school. Despite a number of limitations due to unavailability of some sensitive data (individual results of students), the SPC for each school has been calculated and has been used as a measure of school academic performance. The table below shows the SPC values for the 8 schools under study. They have been sorted in decreasing order of the SPC.

<table>
<thead>
<tr>
<th>School</th>
<th>Type</th>
<th>School Performance Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>E</td>
<td>Low Input Private</td>
<td>2.62</td>
</tr>
<tr>
<td>G</td>
<td>Low Input Private</td>
<td>2.25</td>
</tr>
<tr>
<td>D</td>
<td>High Input State</td>
<td>1.8</td>
</tr>
<tr>
<td>B</td>
<td>High Input Private (Confessional)</td>
<td>1.68</td>
</tr>
<tr>
<td>C</td>
<td>High Input Private (Confessional)</td>
<td>1.67</td>
</tr>
<tr>
<td>A</td>
<td>Low Input State</td>
<td>1.16</td>
</tr>
<tr>
<td>F</td>
<td>Low Input State</td>
<td>0.75</td>
</tr>
<tr>
<td>H</td>
<td>High Input State</td>
<td>0.49</td>
</tr>
</tbody>
</table>

The schools have been classified according to the types: Low input/high input and state/private in order to compare the academic performance of the four types of schools (low input state, high input state, low input private and high input private). The school performance coefficient gives an indication of the school’s level of academic achievement. A low SPC value represents low
school academic performance as there is little difference between the input and the output results. A high SPC value represents an incremental gain in student performance over the 5 years of secondary schooling.

According to the values obtained for school performance coefficient, schools’ academic performance has been assessed. As discussed in section 4.1.1.5., and as shown in table 95, the schools with the highest SPC are the low input private schools. The school performance coefficients for these 2 schools are highest (2.62 for school E and 2.25 for school G). There is a considerable gap between these two schools and the others schools. This shows that private schools are more effective in improving academic performance of their students. Moreover, school E has the lowest academic input (CPE results) and the highest school performance coefficient. This indicates the largest amount of progress students have made during the 5 years of secondary schooling, compared to the other schools.

School D which is a high input state school ranked third (SPC is 1.8), after the two low input private schools. There is a large difference between their SPC values. School D is an elite school admitting the best students in the island and it is considered to be the best school because of its excellent academic performance. However, according to the SPC value, we cannot say so. The excellent academic performance is due to the outstanding academic input, but it is not the best school in promoting academic achievement.

The other three state schools, A, F and H have the lowest SPC values. School H (high input) and school F (low input) have the lowest school performance coefficients (0.49 and 0.75 respectively). These state schools are high demand; perceived to be ‘good’ schools and admit students with good CPE results but their academic performance based on the SPC values is inferior to the other schools.

The SPC values for the 2 confessional schools, B and C are very close (1.67 and 1.68 respectively). The school context for confessional schools is different from the state schools. They are also high demand schools and they cater for students of different abilities unlike the state schools. However, based on the SPC values, their academic performance is satisfactory and better than the state schools.

If we consider only the low input schools, we can see from table 88, that the private schools demarcate themselves from the state schools. As discussed above, the low input private schools
are right at the top with the highest SPC values. On the other hand, the low input state schools have low SPC values. Low input schools need to make additional effort to improve their academic performance, and it is clear from these findings that the private schools are more successful in this endeavour. Low input private schools get students who have not been able to secure a seat in a state school, hence their survival depends on their student input and their academic performance. Therefore, there is a greater need for them to prove themselves. Moreover, there is no transfer of staff, they understand the situation and work accordingly. There is also a stronger leadership as will be discussed later. On the other hand, this sense of belonging and accountability is less felt in the state schools as there is little ownership and staff (rector and educators) is regularly transferred. Another determinant factor which could explain the difference between state and private schools could be the school management. State schools fall directly under the Ministry of Education and are strictly under the control of the Ministry of Education through the educational zone. On the other hand, private schools are managed either by a school board or the manager under the aegis of the Private Secondary School Authority (PSSA). Hence state schools tend to have less autonomy compared to the private schools. On the other hand private schools have more liberty to take initiatives which can improve their school performance.

Section 5.2.1 and 5.2.2 have explored the extent to which Mauritian secondary schools are effective, based on the quantitative data collected from the student wellbeing questionnaire and on the school performance coefficient. The school performance coefficients show that schools have an impact on the academic performance of the students. Some schools are more effective in improving the academic performance of the students. Based on the schools under study, in general, we can say that private and confessional schools are more effective in improving the academic performance of students as compared to state schools. Most of the state schools under study are less effective as far as student academic performance is concerned. However, this cannot be extrapolated to all schools in Mauritius as we have studied only 8 schools and the SPC value for one state school (School D) is higher that some private schools.
5.2.3. School Effectiveness and Professional Learning Communities

In this section we will relate school effectiveness to the Professional Learning Community. That is, more precisely, to investigate the influence of the PLC on student wellbeing and school performance coefficient.

The main aim of developing Professional Learning Communities (PLCs) in schools is to enhance school effectiveness. The study by Sigurdardottir (2010, p. 406) shows that development of the PLC can improve the school’s level of effectiveness. In part 1 of the discussion, the PLC is seen as system wide and consists of 4 interrelated components namely: Shared vision and values; Focus on Student Learning; Collaboration: collective learning and shared personal practices; and Continuous improvement based on reflective inquiry. These 4 components of the PLC are directly linked to school improvement, the reason why in many developed countries, government policies are founded on the development of PLCs in schools. PLCs are seen as a model of teacher in-service for school improvement and enhanced effectiveness (Louis et al. 1996).

How far do these views apply to the Mauritian secondary school context?

We have seen in section 5.1 that, based on the quantitative data analysis of the educator’s survey there is some level of collaboration in the Mauritian secondary schools. After due consideration to the quantitative and the qualitative data, we can say that the schools show some characteristics of the PLC. In this part of the discussion, we will relate the PLC to the school’s level of effectiveness. Is the PLC in Mauritian schools linked to greater school effectiveness in terms of student wellbeing and academic performance?

The link between PLC and school effectiveness has been worked out only on quantitative data from the educator’s survey, student’s survey and the school performance coefficient.

Student Wellbeing and Professional Learning Communities

The relationship between PLC and student wellbeing was carried out using the Pearson correlation test as given in section 4.1.3.3.1. Results of the Pearson correlation tests carried out between the 4 components of student wellbeing and 4 elements of the PLC are given in Table 70.

Based on these results, we can say that there is a weak positive correlation between the PLC and the way in which teachers relate to the students. There is also a weak positive correlation between student self-esteem and elements of the PLC although it is less important than student teacher relationship. However, the associations between student social wellbeing and student
friend relationship and elements of the PLC are almost negligible. These findings show a correlation between the PLC and the way teachers relate to students. Probably through the PLC teachers develop more skills to monitor and motivate students. As Cordingley et al. (2003) concluded from their findings, ‘sustained collaborative professional development (CDP) could have a positive impact on teachers and pupils’. They also reported ‘greater confidence; enhanced beliefs among teachers of their power to make a difference to pupils’ learning; greater commitment to changing practice and willingness to try new thing’. These changes in teacher attitude and behaviour probably help to improve the student teacher relationship, hence contributing to greater student wellbeing. The correlation between PLC and student self-esteem is weak but positive. The absence of correlation between PLC and student social wellbeing shows that probably there are other factors which influence student social wellbeing. The negative \( r \) values between the elements of the PLC and student friend relationship show no link between the PLC and relationship among peers. Again this indicates that there are other factors which are influencing the relationship among peers. Probably, the student social wellbeing and student friend relationship are influenced to a larger extent by the competition for academic achievements that exists among students. There is a sort of rivalry among students for achieving better academic results. This is very much a reality in the Mauritian context as the results are rendered public and students who excel in their academic performance are rewarded at national level. There is a scholarship scheme for the top about 50 students who achieve the best results at Higher School Certificate level. With these scholarships, students have the possibility to go abroad in countries of their choice for their tertiary education.

**Student Academic Performance and Professional Learning Communities**

To understand the relationship between academic performance and PLC, we performed correlation and regression analyses using the school performance coefficients (SPC) and the mean scores for the elements of the Professional Learning Community (PLC).

Two-tailed Pearson correlation tests were carried out between the SPC values (as given in section 4.1.1.5.1.) and the scores for PLC. The Pearson correlation coefficient \( r \) for the correlation between SPC and PLC is .14. It indicates a very weak positive correlation between PLC and school SPC. As Bryk et al. (1999, p.771) cautioned, ‘the path between professional community and instructional improvement is not necessarily direct, because instructional
improvement may be only one of schools’ many purposes”. Therefore, the link between SPC and PLC may not be a direct one.

To further understand the link between SPC and PLC, we compared the mean scores for PLC for the 8 schools (refer to section 4.1.1.4.6., Table 39 and Figure 19). The analysis of variance showed a significant difference in the PLC for low input and high input schools. All 4 elements of the PLC are higher in low input schools compared to high input schools. Therefore, in the low input schools, it seems that there is a greater level of PLC.

In the 2 low input schools (School E and G) where the school performance coefficients are distinctly higher; there are also greater levels of PLC (mean scores of 4.6 and 4.5 respectively) as given in Table 39. In these 2 schools we can say that the PLC leads to greater academic performance.

The table below shows the SPC values and PLC scores for the 4 low input schools.

<table>
<thead>
<tr>
<th>Schools</th>
<th>SPC values</th>
<th>PLC scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low input private schools</td>
<td>E</td>
<td>2.62</td>
</tr>
<tr>
<td></td>
<td>G</td>
<td>2.25</td>
</tr>
<tr>
<td>Low input state schools</td>
<td>A</td>
<td>1.16</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>0.75</td>
</tr>
</tbody>
</table>

From table 96 we can see that the highest SPC value corresponds to the highest mean score for PLC. Also both SPC and PLC follow the same trends; it indicates a probable link between SCP and PLC. Increase in levels of PLC may lead to greater school performance. The low input private schools have significantly higher SPC and higher levels of PLC. This can be explained by the fact that low input schools need to make greater effort to pass students. As given in section 5.2.2.1 of the discussion, the two private schools are better able to achieve this given their specific school context. However, at this level we cannot draw general conclusions as we are considering only 4 schools.

The Regression analysis (refer to table 66) supports the positive influence of the PLC on school performance coefficient. Based on the findings from the 8 schools, we can say that schools with higher levels of PLC are more effective in promoting student academic performance. Hence, the direct link between PLC and student achievement (Phillips, 2003; Berry et al., 2005;
Lomos et al., 2011; Dufour and Reeves, 2015) can be supported by our findings in the schools surveyed. However, we need to be cautious as the significance level is at the 10% level due to the method of calculation (for each school we had only one value for SPC). Also this evidence is based on only 8 schools therefore, it cannot be generalized for all secondary schools in Mauritius. Therefore, we can say that there seem to be a positive relationship between PLC and school performance coefficient, but these findings do not allow us to draw clear and general conclusions.

PLC is just one factor that influences academic performance. There are other determinant factors which influence academic performance in the Mauritian secondary schools. As discussed earlier, there is a lot of emphasis on academic performance as the education system in Mauritius is very competitive. Tupin (2010, p.150) rightly referred to the Mauritian education system as favouring the elite and the emphasis is more on summative assessments rather than formative assessments as pointed out by Guskey (2007); while referring to schools as bureaucratically operated. These conditions are not in favour of the PLC, on the contrary they prevent the development of collaboration and collegiality. They tend to favour teacher isolation with the main focus on academic performance. Bhuwanee (1999, p.368) talked about

…not only the absence of cooperation and sharing but also a strong competition even some kind of rivalry among teachers who use the school and the system for personal gain and to attract more students for private tutoring.

This shows how the personal interest of the educators comes before the common interest of the school and the students. Therefore, there are many factors which favour competition both at the level of students and teachers. This encourages idiosyncratic behaviours at the expense of collaboration and collegiality which are the foundations for the PLC.

School effectiveness as seen earlier has a complicated construct and is multifaceted. It can mean different things for different actors. Considering the school academic performance as one correlate of school effectiveness, we can say that according to these findings, we can support a weak direct and causative link between the PLC and school effectiveness to some extent. As discussed, it is very complicated as there are other factors which influence school effectiveness. However, a PLC is definitely one systematic approach to promote school effectiveness as it creates greater capacity to improve school level processes which in turn can improve the
outcomes. However, in real situations there are barriers which prevent this collaborative mechanism. One main obstacle which has been discussed is the high competition for academic excellence which tends to promote individualistic behaviours and prevent collaboration and collective learning.

5.3. Leadership and Professional Learning Communities

This part of the discussion focuses on the school leadership and relates to the third research question: How is school leadership related to Professional Learning Community and in what ways are school leaders supporting the PLC in Mauritius? Firstly, we will explore the leadership patterns in the 8 secondary schools mainly in terms of instructional and shared leadership, and then we will link it to the existing levels of PLC. The first part of the question will be based on quantitative data from the educator’s survey. For the second part of the question, we will go in depth about how the school leadership is supporting the creation and/or development of the PLC. This part will be based on qualitative data.

The school leader has a key role to play in the school life. He is responsible for safeguarding the vision, mission, objectives and values of the school. All aspects of the school life directly or indirectly depend on the school leader. There is strong evidence from many studies that strong leadership is one of the most important factors of effective and successful schools (Bel et al., 2003; Fullan, 2001; Mortimore, 1993; Townsend, 2007).

Leading a PLC requires specific knowledge, skills and attitudes. It is an important resource in terms of principal commitment and shared leadership (Mulford and Silins, 2003). The patterns which are relevant to the support and development of the PLC are distributed and instructional leadership. ‘The joint action, characteristic of the PLCs, has been described as distributed leadership’ (Gronn, 2000; Spillane, 2006). Southworth (2002, p.10) shows that ‘instructional leadership is strongly concerned with the teaching and learning, including the professional learning of teachers as well as student growth’. Other leadership qualities are also important in sustaining the PLC. Based on our findings, it is noted that for the creation, development and sustainability of the PLC, the appropriate leadership patterns are needed. They may not be the same in all schools and is therefore, a dynamic model which is adapted to the school context. It is
a combination of all the necessary competencies and skills required by the school leaders to support the PLC. This leadership model has been termed as **supportive leadership**.

### 5.3.1. School Leadership in the Mauritian Context

School leadership is one key element in the school. In a school where there are multiple tasks to be carried out within a limited time, the focus cannot be only on the rector (head of school). ‘*The concept of leadership density is a viable replacement for principal leadership*’ (Sergiovanni, 1984). Therefore, school leadership is discussed in terms of leadership capacity involving leadership roles of all actors involved, and not only the role of the rector. The School Management Team (SMT) encompasses all the school stakeholders who hold leadership roles. They include the rector, the deputy rector and the senior most educators, who are heads of departments (HODs).

One of the objectives of the educator’s survey is to measure leadership in terms of instructional and shared behaviours and activities. In general, there is consensus on the exhibition of instructional leadership from the Rector, Deputy Rector and HODs that is, the School Management Team (SMT), as revealed by the high mean score of 4.29 on the five point Likert scale with a standard deviation of .803. That is, we can say that the SMT invests in terms of curricular activities. There is monitoring of classroom practices and reinforcement of student performance and staff development. As Bush (2007) rightly stated, ‘*instructional leadership focuses on the direction of influence, rather than its nature and source*’. Hence, the monitoring and supervision of the curriculum by the rector, Deputy Rector and HODs are being carried out satisfactorily. However, based on the survey, educators are less agreeable to the fact that they are provided with professional growth opportunities which is an important aspect of instructional leadership according to Hallinger (2005, p.233). In his instructional leadership model, the second requirement is ‘*fostering the continuous improvement of the school through school development planning*’ which is a call for school leaders to plan for staff professional development. This does not seem to be happening in the schools under study.

Engaging many people in leadership activity is at the core of distributed leadership. Distributed leadership takes the form of ‘*collective agency incorporating the activities of many individuals who work at mobilizing and guiding other teachers in the process of instructional change*’ (Spillane *et al*., 2001). According to both the quantitative and the qualitative data, the concept of
distributed leadership cannot be felt. There is the spirit of collegiality and cooperation, but the idea of many individuals mobilizing and guiding others in the process of instructional change is absent. Therefore, we find it more appropriate to use the concept of shared leadership as it gives a more practical picture of the actual situation. Shared leadership is team-oriented; it refers to school wide leadership involving all parties concerned. According to Ogawa and Bossert (1995, p.235), shared leadership ‘encompasses both formal and informal sources of leadership and conceptualizes leadership as an organizational property aimed at school improvement’. The school wide leadership capacity with the involvement of the SMT in the secondary schools has been addressed.

The mean score for shared leadership is 3.79 with a standard deviation of 1.01. This shows a relatively low score compared to instructional leadership \( M = 4.29, \ SD = .83 \), and it has a larger standard variation as well. As the score is below 4, it shows the tendency towards scale 3 which is ‘neither agree nor disagree’. Respondents believe that the ‘SMT incorporates advice from staff to make decisions’ but there is little sharing of power and authority, they believe that they are provided with little opportunity to initiate change and they do not usually feel that leadership is promoted and nurtured among staff. To sum up, we can say that shared leadership is limited and is not promoted in the schools under study.

Shared leadership is seen as a means to ‘maximize the capacities of all those within an organization’ (Gronn, 2000, p.334), but it is difficult to instil due to ‘cultural and micro political barriers’ (Harris, 2004). Mauritian secondary schools are ‘traditional hierarchies with well-defined positions and pay scales; as described by Harris (2000), therefore, shared leadership patterns are not a natural phenomenon and are hard to accept. As discussed by Poirel and Yvon (2012), the school leader finds himself alone in the change process and is confronted by teachers who are not willing to assume additional responsibilities. This situation does not promote shared leadership.

Based on the survey data, we can therefore, suggest that in the 8 secondary schools the tendency is more towards instructional leadership and less towards shared or distributed leadership. This view is confirmed by the analysis of variance (ANOVA) between instructional and shared leadership, whereby the significant value is .000 \(< .05\), showing a significant difference
between instructional and shared leadership. Hence, we can probably say that this applies to the Mauritian secondary schools in general.

A comparison among the 8 schools under study illustrates the types of leadership which exist in the schools. Schools B, E and G exhibit higher levels of instructional leadership and all these three schools are private schools. The analysis of variance was carried out on the school types, low/high input and state/private schools as given in Table 62. It reveals significant differences between the school types. Private schools exhibit greater instructional leadership compared to state schools. Low input schools exhibit greater instructional leadership compared to high input schools. Therefore, we can say that private and low input schools invest more in terms of improving curricular activities. In these schools there is greater monitoring of classroom practices and reinforcement of student performance and to some extent staff development.

Schools B, E and H exhibit higher levels of shared leadership. School B is a high input confessional school; school E is a low input private school and School H is a high input state school, showing that shared leadership is not related to the types of schools. Further analysis using analysis of variance shows no significant differences between the school types. Therefore, we can say that shared leadership does not depend on the school type that is whether the school is low or high input and state or private.

In this section, we have described the leadership patterns in the schools under study. We have seen that the directing role of the rector for the good running of the school has been addressed. However, for the PLC, we have focused mainly on instructional and shared leadership roles. In the next section, we will see how the school leadership in the 8 schools surveyed is related to the PLC. Evidences will be based only on the quantitative data.
5.3.2. Relating Leadership to Professional Learning Community

The existence of PLCs depends on school leadership, both at the school level and at the departmental level. Leadership is an important resource for PLCs. Leclerc et al. (2013) studied how the school leader can act as a pillar for the establishment of a PLC among special education teachers at the secondary level. Mulford and Silins (2003) also specified the role of school leadership in terms of principal commitment and shared leadership. This relationship between school leadership and PLC in the schools under study has been explored using the quantitative data. From the educator’s survey, two important findings can be summarized as follows:

- Both instructional and shared leadership exist in the 8 schools but to different degrees. Instructional leadership is more prominent compared to shared leadership.
- There is a strong focus on student learning and a relatively good level of collaboration which tend to indicate the presence of some aspects of PLCs.

The next step is to relate the leadership patterns to the PLC in the 8 schools. A number of correlation analyses have been carried out in order to explore this relationship. The Pearson Correlation Coefficients and Regression analysis show that instructional and shared leadership are positively correlated to PLCs. The $r$ values are .58 and .46 respectively. Based on these correlations, we can say that there is greater correlation between PLC and instructional leadership and smaller correlation between PLC and shared leadership. The Multiple Regression supports the influence of both instructional and shared leadership on the Professional Learning Community. The stronger influence of instructional leadership on PLC is probably due to some factors which are peculiar to the Mauritian context. For example, the high focus on student academic performance is supported by strong instructional leadership. On the other hand, shared leadership is not promoted because of the competition for achieving better results which favours individualistic behaviours.

Further investigation was carried out using the 4 elements of the PLC: shared vision and values; focus on student learning; collaboration continuous improvement and continuous improvement based on reflective inquiry. For instructional leadership, the correlations are all consistently high with $r$ values ranging from .45 to .58 as shown in table 34.

However, for shared leadership the $r$ values vary for the different elements of the PLC. There is a greater correlation between shared leadership and shared vision and values ($r = .44$) and
collaboration ($r = .41$). This shows the importance of shared leadership for educators to have a common vision and values; to collaborate and learn together. As Harris (2003, p.321) said ‘we need forms of leadership that support and nourish meaningful collaboration among teachers’. Therefore, we can say that shared leadership creates the collaborative culture and paves the way for the PLC.

The correlation between shared leadership and continuous improvement ($r = .373$) is positive but less than shared vision and values and collaboration. This shows that continuous improvement based on reflective inquiry is influenced to a larger extent by instructional leadership rather than by shared leadership. Continuous improvement is based on ongoing staff professional development and reflective practices which are directly related to curricular and instructional issues. This seems to be of greater importance in the Mauritian context in order to improve student academic performance.

The correlation between shared leadership and focus on student learning is smallest with an $r$ value of .29. The influence of shared leadership on focus on student learning is least compared to the other elements of the PLC. This confirms the importance of shared leadership mostly in the functioning of the PLC that is, in promoting shared vision and values and collective learning. On the other hand, instructional leadership has a greater impact on focus on student learning. This can be explained by the importance of instructional leadership in improving student learning. Southworth (2002, p. 82) shows that ‘instructional leadership is strongly concerned with teaching and learning, including the professional learning of teachers as well as student growth’. Our analysis therefore, supports Southworth’s findings.

Instructional leadership informs and guides the process of PLC. It provides all the necessary pedagogical skills, expertise and competencies to do so. Murphy and Hallinger (1987) consider the main curricular focus as the backbone of the effective school model. In the Hallinger’s instructional leadership model, the instructional leader works on the shared sense of purpose, foster continuous improvement, organize and monitor a wide range of related activities and create the appropriate climate and culture. All these are essential requisites for the PLC. That is, the instructional leaders (school leader and heads of departments) play an important role to drive the PLC.
On the other hand, shared leadership creates and supports the necessary environment for the PLC to evolve. It empowers all actors to participate in leadership roles. At a more developed stage, distributed leadership guides the PLC. Harris (2009) described distributed leadership as primarily concerned with interdependencies that shape leadership practice. He stated that distributed leadership provides the infrastructure that holds the community together, as it is the collective work of the educators that creates and sustains successful PLCs.

Hence, for the PLC to work, both instructional and shared leadership are required. As discussed in part 1 of the discussion, in the secondary schools under study, the PLC is in its early stage of development. At this stage, probably instructional leadership is more important to guide and monitor the PLC processes. On the other hand, the collaborative culture and collegiality are important requisites for the development and evolution of the PLC. As Williams et al. (2008) reported one major obstacle to create and sustain a PLC is teacher isolation. Sigurdardottir (2010) also reported that majority of teachers in the schools they study knew very little about each other’s practices, more so in the less effective school. Therefore, shared leadership is very important to promote the collaborative culture required for the PLC to work.

An important manner in which leadership can influence the PLC is indirectly via the school factors. The 2 school factors which have been measured by the educator’s survey are school climate and school structure. School leadership is seen to provide the necessary climate and structure to support and sustain the PLC. This relationship is discussed below.

The Pearson correlation tests show that both instructional and shared leadership have a similar influence in school climate (r values are .31 and .35 respectively). The two leadership patterns have a greater and similar influence on school structure (r values are .55 and .51 respectively). This shows greater correlation between leadership and school structure compared to school climate. School structure in turn is more correlated to the PLC with an r value of .54. The Multiple Regression model, showing the influence of instructional leadership, shared leadership, school structure and school climate on PLC, supports these findings as well. Instructional leadership has the greatest impact on PLC, school structure has a small but significant influence, whereas school climate has no significant influence on the PLC.

School climate is based ‘on patterns of students’, parents’ and school personnel’s experience of school life and reflects norms, goals, values, interpersonal relationship, teaching and learning
practices and organizational structures’ (NSCC, 2013). In short, school climate is the product of all the interactions of the school experiences. It is built over time and hence school leadership has less influence on the school climate as compared to school structure. Nevertheless, school leadership can help to create a supportive climate in order to sustain the PLC.

School leadership has a direct bearing on school structure, in terms of the planning, resources and communication. A supportive school structure is seen to be positively associated with the PLC ($r = .54$). Moreover, the Regression model shows that school leadership influences the PLC to a large extent by providing a supportive school structure. However, the school leader does not have full control of the school structure. There is a well-defined hierarchy which is to a large extent controlled by the higher authorities. As Williams (2008, p.11) claims,

*Educational reforms and demand for school improvement are too often rooted in a bureaucratic system that is incapable of stimulating and sustaining meaningful improvements in teaching and learning.*

Hence, the school leadership has limited control on some aspects of the school structure, but some school wise initiatives can lead to the promotion of the PLC.

To further investigate whether there is an association between leadership and PLC in the 8 schools, a correlation analysis was carried out for the 8 schools. The correlation coefficients for the cross between instructional and shared leadership and the PLC are given in table 97.
Table 97. Correlation between Leadership and PLC

<table>
<thead>
<tr>
<th>School</th>
<th>Instructional leadership and PLC Pearson Correlation Coefficients (r*)</th>
<th>Shared Leadership and PLC Pearson Correlation Coefficients (r*)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A low input state</td>
<td>.182</td>
<td>.439</td>
</tr>
<tr>
<td>B low input private</td>
<td>.169</td>
<td>.361</td>
</tr>
<tr>
<td>D high input state</td>
<td>.709</td>
<td>.811</td>
</tr>
<tr>
<td>C high input private</td>
<td>.634</td>
<td>.467</td>
</tr>
<tr>
<td>E low input private</td>
<td>.368</td>
<td>.244</td>
</tr>
<tr>
<td>F low input state</td>
<td>.751</td>
<td>.600</td>
</tr>
<tr>
<td>H high input state</td>
<td>.171</td>
<td>-.062</td>
</tr>
<tr>
<td>G low input private</td>
<td>.421</td>
<td>.404</td>
</tr>
</tbody>
</table>

*. Correlation is significant at the 0.05 level (2-tailed)

These correlation coefficients do not show common trends or conclusive associations between instructional leadership, shared leadership and PLC. Despite the fact that instructional leadership is more pronounced than shared leadership in the schools, the correlations between these two types of leadership and PLC differ. For 3 schools (A, B and D), the correlations between shared leadership and PLC are greater than instructional leadership and PLC. For 4 schools (C, E, F and H), the correlations between instructional leadership and PLC are greater. For one school (G) the correlations between instructional, shared leadership and the PLC are almost the same.

The correlations between shared leadership, instructional leadership and PLC are different and specific to each school. They depend on many factors: the school leadership patterns, the nature of the PLC if it exists and the prevailing school conditions. The school context surely has an impact as the values for each school are different. From these data, we cannot say that PLC is correlated to either instructional or shared leadership. Probably other leadership patterns which are beyond instructional and shared leadership could be more relevant to the PLC. These findings support the proposal of supportive leadership as given in section 2.2.7. With due consideration to all the leadership patterns which support the PLC, supportive leadership seems to be promising. Supportive leadership seen as a blend of instructional, shared, distributed and transformational leadership could be more appropriate for the development and sustainability of the PLC. There is no right formula for this type of leadership as it may vary from one school to another depending on the prevailing school conditions. It is a dynamic model that can be adapted
to the schools depending on their needs. It goes in line with the fact that each school leadership is different and specific as revealed by these findings. It depends on many school and human factors.

Based on the literature review, the theoretical framework and the theoretical model, leadership influences PLC either directly or indirectly. In this section, we have related leadership to the PLC based on the survey data. In order to have a more refined picture of this relationship, relevant interview data will now be analysed. It will answer the second part of research question 3: ‘How is the school leadership supporting the development of the PLC’. We will therefore, focus only on the 2 schools as per the qualitative analysis.

5.3.3. Leadership support to the Professional Learning Community

The 2 schools were selected based on the level of collaboration as given by the survey data. Among the 4 low input schools, one school with maximum collaboration and one with minimum collaboration have been selected. These 2 counterexamples are school E with a higher level of collaboration and school F with a lower level of collaboration as shown in table 89. It is to be noted that the difference in the mean scores is not very high (4.58 - 4.19 = 0.39) and they are not statistically different. On the other hand, the qualitative data provide important details about the nature of collaboration and PLC in these two schools.

School E is a low input private school. It is a well-established school with more than 50 years of existence. It is managed and led by the school manager and the rector. The rector is directly responsible for the school management and the manager has more of an advisory role. Being a private school, there is no transfer of rector or educators. School E is a big school with more than 900 students and it is co-educational.

School F is a low input state school. It is a rather young school with about 10 years of existence. It is managed and led by the rector who is directly responsible for the school management. Like all state schools, transfer takes place, both for the rector and educators. School F has around 800 students and is co-educational.

Based on the mean scores, we can say that both schools have good levels of collaboration and PLC. Moreover, according to the analysis of variance for these 2 schools, there is no significant difference in the mean scores for the PLC. However, the qualitative analysis shows marked differences in the school management, leadership, collaboration and the PLC.
In school E there is a well-defined shared vision. Based on the interview with the rector and the HODs, values seem to be shared both for the school management and for the staff. A collaborative culture has become established over the years. There is a strong and systematic focus on student learning as described by the rector and the HODs. In all, we can say that there are evidences of the functioning of a form of PLC, although it is not formally established. On the other hand, in school F there are some collaborative efforts but with little collective learning. HODs are not well aware of the school vision and values. They are making the effort to improve student learning but they do not function in a systematic way. The PLC seems to be in a very early stage. In order to understand clearly how the PLC is functioning in the two schools and how the rector and the HODS are supporting it, we will refer to the interview data.

**How the Rector supports the Professional Learning Community**

Based on the interview data, we can say that the two schools, E and F have allowed us to compare two different styles of leadership and their support to the PLC. The two school contexts are totally different, school E is a well-established school managed by the rector and the manager. It is a private school with no transfer of educators. School F is a young school with a young teaching force. It is a state school where transfers take place. School E and F illustrate two contrasting examples.

Shared vision and values are the guiding principles for the PLC. In school E, the school vision seems to be shared and well understood by the rector and the HODs. As one of the HODs mentioned *We all look at the same vision. We put the child at the centre of learning*. The rector talks about aligning their vision and work together towards the success of the school. These clearly show that the school vision is well articulated and there is common understanding of the shared school vision. Another interesting aspect concerning values is the rector’s influence on student support. These findings confirm what Michael and Sackney (2000) claimed, that the principal can influence values by paying attention to or advocating for certain issues. This is exactly what the rector of school E is doing. He advocates for reinforcement of learning for all types of students. Not all school leaders hold such strong beliefs or attitudes. Unlike school E, for the rector of school F, instilling the concept of shared vision and values does not seem to be a priority. This is reflected by the attitude of the HODs as they do not seem to understand the importance of shared vision and values. This shows that the role of the rector in conveying the school vision and values is primordial and it has an impact on the school community at large.
Developing a clear vision is not the hardest task for the rector; it is rather to reach consensus among all staff and to achieve a shared vision. Therefore, this is a crucial step through which the rector can support the PLC as shown by these two examples.

School E exhibits a strong and positive climate and culture which can be felt from all the discourses. This is reflected by a mutual understanding, respect for individual differences, sharing, collaboration and the commitment to support all students. These values are reflected in the school culture. As the rector mentioned

*The idea is to empower them (educators) to trust their colleagues and to allow them to think that they are part of the family. I think we need all of these if you really want to make collaborative progress in a school.*

Educators are encouraged to trust their colleagues and to work together as a family. The rector is well aware that these interpersonal skills are essential for developing a positive school culture and he tries his best to do so. This positive culture in turn paves the way for the PLC. Hence, the role of the rector in developing the appropriate climate and culture is essential to support the PLC. The same views have been expressed by the HODs. One HOD (physics) said that ‘...when you come to work here, it is like you are in a ... community. Everything has to be done collaboratively’. That is from the very beginning all staff understand clearly what is expected from them.

The rector and the HODs of school E understand clearly their role in promoting student academic performance. As one HOD said ‘we put the child at the centre of learning’; and the rector reported firmly ‘we are here to support hard working learners. I think this is the mission of this institution’. They all speak the same language and they believe in what they are doing. The rector is well informed about the learner’s needs. He talks about the typology of the learners. He explains

*... being a mixed ability institution means that you have got different levels of student, you will be having high flyers, above average, below average, border line and failures. So you are working with at least 7 types of students at .... The main difficulty lies in how are you going to ensure that every student is able to fully realise his potential?*

Understanding the needs of the different types of learners is important to work on specific teaching strategies. The same concerns are shared by the HODs. As one HOD mentioned ‘all students across the spectrum from below average to excellent...’ They also mention different
types of learners: *high flyers, highly motivated, shy and introvert*… and how they adapt their teaching strategies accordingly.

These qualitative data indicate that the rector and HODs carry out a careful analysis of their learners’ needs and they work on multiple strategies for action. These strategies are well defined and common for the school management and the HODs.

The language used with the students has been evoked. As one HOD mentioned

> *We have been given very strict sort of warning if I can say, but advice rather, from the instructional leader, that we should adopt a language which will not hurt the feelings of students, downgrade them, and humiliate them.*

This shows the rector’s concern about the students and due consideration is given in order to motivate them to learn. The strong message from the rector is understood by the HODs and educators.

It is interesting to note the involvement of the rector in guiding and supporting the different departments. All HODs appreciate the efforts made by the rector. As one HOD says: ‘*The response we have depends on what treatment we receive! The manager treats all staff as his family*.’ The rector shows his appreciation for his staff. He says ‘*My staff compared to other institutions is devoted and committed*.’ Based on these descriptions, we note the feeling of oneness and the element of trust.

It is also to be noted that the rector is very much in touch with what is happening in schools worldwide and make use of some good practices to improve his school. He uses his experience and knowledge to guide and motivate his staff and his efforts are well appreciated. This indicates that his support is valuable and appropriate.

As stated earlier, there is some form of PLC in school E although it is not formally established. The rector is fully supporting the departments in a number of ways as described above. The HODs also have a strategic role in guiding and supporting their departments. Together, the rector and the HODs are assuming their roles fully and are promoting the collaborative effort for improving student learning. We may therefore, consider school E as a PLC model in the Mauritian context.

School F operates differently altogether. The notion of school vision and values does not seem to be well understood. The interview data do not reveal a collaborative culture. Focus on student
learning takes place but it is not well organized as in school E. The involvement of the school management in promoting student learning has not been evoked. Initiatives are taken mainly at departmental levels.

The rector and HODs refer several times to the poor performance of their students and they consider the students’ ability as a major obstacle. The common corrective measure proposed is the running of remedial classes. The rector did not say anything about strategies for improving student learning. There is no evidence that the rector is guiding the student learning process. She expects the HODs and educators to take appropriate actions. To illustrate this point, referring to co-teaching, she said ‘It was recommended to have common planning. They (educators) initiated themselves.’ Co-teaching has been introduced and supervised by the rector, but once it has been instilled, she expects the educators to move forward. This shows that the rector relies on the HODs and educators to take appropriate measures at their departmental levels. The HODs act at the level of their departments and together with their colleagues, they take appropriate actions which they deem fit. The rector does not seem to be well informed about how student learning is promoted at the departmental level.

Collective learning and shared personal practices occur to some extent in the departments mostly in an informal manner. One example of a collaborative strategy which led to team learning is co-teaching which has been described lengthily in section 4.2.2.4. Through co-teaching, educators had the opportunity to plan, conduct and reflect on their lessons together. This is one example of how the rector promotes and supports collective learning.

School F is a young school, the rector and staff have little experience. Therefore, the learning curve is steep. They are all learning from their experience and from their colleagues. As the rector mentioned ‘They didn’t really know about the teaching profession so whatever came to them, they took it as a learning process’. Even the HODs admit that they learn many things from their daily practice. However, continuous improvement is not taking place in an organized and planned manner. The rector has little role or influence on this process.

There is no sign of systematic planning for the curricular activities at the school management level. The rector and HODs are not aware of the learners’ needs as described in school E. On the whole, there is little evidence that school F is performing as a PLC. The rector does not seem to
be contributing to the promotion and support of the PLC. She has her own style of managing the school. The collaborative culture and values that promote student learning cannot be felt.

So, we have seen 2 schools which are actually two counterexamples, whereby one of the main differences lies is in the leadership style and support to the PLC. Although the PLC is not formally established in Mauritian secondary schools, it can be said to be present to some extent in one school and to a lesser extent in the other school. This shows that the support of the school leadership is a determining factor for the PLC to flourish.

**How Heads of Departments support the Professional Learning Community?**

In secondary schools, educators teaching the same subject work together in the departments. Each department is led by the HOD who is responsible for the curricular activities in the department. Therefore, each department can be considered as a team where collaboration and team learning take place. In both school E and school F the nature and extent of collaboration differ from one department to the other. The team dynamics within one school are different for different departments. There seems to be more collaboration and collective learning in some departments.

Interviews with the 3 HODs of the 2 schools have allowed us to compare the functioning of the departments in the two school settings. One key principle is that the department is guided by the school vision, values, school climate and school culture. Based on the interview data, we can say that these school factors determine to a large extent the functioning of the department, as there are many commonalities in the departments within one school. One example from school E is: consensus on the emphasis on improving performance by using a number of planned teaching strategies and the collaborative culture. One example from school F is: the focus on students with learning difficulties and remedial work. However, there are also some important features of the department which do not seem to be a consequence of the school factors. For both schools, there are differences in the way each department functions. For example, in school E, in the physics department, there seem to be more collaboration and informal exchanges between the colleagues. In the English department, they seem to focus more on attending to the various students’ needs. In school F, there are more interactions and sharing in the physics department. In the English department, there is a general concern about improving language skills. These examples illustrate the way each department develops certain configurations which may not be spelt out in the
shared school vision and values. It is more like a micro climate evolving in the departments within the school. Each department works as a unit of learning. Its nature depends on certain factors pertaining to the department including: the leadership style of the HOD; the attitude, experience and age of the members; the nature of the subject and the opportunities for collaboration.

Therefore, the attempt to describe the PLC at the school level may not be legitimate to all departments. In school E where some aspects of the PLC have been described, the physics department shows more characteristics of the PLC namely: peer observation, sharing of best practices and reflecting together on teaching strategies. School F has been described as a school with a lower level of PLC, nevertheless, in the physics department there is a relatively good level of team learning and sharing of good practices. This is one peculiarity of secondary schools as the educators work together around their subject areas in small teams. In describing the PLC at the school level we may lose the subtlety at the level of the departments.

PLC at the level of the departments is therefore very significant. It is guided by the head of department and it improves learning in the department. When we refer to improving instructional practices, collective learning and reflective practices for continuous improvement, the unit of activity is the department. **In secondary schools, therefore, we should pay attention to both school-wide and department-wide PLCs.** The role of the rector and the HODs are both very meaningful and determinant. The rector provides the big picture and the HOD accompanies his team in the PLC adventure. Hence, both the rector and the HODs have certain specific roles in supporting the PLC. If these roles are not fulfilled, it becomes difficult to develop and sustain the PLC as illustrated by school F. As Ronfeldt *et al.* (2015, p.510) stated, even in the absence of school-wide collaborative structures, individual efforts to collaborate should not be overlooked; school leaders and teachers should find ways to encourage such efforts.

The nature of subject area can be instrumental in promoting collaboration and team learning. For example, there is more collaboration in the Physics department of both schools E and F. Therefore, collaboration depends a lot on certain factors pertaining to the subject. The practical nature of the subject calls for greater interactions and consultations. Working together in the same laboratory creates the proximity which is another factor that promotes collaboration.
Therefore, it can be said that for collaboration and collective learning to take place, the needs should be felt and opportunities should be created.

**The Need to support the Professional Learning Community**

Working collaboratively in the form of a PLC does not happen spontaneously. It is built over time and requires relevant skills and competencies. It develops when the need to collaborate and learn collectively is felt. Such evidences can be derived from the interview data. Although the concept of the PLC is not formally established in the schools under study, some schools have significantly higher mean scores for the PLC. They are the low input schools (refer to table 62). The low input schools have a greater challenge to improve the academic performance of the students. They need to make greater effort to improve student learning. This is an important aspect in Mauritius, because the results are publicized and schools are rated according to their academic performance. The low input private schools are low demand schools and if they do not perform, they will have difficulty in enrolling students in form 1. School E is such an example. School E has the highest score for the PLC and the highest School Performance Coefficient (SPC) as well. School E admits students of low ability. So, it is a challenge for the school to improve its academic performance. In order to achieve this target, the school management and educators invest in collaborative learning by focusing on student performance. There is the need to collaborate in order to improve learning significantly. It can be said to be a success as the school scored the highest SPC.

On the other hand, high input schools do not see the need to collaborate. On the contrary, there is more competition among the students for achieving excellent results as the top performers are awarded scholarships for further studies. This competition promotes individualistic behaviours and tends to prevent collective learning. Moreover, educators are involved in providing private tutoring, they tend to work in isolation and compete with other educators. School D is such an example, and this leads to little or no collaborative efforts as discussed earlier.

In the low input private schools, like school E, there is a greater sense of belonging to the school and greater stability as educators are not transferred. Over the years they have developed a strong positive school culture and climate. They understand that they can only succeed by putting their forces together and they collaborate for their survival. In the process, the whole school benefits.
Whereas, in state schools, rectors and educators are transferred regularly, so there is no continuity in the work and in general educators feel less committed.

For the PLC to work, the support needs to come from all parties: the rector, HODs and educators. Each team member is important and contributes to the learning community. The idea of supportive leadership reflects this multifaceted and multilevel nature of the leadership roles to sustain the PLC. Each school context is unique and needs to develop the appropriate supportive leadership for the PLC to work. As Harris and Jones (2017, p.31) reported ‘many teachers noted that they found it difficult to maintain and sustain Professional Learning Communities within their schools without the support of senior leadership’. As discussed in the theoretical framework, supportive leadership involves leadership at all levels as a form of leadership capacity. It is a blend of instructional leadership, transformational leadership and distributed leadership. The support of the school leader in providing all the necessary conditions for the PLC is a determining factor. He provides the opportunities and encourages everyone to participate in leadership activities. Any shortcomings may impact negatively on the PLC and staff does not feel encouraged to give their best.
CONCLUSION

This conclusion section is a summing up of the main findings of my investigation in relation to the literature review and the theoretical framework. The main limitations in terms of methodology and available data have been identified. It also highlights the perspectives for policy making to encourage schools to embark on Professional Learning Communities (PLCs) for higher levels of school effectiveness as well as practical perspectives based on the results which can be used to improve student achievement and school effectiveness through greater collaboration. It also provides theoretical perspectives which can guide further research on PLCs, collaboration, school leadership or school effectiveness and school improvement in the Mauritian context. It has been organized in three parts: the summary of the main findings, limitations and recommendations.

Summary of the main findings

We started this investigation by posing questions about ways to increase the level of school’s effectiveness. Theories about PLCs are indeed promising as they lead to an ongoing learning process and continuous improvement while the staff inquires together into their practice and promotes student learning. This study is focused on the role of the school leadership in promoting PLCs with the aim of increasing the school’s level of effectiveness. In other words, the aim is to see whether when educators work collaboratively in the form of a PLC, there is greater student wellbeing and academic performance. Having obtained a positive response from the educator’s survey about collaborative work and PLCs, we continued the investigation to find out about its effects on the school’s level of effectiveness in terms of student academic performance and wellbeing and how it is influenced by the school leadership. The three research questions were as follows:

1. *Are educators in Mauritian secondary schools working collaboratively in the form of Professional Learning Communities?*

2. *Is Professional Learning Community linked to school effectiveness?*

3. *How school leadership is related to Professional Learning Community and in what ways are school leaders supporting the PLC in Mauritius?*
The main findings indicate that where educators are working collaboratively, there is some collective learning and better academic performance. School leadership is a determining factor in the promotion of the PLC.

At the beginning of the thesis, a theoretical model was proposed. It represents the school as a PLC with the influence of school leadership and school factors which together determine the school’s level of effectiveness. The PLC is represented by all the characteristics from the literature and provides a continuous cycle of learning as staff reflects and enquires into their daily practices. This model was tested in the Mauritian context and was slightly modified in the light of the results obtained.

Firstly, the predominant focus on student academic performance in the secondary schools brought some distortion in the theoretical model. The priority in all schools is to improve academic performance which seems to be the driving force for the administrative and teaching staff. School leaders and educators in Mauritius are not familiar with the term Professional Learning Community. There is no universal definition of the PLC, but there are common characteristics which have been clustered into the 4 elements in the theoretical model and tested in the 8 schools surveyed. These characteristics have been the basis for this research and considering the research findings, we can now reflect on the concept of the PLC as it is given in the theoretical model. PLC as per the reviewed literature is a system-wide model of functioning (Bolam et al., 2005 and Stoll et al., 2006), where the school vision and values are shared (Andrew & Lewis, 2007) and focused on student learning (Hord, 2004). Structures are put in place for collaboration, collective learning and shared personal practices (Newmann & Wehlage, 1995), and continuous improvement based on reflective practices (Hord, 2004). These elements of the PLC are considered as effective pathways for school improvement by several researchers as mentioned in the literature review. However, the model of the PLC as described in the literature has been studied mainly in the western countries like US, Canada, England, Wales, Iceland and Netherland; and countries like Australia and Japan. All these countries are developed countries, where the concept of the PLC is relatively well known and supported by educational policies. For instance, ‘the Province of New Brunswick has chosen to support the development of the PLC concept throughout the public school system’ (Williams et al., 2008, p.2). This is not the case in Mauritian secondary schools. PLC is not formally established in the secondary schooling
system and there are no educational policies which support the development of PLC in schools. PLCs where they exist depend mostly on informal initiatives at school level.

The level of the PLC has been measured in terms of its characteristics in the form of its 4 elements. Based on both the quantitative and qualitative analyses we can say that shared vision and values do not seem to be well understood and do not seem to be the driving force in the schools studied. There is a strong focus on student academic performance, one aspect of student learning which may not necessarily lead to the PLC due to the fierce competition for academic excellence. There is cooperation (examples given in table 93) among the staff but little collaboration that leads to collective learning (examples given in table 94). Opportunities for continuous improvement based on reflective inquiry are scarce and schools do not invest in these types of professional development. We can say that some forms of PLC occur mostly in an informal manner and depends on initiatives at school or departmental levels.

Therefore, we can conclude that though there are no formal initiatives to promote the development of PLCs in the schools, educators do collaborate and some collective learning occurs mostly informally. Each school has made its own path and exhibits different levels of the PLC. Also, within the school, there are differences between the departments. Some departments are better able to function as PLCs irrespective of the school wide initiatives due to some factors inherent to the department, namely the role of the Head of Department (HOD), interpersonal relationships, nature of the subject and physical proximity. These nuances were not revealed by the educator’s survey but could be derived from the interviews of the HODs.

Secondly, though PLC is not formally established in Mauritian secondary schools, the schools which exhibit some elements of the PLC are seen to have higher school performance coefficients. This supports the literature where the PLC has been associated with greater student achievement (Phillips, 2003; Berryl et al., 2005; Rusch, 2005; Lomos et al., 2011; Dufour Reeves, 2015). Therefore, we can suggest that schools with greater levels of PLC achieve better student academic performance. However, this conclusion cannot be generalized as our sample consists of only 8 schools and the qualitative data are based on two schools only.

Thirdly, what came out is the demarcation between state and private schools. The private schools surveyed show greater school performance coefficient compared to the state schools (except for one high input state school). The two low input private schools under study admit students with
lowest ability but scored the highest in terms of school performance coefficient. Therefore, these private schools can be said to be more effective in terms of improving student academic performance. However, no general conclusion can be drawn to this end as only 2 such schools have been studied.

Moreover, based on the interview data, the low input private school showed relatively higher levels of PLC. The educators work in a more organized manner which reflects the school’s vision and values. There seems to be more collaboration and collective learning at the level of the departments. The result is greater student academic performance as given by its highest school performance coefficient. In such low input private schools there is a greater need to collaborate as the students are of lower ability and educators need to make greater effort for students to succeed academically. In private schools there is no transfer of staff, there is a greater sense of belonging to the school and a specific school culture which has been established over the years. On the other hand, in state schools, there is less collaborative work and little effort to promote the PLC. The school performance coefficients in these schools are smaller, despite the fact that they enrol students with higher abilities. Therefore, it can be said that private schools are more effective in promoting academic achievements compared to state schools although they are not high demand schools. In state schools there is regular and frequent transfer of educators and rectors, probably this could be an obstacle in the establishment of a strong school culture. Moreover, state schools are directly controlled by and accountable to the Ministry of Education through the educational zones and they tend to have less autonomy. On the other hand, private schools are managed by a school board or the manager under the aegis of the Private Secondary School Authority (PSSA) and they have greater autonomy in managing their school. This difference in the school management could be another factor which contributes to these disparities between state and private schools regarding the collaborative culture and the school academic performance.

Fourthly, one major obstacle in the development of the PLC is the focus on academic performance. Schools are rated based on their performance at School Certificate (SC) and Higher School Certificate (HSC) examinations. Students who excel at HSC level are awarded scholarships and there is a fierce competition among schools to rank students at national level. Therefore, in this excessive competition for academic excellence, idiosyncratic behaviours develop among students and educators. The best performing students prefer to work individually
and they depend more on private tutoring rather than on school work. This explains the differences in the level of the PLC between the private schools which enrol students of lower abilities and the state schools which enrol students of higher abilities. In state schools therefore, there tends to be greater competition for academic excellence which promotes individualistic behaviours whereas in private schools there tends to be greater effort to improve school performance which promotes collaboration. In the end, we can see that those who make the effort to collaborate and learn together are more successful in improving the academic performance. This confirms the literature on how PLCs can lead to improvement in academic achievements. Furthermore, the PLC is associated with better student teacher relationship, showing a positive effect of the PLC on one aspect of student wellbeing and the school climate in general. These findings therefore, show the importance of working collaboratively as a PLC.

School leadership contributes significantly in developing and supporting PLCs. The findings reveal that a strong supportive leadership is essential for the PLC. Leadership has been considered as a collective capacity and is referred to as the School Management Team (SMT) comprising the school leaders (namely rector and deputy rector) and heads of departments. The school leader has the important role of communicating the shared vision and values and creating a positive and collaborative culture. When the school leader accompanies and supports the learning process, educators understand clearly their mission and together they work towards a common goal. The school leader also needs to be informed about what is happening elsewhere and use scientific data to improve his/her school. Educators thus, feel more confident and motivated to pursue their common goals.

Heads of departments play a strategic role in their respective departments in guiding and supporting the PLC. They translate the school shared vision and values into actions and bring about initiatives to further enhance this collaborative process. In the secondary schools studied, there are differences in the way the departments are functioning within a school though all of them share the same vision and values. Within some departments there is more collaboration and collective learning which are probably due to the nature of the subject, the leadership role of the HOD and the shared physical space. This shows the uniqueness of each department which has all the potential to develop into a PLC given the appropriate conditions. Hence HODs can further facilitate the development of the PLC in the department if they are given greater autonomy.
Leadership support to the PLC therefore, occurs at all levels and each stakeholder has an important role to play. Shared leadership involves both formal and informal leadership activities which are instrumental in the functioning of the PLC. However, both the quantitative and qualitative data show little shared leadership in the schools studied. Also, as has been discussed earlier, teacher isolation is an obstacle in the promotion of the PLC and this is one main difficulty schools are facing, especially the state secondary schools.

Therefore, school leaders at all levels need to show the right attitude; they should have the knowledge and competencies to support the PLC. They need to be conversant with all leadership traits: directive, instructional, shared, distributed and transformational. They need to understand and study their school context and apply the appropriate leadership traits in specific situations. It is a dynamic process and is different for different schools and at different times. This form of supportive leadership nourishes and drives the PLC for higher levels of school effectiveness.

The case studies of the two schools illustrate this aspect of leadership support. In the school where the leader is well informed, clearly communicates the school vision and values and emphasizes on attending to students’ diverse needs and the importance of collaborative work, there seem to be greater levels of the PLC as the HODs understand clearly what is expected of them. This in turn leads to greater school academic performance. The second school where the school leader did not mention about the importance of the school vision and values and leaves it at the level of the department to initiate actions, there is cooperation and some collaborative effort, but the processes are not clear and well defined to the staff. The HODs may be doing their best at the level of their department, but there is no alignment in their actions and they do not seem to work in a systematic manner. The idea of the shared school vision and values is not felt and there is little collaboration and collective learning. In this school the academic performance is lower although educators are doing their level best. These two case studies illustrate the importance of the supportive leadership for the development of the PLC which in turn leads to greater academic performance.

The development of the PLC at school level needs to be supported by higher authorities. In Mauritius, at present, there are no educational policies that support the PLC. Even in the actual reform, that is the Nine Year Continuous Basic Education (NYCBE), the focus is on improving student learning and on reducing competition at a tender age. However, PLC can be one
important means to achieve the objectives of the reform. Many constraints exist which tend to prevent the development of the PLC. Some measures can be taken at school level, like promoting a shared vision and values and instilling a collaborative culture. Other constraints for instance, heavy work load and time constraints cannot be addressed at school level, as they are criteria set by the Ministry of Education and all schools need to comply. For the PLC to work, the support is needed not only at school level, but also at the level of the Ministry of Education and the Educational Zones. At the Ministry level, policy decisions can be taken in order to facilitate the PLC for example by reducing the teaching load so that more time and opportunities are made available for pedagogical activities related to the PLC. At the zonal level, a collaborative culture can be promoted by encouraging rectors and educators to engage in collective learning activities. As Fullan (2005b) stated, one important barrier to implementing PLCs in schools lies in the failure to consider the context at all three levels of the system – schools, districts, and provincial departments of education. Hence it is quite difficult for the rector alone to drive the PLC. He needs the support and backing of the higher authorities and all the three levels need to be aligned in their actions so that together they can be engaged in the promotion of the PLC.

To sum up, elements of the PLC have been described in the schools under study, where they exist in varying degree. Schools exhibiting greater levels of the PLC seem to be more effective in promoting their academic performance. Collaboration and collective learning also depend on the schools and the school leadership. However, in general there is relatively little collaborative learning in the schools. Though state secondary schools are perceived as ‘better’ schools and enrol high ability students, their counterparts the private schools prove to be more effective as they exhibit greater collaboration and collective learning and are better able to improve student academic performance. In these schools the school leaders show a stronger supportive leadership to drive the PLC. However, these findings are based on the secondary schools under study only and cannot be generalized to all secondary schools in Mauritius.
**Limitations**

Like all studies, there are some limitations, despite the effort to minimize them. Some of the limitations are inevitable and others are due to some constraints. These will be discussed below.

The study has been based on only 8 secondary schools. The sampling method used was purposive and convenient but not random. Therefore, for these two reasons the findings cannot be used to give a general picture of all secondary schools in Mauritius. Also, the minimum sample size of 368 was not reached even though 480 questionnaires were distributed. Only 265 questionnaires were collected, hence another reason why the findings cannot be generalized. It was very difficult to collect the completed surveys in some schools, especially the state schools.

The scores for the 4 elements of student wellbeing (student self-esteem, social wellbeing, student teacher relationship and student friend relationship) differ significantly. Therefore, we have not been able to categorize schools in terms of the extent of student wellbeing. Hence conclusions on the relationship between PLC and student wellbeing have not been drawn.

Secondly, it was tedious to develop the appropriate method to compare input and output results for each school in all fairness. The CPE (input) results obtained were in terms of aggregates which include only four best subjects out of six. Therefore, we lost some important details on the results. For example, the best aggregate a student can score is 24, that is a minimum of 4 A* (One A* carries 6 points). However, students scoring 6 A*, 5 A* or 4 A* will all receive the maximum aggregate of 24. The SC (output) results obtained from the MES website provided the number of students who have scored aggregates between 6 to 20 (6 being the best aggregate). The number of students who have scored aggregates above 20 could not be obtained. Hence students scoring above aggregate 20 had to be rounded up into one category. These limitations in the available data surely had some impact on the calculation of school performance coefficient. The SC detailed results could not be obtained for individual students as they are personal and sensitive data and were not provided by the school. We had to make do with the available data from the schools and from the website of the Mauritius Examination Syndicate. It would be an interesting question for further investigation into this relationship.

The influence of school leadership on the PLC was described in two schools only. The purpose of the qualitative method was to understand what a school with a good level of collaboration is doing compared to a school with a lower level of collaboration. The problem lay in the selection
of the two schools. The mean scores for collaboration in the 4 low input schools were all relatively high and the differences were not statistically significant. So we had to select the schools with the highest and the lowest scores. It could have been more appropriate to choose two schools with a larger difference in collaboration if we had more low input schools.

There are some disparities between the quantitative data and the qualitative data. For instance, regarding the levels of collaboration and PLC, we received high scores from the educator’s survey, which implies that there is a good level of collaboration and PLC. However, this was not supported by the qualitative data. On the contrary, it showed a low level of collaborative learning and PLC. This may be due to some preconceptions educators have. What they say they are doing may not be exactly what they are actually doing. Probably this overestimation reflects their organizational commitment in an environment of fierce competition for academic excellence. They probably favoured their school as they know that data from different schools will be compared.

The high mean scores for the educator’s survey do not reflect the actual daily professional practices. This could also be due to some limitations of the questionnaire. It measured only the presence of collaboration, but did not give indications of the frequency and nature of collaboration. Hence we could not carry out an in depth analysis of the frequency and nature of collaboration. The high scores could also be due to the structure of the Likert scale. We used a 5 point Likert scale in increasing order ranging from ‘strongly disagree’ to ‘strongly agree’. The middle scale used was ‘neither agree nor disagree’. As discussed in the methodology, it is considered as a response which is between agree and disagree and is preferred to a no response. ‘Neither agree nor disagree’ was given the value of 3 and this which could have inflated the mean scores. Probably we could have used another term which reflects the idea of an average between agree and disagree instead of the term ‘neither agree nor disagree’.

Therefore, our results have not been used for draw significant inferences. It is to be noted that the main purpose of the educator’s questionnaire was to inform the qualitative phase and to help making choices about the schools for the case studies. We believe that the educator’s survey has served this purpose.

The educator’s questionnaire measures only instructional leadership and shared leadership as we were limited in the number of questions in the survey. Adding more questions could have led to
fewer and less sincere responses. However, from the interview, it was seen that directive
leadership was much present in the two schools and the aspect of transformational leadership
was also evoked and found to be relevant to the PLC.

The study was based on the actual practices in the schools and on the school’s level of
effectiveness at a particular point in time. Collection of longitudinal data could be valuable to
find out whether student results improve with collaborative practices that is linking PLC to
school improvement instead of school effectiveness.
Perspectives
Based on the findings, we can propose some perspectives and recommendations for policy makers, practitioners and researchers in the Mauritian context.

Recommendations for Policy Consideration
At present Mauritius is undergoing major reforms in education in view to provide a holistic education and to reduce the competition for academic excellence. One way to achieve this is to work collectively around certain strategies and actions. According to our findings, some schools are better able to work collaboratively and learn collectively. The schools showing these good practices can be used to drive the other schools for constructive changes.

Over the last decades, there have been several policy decisions in order to improve schools, but they have led to very few changes as they were mostly top down measures and staff does not feel the ownership. Collaboration and collective learning in small groups in the departments might trigger the change process which tends to be difficult. Because there is more collaboration in some departments within the school, these can be used for promoting school wide collaboration and collective learning.

According to the educator’s survey, school structure is problematic and educators do not feel that they are given the required facilities to carry out their daily tasks. Two major constraints which prevent the development of the PLC are a heavy work load and time. These can be reviewed at the level of policy decision so that schools are given at least the minimum facilities and free time to engage in activities that will promote PLCs. Policy makers can reconsider two factors that could reduce the work load so that educators get the time and opportunities to invest in the PLC; firstly to reduce the number of classes allocated to educators per week and secondly to reduce the number of students per class.

The education system in Mauritius is highly elitist and competitive. From the schools surveyed, we found that in the state schools which are high demand schools there is generally less collaboration, one reason is probably because there is more competition for academic excellence. Students and educators tend to work in isolation and focus on the academic performance. This is one major obstacle in the development of the PLC. National policies can help to reduce the excessive focus on academic excellence. On the other hand, schools should be encouraged to promote the holistic development of the child. Appropriate curriculum reforms could better
prepare learners towards an unknown future by developing the Higher Order Thinking Skills (HOTS). Opportunities for staff to reflect together and improve continuously can be included in the government agenda in order to promote the collaborative efforts.

The Ministry of Education has embarked on system-wide reforms in education at the primary and secondary levels. This is for addressing the weaknesses in the system and to cater for the present and future demands in education. One main aim of the reform is to empower educators so as to improve student learning, hence improving the school’s level of effectiveness. How far these reforms will be successful depends on the implementation process and on how educators respond to the changes. At school level a paradigm shift is necessary for the reforms to be meaningful and effective. For this to happen, there should be effective communication between the Ministry and the schools in order to convince all actors of the needs for the reforms. These reforms, can help to promote the development of the PLC.

Some important changes in the schools that can lead to greater levels of effectiveness by promoting collaboration and collective learning are:

- Policy makers can reconsider the way students are admitted in schools in order to reduce the concentration of the elite in few schools. This will help to curb the competition for academic performance and promote collaboration among educators and students.

- Reviewing the transfer policy in state schools can promote the team spirit, collaboration and collective learning. Staff members need to be given sufficient time to evolve in a school. The time for the staff members to understand the school culture and the needs of the learners; and to work constructively towards the school’s shared vision and values. This can help to reduce the disparity in the level of functioning between state and private schools as illustrated by schools E and F.

- The scheme of duty for educators should be reviewed to enable them to assume other important roles in the school. The teaching load could be decreased so that they have sufficient time to devote to collective learning through pedagogical meetings and well-structured departmental meetings. These views have been expressed both by rectors and HODs in the interviews.

- As discussed earlier, state schools seem to have less autonomy than the private schools as they are directly under the control of the Ministry of Education. Certain policies could be
reviewed so that rectors of state school are given greater autonomy. They should feel more like a leader than a manager. They should be able to make important decisions for their school and translate their vision into actions. They must be able to drive their school and get their team to work together.

**Recommendations for Practitioners**

Based on our findings and on previous researches in Mauritian secondary schools, it is clear that we need to improve our schools (Ramdoyal, 1977; Bhuwanee, 1999). Sometimes, Policy decisions are taken but little change actually occurs in the schools. We need to ensure the implementation of the policy decisions taken in order to ensure their effectiveness. We will see no positive change if staff members are not convinced about the changes and innovations. Also they need to be accompanied and supported in the process.

As we have discussed, the role of school leaders is crucial to support and sustain the collaboration needed for the development of the PLC. School leadership is the driving force and has been described as the leadership capacity in the form of the School Management Team (SMT). Therefore, school leaders: rector, deputy rector and heads of departments should understand their strategic roles and take necessary measures as and when needed. They need to promote collaboration and collective learning. They can also identify their training needs and request for relevant training and support. They can also use the vast literature on PLCs and school effectiveness in order to improve their practice.

For our schools to develop into PLCs, firstly the school’s shared vision and values need to be effectively communicated to all staff. Then, they should be given the opportunities to work and reflect together on the elements of the PLC. The school climate should be conducive to the PLC. All staff members should feel the need to contribute to the school community and understand their school context. They should be encouraged to reflect on their daily practices and to make the effort to improve continuously.

Working as a PLC requires a lot of effort on the part of the educators to always reflect and adapt to new situations. Staff members should be encouraged to experiment and adjust their teaching practices to the learners’ needs. A reward system for good practices could be considered at school level as an incentive for the educators to go the extra mile.
A close monitoring of teaching and learning to identify areas of weakness should be put in place and the findings should be used for improving the school’s level of effectiveness. Presently there is no structured system for supporting effective teaching and learning and the HODs interviewed admit that this is not happening due to time constraint. Hence, a comprehensive system of monitoring and quality assurance could be put in place in each school. This will help to guide and inform the PLC.

One of our findings is that HODs and educators have little opportunity to learn together. Staff members should interact regularly so that they can continually review their strategies. Constructive pedagogical exchanges at school level and in the departments need to be planned. School leaders and educators need to focus more on collaborative learning. This could best be done by providing opportunities for collaboration such as team teaching or co-teaching as part of their daily practice and by encouraging critical discussions among staff that focus on students’ outcomes. There should be an enabling environment where educators can naturally observe their peers and share their views constructively. Open learning space can also create the opportunities to collaborate and share ideas. Learning groups can be created and these exchanges can even go beyond the school and lead to exchanges among schools for specific subject areas. Many of these proposed measures can bring about greater collaboration and collective learning in the departments.

As discussed earlier, it is seen that in the Mauritian context student learning is too often equated to student academic performance. Educators tend to be result oriented and teaching is based mainly on examinations. However, due consideration should be given to the learning process. Greater focus on the acquisition of skills, competencies and the right attitude rather than just on the learning of subject content is needed. In departmental and pedagogical meetings discussions should focus on how to promote student learning in its broad sense. The focus should be on learning rather than teaching. The most important goals must always be to work towards students’ progress, achievement and overall development so as to prepare them for the fast changing world (Stoll, 1999). Students should enjoy their learning journey and should feel that they are constantly making progress. This is one of the aims of the PLC.
Recommendations for Further Research

The main implication for researchers is to pay closer attention to the PLC while improving schools’ level of effectiveness. In this respect, the results are promising. This is especially so in the Mauritian context where no research on PLC has been carried out so far. This study is more like a beginning and can lead to a number of interesting investigations.

Firstly, as this research involved only 8 schools, it would be interesting if it could be carried out with a larger sample to see whether some key findings apply. Then, more significant conclusions can be drawn about PLCs in Mauritian secondary schools.

Secondly, we need to investigate further into the types and frequency of collaboration in schools and to see how they promote student learning. These details about collaboration are beyond the scope of this research and they are essential to better understand the PLC in the Mauritian context. The quantitative and qualitative data on collaboration differ significantly. The interviews could enlighten important aspects of collaboration which were not revealed by the survey. Initially, we thought of making observations on departmental meetings and collaboration in the schools, but we dropped the idea as it would have been very time consuming. Considering the gap between the quantitative and qualitative data, observations could have been an appropriate method of data collection on the types and frequency of collaboration. This is another perspective for further research.

PLCs as they exist in many developed countries, are not officially supported by policies in Mauritius. One interesting research could be to implement the PLC in a formal manner in one or a few schools and to carry out a longitudinal case study in a similar model as carried out by Leclerc and Labelle (2012). That is to observe the changes in school effectiveness and improvement over a number of years. This could be used as a model for other schools.

Based on the qualitative data, it was found that in both schools studied there are significant differences in the way the departments are functioning within the school. This is an interesting finding which could be further explored. For example, this diversity could be studied in detail as a case study in one school. It would help us to better understand the dynamics in the departments and the reasons why the PLC works better in some departments and not in others. The influence of the subject or the role of the HOD on the collaborative process could be investigated. Probably, this could help us to better understand how the PLC works.
As we have seen the school leader is instrumental in supporting the PLC. PLC will work only if the school leaders promote and sustain it. Several leadership skills and competencies related to instructional leadership, shared leadership, distributed leadership and transformational leadership are essential. How far school leaders are prepared to carry out such vital roles? This can be another interesting study in the Mauritian context.

One of the aims of the PLC is student wellbeing. Based on our student’s questionnaire, we could not come to conclusive results on the relationship between PLC and student wellbeing. One perspective for further research is to focus extensively on this particular aspect as it is a key indicator of school effectiveness.

Considering the quantitative analysis, there are significant differences between the state and private schools under study, whereby private schools show more instructional leadership and better school structure. The school performance coefficients also indicate higher school academic performance in private schools. Moreover, the two case studies show greater support leadership and collaboration in the private school. These findings cannot be generalized; nevertheless these disparities between state and private schools seem to impact on the PLC and school effectiveness. Further investigation could be carried out in order to further elaborate on these findings.
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Annex 1a - Huffman and Hipp Questionnaire

Professional Learning Community Questionnaire

Directions:
This questionnaire assesses your perceptions about your principal, staff, and stakeholders based on the five dimensions of a Professional Learning Community (PLC) and related attributes. There are no right or wrong responses. This questionnaire contains a number of statements about practices that occur in some schools. Read each statement and then use the scale below to select the scale point that best reflects your personal degree of agreement with the statement. Shade the appropriate oval provided to the right of each statement. Be certain to select only one response for each statement.

Key Terms:
- Principal = Principal, not associate or assistant principal
- Staff = All adult staff directly associated with curriculum, instruction, and assessment of students
- Stakeholders = Parents and community members

Scale: 1 = Strongly Disagree (SD)
2 = Disagree (D)
3 = Agree (A)
4 = Strongly Agree (SA)

Thank you in advance for your participation. Make no identifying marks on this questionnaire. Please return to ___________________________ by ________________.

1. Shared and Supportive Leadership
SD D A SA
1. The staff is consistently involved in discussion and making decisions about most school issues
O O O O
2. The principal incorporates advice from staff to make decisions.
O O O O
3. The staff has access to key information. O O O O
4. The principal is proactive and addresses areas where support is needed.
O O O O
5. Opportunities are provided for staff to initiate change. O O O O
6. The principal shares responsibility and rewards for innovative actions.
O O O O
7. The principal participates democratically with staff sharing power and authority.
O O O O
8. Leadership is promoted and nurtured among staff. O O O O
9. Decision making takes place through committees and
communication across grade and subject areas.

10. Stakeholders assume shared responsibility and accountability for student learning without evidence of imposed power and authority.

2. Shared Values and Vision

11. A collaborative process exists for developing a shared sense of values among staff.

12. Shared values support norms of behaviour that guide decisions about teaching and learning.

13. The staff shares vision for school improvements that have an undeviating focus on student learning.

14. Decisions are made in alignment with the school’s values and vision.

15. A collaborative process exists for developing a shared vision among staff.

16. School goals focus on student learning beyond test scores and grades.

17. Policies and programs are aligned to the school’s vision.

18. Stakeholders are actively involved in creating high expectations that serve to increase student achievement.

Collective Learning and Application

19. The staff works together to seek knowledge, skills, and strategies and apply this new learning to their work.

20. Collegial relationships exist among staff that reflect commitment to school improvement efforts.

21. The staff plans and works together to search for solutions to address diverse student needs.

22. A variety of opportunities and structures exist for collective learning through open dialogue.

23. The staff engages in dialogue that reflects a respect for diverse
ideas that lead to continued inquiry.

24. Professional development focuses on teaching and learning.

25. School staff and stakeholders learn together and apply new knowledge to solve problems.

26. School staff is committed to programs that enhance learning.

27. Opportunities exist for staff to observe peers and offer encouragement.

28. The staff provides feedback to peers related to instructional practices.

29. The staff informally shares ideas and suggestions for improving student learning.

30. The staff collaboratively reviews student work to share and improve instructional practices.

31. Opportunities exist for coaching and mentoring.

32. Individuals and teams have the opportunity to apply learning and share the results of their practices.

3. Shared Personal Practice

27. Opportunities exist for staff to observe peers and offer encouragement.

28. The staff provides feedback to peers related to instructional practices.

29. The staff informally shares ideas and suggestions for improving student learning.

30. The staff collaboratively reviews student work to share and improve instructional practices.

31. Opportunities exist for coaching and mentoring.

32. Individuals and teams have the opportunity to apply learning and share the results of their practices.

Supportive Conditions – Relationships

33. Caring relationships exist among staff and students that are built on trust and respect.

34. A culture of trust and respect exists for taking risks.

35. Outstanding achievement is recognized and celebrated regularly in our school.

36. School staff and stakeholders exhibit a sustained and unified effort to embed change into the culture of the school.

Supportive Conditions – Structures

37. Time is provided to facilitate collaborative work.

38. The school schedule promotes collective learning and shared practice.

39. Fiscal resources are available for professional development.

40. Appropriate technology and instructional materials are
available to staff.

41. Resource people provide expertise and support for continuous learning.

42. The school facility is clean, attractive, and inviting.

43. The proximity of grade level and department personnel allows for ease in collaborating with colleagues.

44. Communication systems promote a flow of information among staff.

45. Communication systems promote a flow of information across the entire school community, including central office personnel, parents, and community members.

Source of questionnaire:
### Table 1. Professional Learning Community component matrix.

<table>
<thead>
<tr>
<th>Items</th>
<th>Component Factor Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Shared and Supportive Leadership</td>
</tr>
<tr>
<td>1. The staff is consistently involved in discussing and making decisions about most school issues.</td>
<td>0.68</td>
</tr>
<tr>
<td>2. The principal incorporates advice from staff to make decisions.</td>
<td>0.80</td>
</tr>
<tr>
<td>4. The principal is proactive and addresses areas where support is needed.</td>
<td>0.70</td>
</tr>
<tr>
<td>5. Opportunities are provided for staff to initiate change.</td>
<td>0.64</td>
</tr>
<tr>
<td>6. The principal shares responsibility and rewards for innovative actions.</td>
<td>0.72</td>
</tr>
<tr>
<td>7. The principal participates democratically with staff sharing power and authority.</td>
<td>0.75</td>
</tr>
<tr>
<td>8. Leadership is promoted and nurtured among staff.</td>
<td>0.64</td>
</tr>
<tr>
<td>19. The staff work together to seek knowledge, skills and strategies and apply this new learning to their work.</td>
<td>0.19</td>
</tr>
<tr>
<td>20. Collegial relationships exist among staff that reflect commitment to school improvement efforts.</td>
<td>0.28</td>
</tr>
<tr>
<td>21. The staff plan and work together to search for solutions to address diverse student needs.</td>
<td>0.18</td>
</tr>
<tr>
<td>22. A variety of opportunities and structures exists for collective learning through open dialogues.</td>
<td>0.37</td>
</tr>
<tr>
<td>23. The staff engage in dialogue that reflects a respect for diverse ideas that lead to continued inquiry.</td>
<td>0.33</td>
</tr>
<tr>
<td>25. School staff and stakeholders learn together and apply new knowledge to solve problems.</td>
<td>0.26</td>
</tr>
<tr>
<td>26. School staff is committed to</td>
<td>0.18</td>
</tr>
</tbody>
</table>
### Component Factor Loading

<table>
<thead>
<tr>
<th>Items</th>
<th>Shared and Supportive Leadership</th>
<th>Collective Learning and Application</th>
<th>Supportive Conditions – Structures</th>
</tr>
</thead>
<tbody>
<tr>
<td>programs that enhance learning.</td>
<td>0.33</td>
<td>0.25</td>
<td>0.49</td>
</tr>
<tr>
<td>39. Fiscal resources are available for professional development.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>40. Appropriate technology and instructional materials are available to staff.</td>
<td>0.21</td>
<td>0.27</td>
<td>0.71</td>
</tr>
<tr>
<td>42. The school facility is clean, attractive and inviting.</td>
<td>0.21</td>
<td>0.20</td>
<td>0.71</td>
</tr>
<tr>
<td>43. The proximity of grade level and department personnel allows for ease in collaborating with colleagues.</td>
<td>0.17</td>
<td>0.26</td>
<td>0.67</td>
</tr>
<tr>
<td>44. Communication systems promote a flow of information among staff.</td>
<td>0.29</td>
<td>0.28</td>
<td>0.68</td>
</tr>
<tr>
<td>45. Communication systems promote a flow of information across the entire school community including: central office personnel, parents, and community members.</td>
<td>0.28</td>
<td>0.36</td>
<td>0.60</td>
</tr>
</tbody>
</table>

#### 3.1.2. Faculty trust in colleagues

The results of EFA using the principal component method with varimax rotation suggested a single component structure for the scale of faculty trust in colleagues which was consistent with the original structure. Further single factor confirmatory factor analysis (CFA) for the scale indicated that there existed significantly high correlations among the error variances of item 4 (“Teachers in this school have faith in the integrity of their colleagues.”), item 6 (“Teachers in this school do their jobs well.”), and item 7 (“When teachers in this school tell you something, you can believe it.”). Modification indices indicated that the removal of the three items could greatly improve the goodness of fit. The results of CFA analysis for the remaining five items of faculty trust in colleagues indicated that the single factor CFA model fitted the data very well ($Chi^2 = 7.85, df = 5, P = 0.17; RMSEA = 0.04; NFI = 0.99; NNFI = 0.99; CFI = 0.99; IFI = 0.99; RFI = 0.99$). The EFA analysis based on the five items indicated that the single factor with eigenvalue greater than 1.00 accounted for about 69% of the total variances. The alpha coefficient of reliability for the scale was 0.88 in the current sample.
### 3.1.3. Collective teacher efficacy

As for the scale of collective efficacy belief, an initial EFA analysis using principal component method with varimax rotation indicated that both item 3 ("To what extent can school personnel in your school establish rules and procedures that facilitate learning?"") and item 8 ("To what extent can teachers in your school make expectations clear about appropriate student behaviour?") had high loadings on two factors. Modification indices from CFA also verified the results and indicated that the goodness of fit could be significantly improved if the two items were removed from the scale without changing the factor structure. The EFA results indicated that two components with eigenvalues greater than 1.00 accounted for about 69% of the total variances. The rotated factor loadings are displayed in Table 2 where it can be seen that the original two factor structure of the scale of collective efficacy belief was well retained in the Chinese setting. Ten items were used to measure teachers’ collective efficacy on instructional strategies (6 items) and student discipline (4 items) respectively. The high Cronbach alpha coefficients (0.89 for instructional strategies and 0.87 for student discipline) demonstrated good internal consistencies for the two subscales. Factor scores of the two orthogonally rotated factors were computed from EFA and used in the following analysis.

<table>
<thead>
<tr>
<th>Items</th>
<th>Instructional Strategies</th>
<th>Student Discipline</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. How much can teachers in your school do to produce meaningful student learning?</td>
<td>0.71</td>
<td>0.30</td>
</tr>
<tr>
<td>2. How much can teachers in your school do to help students master complex content?</td>
<td>0.76</td>
<td>0.32</td>
</tr>
<tr>
<td>5. How much can teachers in your school do to help students think critically?</td>
<td>0.79</td>
<td>0.26</td>
</tr>
<tr>
<td>6. How much can teachers in your school do to promote deep understanding of academic concepts?</td>
<td>0.73</td>
<td>0.29</td>
</tr>
<tr>
<td>9. How much can your school do to foster student creativity?</td>
<td>0.79</td>
<td>0.15</td>
</tr>
<tr>
<td>10. How much can your school do to get students to believe they can do well in schoolwork?</td>
<td>0.69</td>
<td>0.39</td>
</tr>
<tr>
<td>4. How well can adults in your school get students to follow school rules?</td>
<td>0.32</td>
<td>0.79</td>
</tr>
<tr>
<td>7. How much can school personnel in your school do to control disruptive behaviour?</td>
<td>0.31</td>
<td>0.75</td>
</tr>
<tr>
<td>11. How well can teachers in your school respond to defiant students?</td>
<td>0.19</td>
<td>0.88</td>
</tr>
<tr>
<td>12. How much can your school do to help students feel safe while they are at school?</td>
<td>0.32</td>
<td>0.76</td>
</tr>
</tbody>
</table>
3.1.4. Teacher commitment to students

The results of EFA analysis using principal component method with varimax rotation suggested a single component structure for the scale of teacher commitment to students. The results from CFA analysis based on the original two factor structure also indicated that there was an extremely high correlation \( r = 0.99, p < 0.01 \) between the factors *academic achievements* and *social integration*. This means that these two factors can be combined into a single one representing the teachers’ commitment to students in the Chinese setting. In addition, the CFA results indicated that item 5 (“I can’t face my students if I don’t put all my efforts into increasing their knowledge and skills.”) and item 6 (“I feel obliged to mediate among rival groups of students.”) had very low factor loadings. Hence, these two items were deleted from the scale. The proposed one-factor CFA model for teacher commitment to students was further checked and a significantly high correlation between the error variances of item 2 (“It is my responsibility to ensure good social relations among my students.”) and item 7 (“I feel committed to my students’ achievements and success.”) was found. Based on the value of factor loadings and item content, item 7 was removed from the scale and the values of Chi-square and RMSEA were greatly reduced. The goodness of fit indices \( \text{Chi-square} = 19.08, df = 5, P = 0.00; \text{RMSEA} = 0.08; \text{NFI} = 0.99; \text{NNFI} = 0.98; \text{CFI} = 0.99; \text{IFI} = 0.99; \text{RFI} = 0.97 \) indicated that the model fitted the data well. The EFA analysis based on these final five items indicated that about 61% of the total variances could be accounted for by this single factor. The internal consistency (Cronbach’s \( \alpha = 0.84 \)) for the scale in the current sample was good.

3.2. Preliminary analysis

The means and standard deviations for the teacher- and school-level variables have been summarized in Table 3. Gender comparisons and school type comparisons on teachers’ commitment to students were conducted and the results are shown in Table 4. No statistically significant gender differences were found on teachers’ commitment to students. However, teachers expressed a higher level of commitment to students in primary schools than their counterparts in secondary schools. The correlations among the school-level variables are shown in Table 5. There were no statistically significant correlations among the three factors of PLC and between the two factors of collective teacher efficacy because the orthogonal rotated method was used here to extract the uncorrelated factors. The correlation coefficients indicated that the three factors of PLC were significantly and moderately correlated with teachers’ collective efficacy on *instructional strategies*. However, only one PLC factor, *collective learning and application*, was significantly related to teachers’ collective efficacy on *student discipline*. Faculty trust in colleagues was also moderately or highly correlated with other school-level factors.
Table 3. Reliabilities and descriptive statistics of the factors.

<table>
<thead>
<tr>
<th>Factors</th>
<th>Number of items</th>
<th>Cronbach’s α</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>School-level</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PLC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shared and supportive leadership</td>
<td>7</td>
<td>0.90</td>
<td>1.14</td>
<td>4.00</td>
<td>2.91</td>
<td>0.45</td>
</tr>
<tr>
<td>Collective learning and application</td>
<td>7</td>
<td>0.88</td>
<td>1.14</td>
<td>4.00</td>
<td>3.02</td>
<td>0.37</td>
</tr>
<tr>
<td>Supportive conditions – structures</td>
<td>6</td>
<td>0.84</td>
<td>1.67</td>
<td>4.00</td>
<td>3.01</td>
<td>0.41</td>
</tr>
<tr>
<td>Faculty trust in colleagues</td>
<td>5</td>
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Table 4.

School type and gender differences on teachers’ commitment to students.

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Table 5.

Correlations among the school-level factors.

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1.  2.  3.  4.  5.  6.

Collective efficacy

5. Instructional strategies  0.54**  0.57**  0.53**  0.76**  –

6. Student discipline       0.03  0.44**  0.23  0.57**  –  –

**

p < 0.01.
Annex 1c - Educator’s Questionnaire

School Leadership and Collaborative work

This survey focuses on school leadership, some important school factors as well as on the collaborative work of educators. The Ministry of Education has approved the participation of secondary schools in this survey.

This questionnaire, addressed to educators, seeks information about your teaching experience, school leadership activities, support available, your skills and attitude to collaborative work and some personal information.

Answering this questionnaire should require not more than 15 minutes. To make it as easy as possible for you to respond, most questions are answered simply by ticking in the appropriate box. All responses are anonymous and will be treated with strict confidentiality; no individual or school will be identifiable in the research work.

Thank you very much for the time and effort you put in responding to this questionnaire.

Please place the completed questionnaire in the postage paid envelope and mail to the address on the envelope.

*Please note that for the purpose of the research, school leadership is considered as a collective activity comprising Rector, Deputy Rector and Heads of Departments; which is referred to as the School Management Team (SMT).*

**Respondent Profile**

Please provide the following information about yourself:

(a) Gender: Male □ Female □

(b) Number of students in your school: below 500 □ 500-900 □ above 900 □

(c) Your subject area: _______________________

(d) Are you Head of Department? Yes □ No □

(e) Number of years of experience as an educator at the end of this school year (please tick in the square): 1-4 □ 5-9 □ 10-14 □ 15 or more □

(f) Number of years you have been working in this school.

Less than 2 □ 2-4 □ 5-7 □ 8-10 □ more than 10 □
Read each statement carefully and then use the scale below to select the scale point that best reflects your personal degree of agreement with the statement. Choose only one response for each statement.

Scale:

1. Disagree (D)
2. Slightly disagree (SD)
3. Neither agree nor disagree
4. Slightly agree (SA)
5. Agree (A)

The following statements are based on your school leadership, which is seen as a shared activity. School Management Team (SMT) refers to either the rector or the deputy rector or the head of department.

1. The SMT monitors the classroom curriculum to see that it covers the school’s curricular objectives.
2. The SMT actively supports the use in the classroom of skills acquired during in-service training.
3. The SMT discusses academic performance results with the department to identify curricular strengths and weaknesses.
4. The SMT reinforces superior performance by educators formally and informally.
5. The SMT creates professional growth opportunities for educators.
6. The SMT incorporates advice from staff to make decisions.
7. Opportunities are provided to staff to initiate change.

References from Questionnaires of Vescio and Huffman and Hipp

Questions 1 to 5 are related to Instructional Leadership. They are not present in the questionnaire of Huffman & Hipp and Vescio.

From both Huffman & Hipp and Vescio
8 The SMT works together democratically sharing power and authority. From Huffman & Hipp and Adapted from Vescio

9 The SMT shares responsibility and rewards for innovative actions. From Vescio

10 Leadership is promoted and nurtured among staff. From Huffman & Hipp

**The following statements refer to some prevailing school conditions and how they enable collaboration.**

11 Educators trust each other. To measure the climate among educators.

12 Even in difficult situations, educators can depend on each other.

13 Caring relationships exist among staff and students that are built on trust and respect. From Huffman & Hipp

14 Conflicts rarely occur among members of staff. To measure the climate among educators.

15 The school has an enabling climate which makes it pleasurable for staff and students. To measure the level of wellbeing.

16 Free time is provided to facilitate collaborative work. Adapted from Huffman & Hipp

17 Fiscal resources are available for professional development. From Huffman & Hipp and Vescio

18 Appropriate technology and instructional materials are available to staff. From Huffman & Hipp and Vescio

19 Resource people provide expertise and support for continuous learning From Huffman & Hipp
Communication systems promote a flow of information across the entire school community, namely SMT, educators, administrative staff, support staff and students.

The following statements refer to various aspects of collaboration that exist in your school and how they are related to student learning.

21 A collaborative process exists for developing a shared vision among staff. Adapted from Huffman & Hipp

22 Staff is committed to the shared vision for the improvement of the school. Adapted from Huffman & Hipp

23 A collaborative process exists for developing a shared sense of values among staff. From Huffman & Hipp

24 Shared values support norms of behaviour that guide individual decisions. Adapted from Huffman & Hipp

25 Collective decisions are made in alignment with the school’s vision and values. Adapted from Huffman & Hipp

26 School development plan focuses on student learning. Related to Mauritian context

27 Educators monitor student’s performance and provide constructive feedback. To measure the focus on student learning

28 Emphasis is laid on assessment for learning.

29 Professional development focuses on student learning.

30 Staff is actively involved in improving student learning.
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<th>Staff works together to seek knowledge, skills, and strategies and apply this new learning to their work.</th>
<th>From Huffman &amp; Hipp and Vescio</th>
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<td>Staff plans and works together to search for solutions to address diverse student needs.</td>
<td>From Huffman &amp; Hipp and Vescio</td>
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<td>Staff engages in dialogue that reflects a respect for diverse ideas leading to continued inquiry.</td>
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<td>Staff informally shares ideas and suggestions for improving professional practices.</td>
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<td>Staff has the opportunity to encourage and offer advice to peers.</td>
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<td>Staff reviews student work to share and improve instructional practices.</td>
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<td>Academic performance results are discussed in departmental meetings to identify strengths and weaknesses.</td>
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<td>New teaching strategies are developed based on the identified strengths and weaknesses.</td>
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<td>Staff engages in dialogue that leads to continuous improvement through reflective inquiry</td>
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<td>Staff has the opportunity to share results of new practices.</td>
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Annex 1d - Student’s Questionnaire 1

STUDENT SURVEY

School: ________________________________

1. What is your age? 12-14 years □ 15-18 years □
2. What is your gender? Male □ Female □
3. In which class are you? _________________________

Please indicate how much you agree or disagree with each of the following statements. There is no right or wrong answers. Just give your honest opinion.

4. I am happy with myself as a person.
5. I feel OK about how good I am as a student.
6. I participate actively in activities organized by the school.
7. I always try my best whenever I have something to do.
8. I love my school

The following questions are about adults at your school (such as teachers, ushers, rector, deputy rector). Please select the answer that best describes how you feel.

9. Adults at my school always help me when I need them.
10. I can count on adults at my school for emotional support.
11. Adults at my school and I find it easy to talk to each other.
12. Adults at my school treat me respectfully.
13. Teachers provide sufficient feedback on my studies.
The following questions are about your friends. Think only about friends who are approximately your age; don’t include brothers and sisters. Please select the answer that best describes how you feel.

14 I feel like I am part of a group when I am with my friends.
15 I find it easy to talk to my friends.
16 My friends help me when I need them.
17 My friends and I do many things together.
18 Most of my friends are in my school.

Annex 1e - Student’s Questionnaire 2

STUDENT SURVEY

School: _________________________________

1. What is your age? 12-14 years □ 15-18 years □
2. What is your gender? Male □ Female □

The following questions are about your welfare as a student

Please indicate how much you agree or disagree with each of the following statements. There is no right or wrong answers. Just give your honest opinion.

3 I am happy with myself as a student.
4 I am the kind of student I want to be.
5 I feel OK about how good I am as a student.
6 I understand clearly what I have to do as a student.
7 I do my best to achieve my objectives as a student.
The following questions are about you and your school. Please select the answer that best describes how you feel.

8 I love my school.
9 I am proud to be a student of this school.
10 I feel safe in my school.
11 I feel at ease in my school.
12 In my school, I have a group of friends which is important for me.

The following questions are about teacher student relationship. Please select the answer that best describes how you feel.

13 In general, there is a warm and friendly relationship between students and teachers.
14 Students and teachers get along well with each other.
15 Students feel close enough to most of their teachers and trust them.
16 Students and teachers are happy to be together.
17 Students and teachers talk and discuss outside class hours.
The following questions are about you and your friends at school.

Think only about friends who are approximately your age; don’t include brothers and sisters. Please select the answer that best describes how you feel.

18 In general, students in my school get along well with each other.

19 There is a warm and friendly relationship among students in my school.

20 Students in my school help each other.

21 Students in my school respect one another.

22 Students in my school can count on each other
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Annex 3a - Interview for rectors/deputy rectors

1. Please tell me few things about your career path and experience as a rector/deputy rector.

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-------------------------------------------------------------------------------------------------------------------

2. (i) Please tell me about your first encounter in the school?

-------------------------------------------------------------------------------------------------------------------
-------------------------------------------------------------------------------------------------------------------

(ii) Please tell me about the history of this secondary school.

-------------------------------------------------------------------------------------------------------------------
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3. According to the survey carried out, collaborative work exists among teachers in your school. And the level is relatively high. Are you surprised about this? What do you think about this?

-------------------------------------------------------------------------------------------------------------------
-------------------------------------------------------------------------------------------------------------------

-------------------------------------------------------------------------------------------------------------------

4. Do you think that the collaborative work in your school is because of your initiatives or a product of the organizational culture?

-------------------------------------------------------------------------------------------------------------------

5. Is your staff keen about working in collaboration with others in the school? Is it imposed or do they do it voluntarily?

-------------------------------------------------------------------------------------------------------------------

-------------------------------------------------------------------------------------------------------------------
6. How does your staff work together to improve student learning? (Examples- remedial work, improving teaching and learning, providing feedback…) Please give practical details. Give details about the nature and frequency of the interactions.

7. What are the constraints/problems that prevent your staff from working together?

8. What initiatives do you take to promote collaborative work?

(Examples – Including clear objectives in your school development plan, setting up of school committees, team building exercises… *Please give practical details of what you are doing*)

9. How do you act as a facilitator in order to support collaborative work in your school towards the development of a Professional Learning Community?

(Examples – Encourage staff to work together, provide incentives and recognition… Please give practical details)

10. Do you get the support of your staff when you take initiatives at your level in the school? Please elaborate.
11. How does the SMT improve and support collaborative work?

12. Anything else you wish to share about collaborative work in your school?
Annex 3b - Interview for Heads of Departments

1. Please tell me about your experience as HOD?

2. According to the survey carried out, collaborative work exists among teachers in your school. And the level is relatively high. Are you surprised about this? What do you think about this?

3. Give examples of how colleagues in your department work collaboratively. (Please give practical details)

4. According to scientific literature review, there are four distinct aspects of collaborative work:
   i. Teachers share common vision and values,
   ii. Teachers focus on student learning,
   iii. Teachers share personal practices leading to collective learning; and
   iv. Teachers adopt reflective practices leading to continuous improvement.

   What do you think about these four aspects of collaborative work and what examples can you give to illustrate these aspects in your department? (Please give practical details)

   i. Teachers share common vision and values
   ii. Teachers focus on student learning
   iii. Teachers share personal practices leading to collective learning
   iv. Teachers adopt reflective practices leading to continuous improvement

5. What are the constraints/problems that prevent you from working together in the department?

6. What initiatives do you take to promote collaborative work in your department? (Please give concrete examples with details)

7. How do you act as a facilitator in order to support the collaborative work in your department? (Please provide concrete examples with details)

8. Do you get the support of your colleagues when you take initiatives at your level in the department? Please elaborate.

9. Anything else you wish to share about collaborative work in your department?
Annex 4a – Error Plots for Educator’s Survey

Figure 17. Instructional Leadership

Figure 18. Shared Leadership
Figure 19. Supportive School Climate

Figure 20. Supportive School Structure
Figure 21. Shared Vision and Values

Figure 22. Focus on Student Learning
Figure 23. Collaboration - Collective Learning and Shared personal Practices

Figure 24. Continuous Improvement based on Reflective Inquiry
Figure 25. Professional Learning Community
Annex 4b - Error Plots for Student Survey

STUDENT SURVEY

Figure 26. Student self-esteem

Figure 27. Student Social Wellbeing
Figure 28. Student Teacher Relationship

Figure 29. Student Friend Relationship
Figure 30. Student Wellbeing