

**Continuing professional development and quality of teaching:
a case study of State Secondary Schools in Mauritius.**

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Declaration

I, Prithviraj Peerthy, confirm that the work presented in this thesis is my own. Where information has been derived from other sources, I confirm that this has been indicated in the thesis.

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Abstract

This research has investigated how Continuing Professional Development and Learning (CPDL) could help teachers to become better teachers by acquiring new skills and improving their competencies. The aim was to find out to what extent the present system of CPDL in Mauritius is able to fulfill that important role of providing CPDL which influences positively on the quality of teaching. The skills teachers wanted to develop in order to become better classroom practitioners were also explored.

The research comprised a survey made of all the principals of the State Secondary Schools (SSSs) in Mauritius followed by semi-structured interviews with nine teachers, three Heads of Departments (HoDs) and principals of three schools studied and two directors of the Ministry of Education (MOE). Data were also obtained from a World Bank consultant during his visit to Mauritius advising the government on education reforms and three inspectors.

Evidence suggests that in the Mauritian secondary schools studied there are shortcomings in the provision of CPDL but there are also possibilities for improvement. The findings of the research make it possible to make recommendations which might be useful for policy makers to bring changes to improve the provision of CPDL at the level of the teachers, the school and the MOE.

The main findings of the research were that the main model of CPDL, that is workshops, does not provide educators with the necessary skills to improve their quality of teaching; HoDs and senior educators who were supposed to lead CPDL were not fulfilling that role to its fullest; principals were not in general supporting HoDs to provide CPDL; and the inspectors seemed unable to do much in terms of improving the quality of teaching.

Nevertheless, there is a place for CPDL with teachers in the SSSs provided it is dispensed by experts in their fields; teachers learn from them; there is follow up and what is learnt is applied in the classroom.

Key words: CPDL, teaching skills, competencies, coaching, collaboration and one-day workshops.

Impact statement

The impact of the research conducted for the thesis of my EdD could be considered substantial. Much of this is outlined in my Reflective Statement but the expertise and knowledge I have gained, plus the insight presented in the thesis, based on my careful analysis of the data collected, could be seen as beneficial on three fronts: for my personal professional development (PD); my working environment; and for other private schools and schools where PD of teachers is a major driver for improving quality of teaching. The impact of the research can also be on policy making within the MOE in Mauritius, should they wish to make use of the findings, as well as elsewhere, but particularly similarly placed small island economies.

More specifically, the research helped me to acquire sufficient knowledge of effective PD practices and it widened my expertise to help improve my leadership of CPDL and my teachers to improve the quality of their teaching. In fact it deepened my knowledge of CPDL which could be helpful to face new challenges of the job. Undertaking the research provided me with the opportunity to learn and reflect on how others carried out CPDL and that could be used to improve its provision and leadership.

This study's impact is that it has helped to broaden my understanding of the need for CPDL and its implications for professional practice. It also contributes to further professional and academic knowledge of CPDL in both Mauritius and other similar small-island states. Its impact is already becoming apparent as I have introduced in my own school new models of CPDL, such as peer coaching and discussing lesson plans. I have encouraged discussion among teachers on strategies to teach their subjects, particularly mathematics where I have advised teachers to introduce lesson study. It is too early to state what the impact of such developments will be but there is already a positive feel among staff who believe their needs are being attended to.

I have sought opportunities for my school to participate in projects which would help teachers to develop professionally as I found from the analysis of my data that support is a key factor for CPDL. Furthermore the data analysis will, hopefully, be used to find solutions to existing problems, for example, to train HoDs, and to improve current provision of CPDL which consists mostly of one-day off-site workshops.

The recommendations of this research will hopefully have an impact on policy-makers. It might be of some help to supplement or inform the policy of the government on CPDL, which are mentioned in many government policy papers but which in practice are rarely implemented at school-level. My research could provide evidence on gaps existing at policy level in terms of CPDL in the education reforms (MOE, 2016) as I have looked into skills which are important for teachers to develop professionally using a bottom up approach. The research can also have an impact by helping to develop a national CPDL policy to include what sort of things it could

consist of. The provision of CPDL opportunities should be wide-ranging and include many activities for teachers to engage in.

There is a well-defined body of knowledge on CPDL, for example, what essential aspects are needed for a CPDL model to be successful. This can be used to revisit the way that the Ministry (QAID) is carrying out CPDL. The impact of the findings could be considerable if the views of the participants were used to illuminate the inspectors' thinking when devising strategies to improve the quality of teaching. The literature and the knowledge derived from the research shows that CPDL is important in an education system. The recommendations of the research might help teachers to become better at what they do to the benefit of all parties and especially the students.

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Glossary of Abbreviations

AST	Academy of Singapore Teachers
CIE	Cambridge International Examinations
CPD	Continuing Professional Development
CPDL	Continuing Professional Development and Learning
DES	Department for Education and Science
DfEE	Department for Education and Employment
EdD	Doctorate in Education
EFA	Education for All
ERIC	Education Resources Information Center
EU	European Union
FGI	Focus Group Interviews
HoD	Head of Department
ICT	Information and Communication Technology
IFS	Institution Focused Study
INSET	In-service training
ITT	Initial Teacher Training
MOE	Ministry of Education
MOEHRSR	Ministry of Education, Human Resources and Scientific Research
MOEHR	Ministry of Education and Human Resources
MECHR	Ministry of Education, Culture and Human Resources
NBS	National Bureau of Statistics
NIE	Nanyang Institute of Education
NYS	Nine Year Schooling
OECD	Organization for Economic Co-operation and Development
PCK	Pedagogical Content Knowledge
PD	Professional Development
PGCE	Post Graduate Certificate in Education
PLC	Professional Learning Communities
PRB	Pay Research Bureau
PSC	Public Service Commission
QAID	Quality Assurance and Inspection Division
RQ	Research Question
SDS	Singapore Department of Statistics
SIDS	Small Islands Developing States
SIP	School Improvement Plan
SSS	State Secondary Schools
TALIS	Teaching and Learning International Survey
UCL IOE	University College London Institute of Education
UNESCO	United Nations Education, Scientific and Cultural Organization

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Reflective statement

My learning experience over the programme

It all started in 2012, when as the principal of a Mauritian State Secondary School (SSS) in a quest to develop professionally, I started my studies at the University College London Institute of Education (UCL IOE) on the Doctorate in Education (EdD) (International) programme. The programme has been very enriching for me with, I believe, remarkable impact on my professional practice. The professional doctorate developed my practice through research. The six years at the IOE helped me to understand the complex world of education, to experiment with different theoretical perspectives and to explore what I wanted to investigate using the appropriate research design.

The first module, 'Foundations of Professionalism' which focused on professional issues and perspectives, helped me to have a thorough understanding of the nature of professionalism. It helped me to understand my professional roles, duties and responsibilities as well as my limits as the principal working in a SSS. I understood critically theories of professionalism, professionalization and deprofessionalization (Whitty, 2000; Etzioni, 1969). My assignment helped me to reflect on the meaning of professionalism and how it applied to being a school principal.

In reflecting on the extent to which principals are professionals and how I do or can do my job professionally, I learnt that I had to develop social competence, ability to work in teams, resolve conflict, understand other cultures, and to be able to handle uncertainties and paradoxes of secondary modernity. It helped me to be realistic and reasonable in my expectations as well as questioning myself in what I do as a professional.

Furthermore, I was able to reflect on teacher professionalism and understand where teachers in Mauritius are in terms of their professionalism. I think that our teachers have no opportunity to reflect on the status of teachers being 'semi-professionals' (Etzioni, 1969) and what it entails. The criteria to be considered a professional were predominantly skills based on theoretical knowledge, rigorous training, competence ensured by examination, high ethical conduct and a service orientation (Millerson, 1964, cited in Whitty, 2008). Since the teachers in the school I led did not fit these criteria it drove me to think of possible strategies to provide training to them.

I came to know that we need 'extended professionals' (also called the 'New Professionalism') and not 'restricted professionals' (Hoyle, 1974; Hargreaves, 1994). The hallmarks of New Professionalism are collaboration, peer coaching, teamwork, partnership, mentoring, PD and a focus on students' learning outcomes.

With the next module, Methods of Enquiry 1, I became acquainted with research. Before I had very little understanding about research in education and what research bodies were doing. I have to admit that it was not easy for me to understand research methodology. I developed research skills and understood how to carry out research over time. The link between epistemology, theoretical perspectives, methodology and methods were quite fascinating to me when I started my IFS and thesis because then it was clearer to me. I found the importance of the research questions in designing my research.

In Methods of Enquiry 1, I learnt about qualitative and quantitative research methods, tools for collecting both forms of data and how data are analysed. I had learnt the importance of establishing more concrete protocols (e.g., ethical notions, such as non-coercion, participants' risks and anonymity in research studies) when completing the UCL IOE ethics form. Going regularly into the research fields have honed up a number of my skills.

Methods of Enquiry 2 reinforced what I learnt in Methods of Enquiry 1. While doing the assignments I used the different steps in carrying out research. The feedback from the supervisors helped considerably to understand what research and inquiry are about and how I should improve my research skills. I had to develop some qualities to be able to undertake empirical research and collect primary data. For example, I had to improve my communication and listening skills to conduct effective interviews. I realized my shortcomings when I started conducting interviews. I persevered.

The next part of the EdD programme was the Institution Focused Study (IFS) which I carried out in a school where I was working in 2015. I did my research on a policy concerning lesson planning which the Quality Assurance and Inspection Division (QAID) introduced in SSSs in Mauritius in 2012. I developed new skills while doing my IFS, such as organizing interviews, establishing contacts and time management, while consolidating others. Contacting the participants and talking to them about the research was quite challenging. I discussed the importance of the study with them. I developed my organizational and time management skills. I learnt to be patient and found solutions to problems when they occurred throughout my studies. Over time it became less stressful and I was able to cope better. I had more satisfaction in meeting people and conducting interviews and was looking forward to the next interviews. After the IFS I gained confidence in myself as a researcher.

I developed reading and writing skills throughout the programme. I am fully aware of the importance of citations. I use the online library more efficiently now. I also developed the skills of working collaboratively with my colleagues on the programme and in my place of work. I am aware of the importance of being coherent, that is, linking rationale, literature review, findings and conclusion. I learned to be critical. I have read more on critical thinking (e.g. Wallace and Wray, 2011). As a learner at this stage of the programme, I have made

significant improvements. I am more of a reflective practitioner now and that allows me to improve and progress as a researcher. Finally, all the knowledge I had acquired up to this point in my studies helped to formulate and consolidate my thesis.

Contribution to my professional knowledge and development

The programme has contributed greatly to my PD and knowledge. Since I joined the IOE UCL in 2012, I realized how much progress I have made in terms of understanding different aspects in the educational field. I have been able to go through the different stages of the course learning about research and doing my inquiry. That is perhaps the greatest contribution to my PD up to now. After my thesis, I intend to carry out some more research in the field of CPDL with the hope that there can be some changes in the right direction in my country. I also intend to collaborate with other researchers in my field or relevant to my country. I had the opportunity to compare what is being done elsewhere and what we can apply in our system.

The studies at the IOE developed in me the culture of attending conferences, discussing with other people in the field of my research and understanding the importance of carrying out longitudinal research; working in collaboration with other schools; researching on school improvement and CPDL as done in the UK by the UCL academics. At the IOE I have been inspired by my supervisors and other lecturers. I have learnt to what extent the academics contribute to the field of education and how much is being researched in the UK and other parts of the world. This is an opportunity I would not have had if I had stayed in my country and continued to do 'business as usual' in the different schools I would have worked in. My studies at the doctoral level changed my perspectives. My own PD will enhance the way I view policies in my country and how I can support my staff in developing professionally. I have already started to do a few things differently at my school.

Reading from the IOE library and online has helped me enormously to improve my knowledge in subjects related to my project and methods of carrying out research. I have deepened my knowledge considerably of CPDL with the help of my supervisor when writing the thesis. Fortunately my supervisor at the thesis stage of the programme helped me to read new publications and from where to obtain them. Perhaps in the future I will have other fields of interest in which I will read in depth.

I developed values such as responsibility and commitment to my work as well as professionally developing myself. My professional practice has been influenced by what I have been doing on the programme. I discuss very often with people from different sectors of education what I am researching. I feel the need to share with others what I have researched already. I encourage my staff to carry out research at the school level. Thus I am more

engaged with my school. I use the literature and findings of my IFS and thesis to promote CPDL in my school. I am planning to introduce lesson study and peer coaching as I complete my thesis. This will be in line with the Nine Year Schooling (MOEHRSR, 2016), a policy newly introduced by the MOE.

Now I feel more poised and confident to carry out research and publish my work. Sharing my knowledge with my colleagues is my priority. I discuss issues pertaining to teaching and learning with my staff and introduce new ideas at school. As a researcher I am hoping to add to the literature by using the research skills I developed throughout my studies and disseminating my work. I support my staff to work in collaboration and share their experience in a quest to provide a better quality of education to the students of our school and across the system.

I observe classes and discuss with teachers how they can improve their teaching. I reflect on what I see in terms of teaching and learning, look for feedback from students and discuss with teachers ways to improve both their performance and that of their students. I want teachers to have the necessary skills needed to conduct an effective lesson where children learn and make good progress. The courses I attended during my doctoral studies helped me to be fully aware of my responsibility in transforming the lives of pupils of my school who mostly come from a poor background or low socio-economic status.

In terms of knowledge acquired while reading and reviewing critically the literature, I have been able to develop the skills of reflecting what I have to do in schools as far as learning-centred leadership is concerned. Throughout my career I have developed an interest in fields such as quality education, CPDL, mentoring and lesson planning among others.

Comparative dimension of my thesis

I learned about presentations and understanding the research of others when I attended the research weeks at the UCL IOE. Though I did not participate in the research week, I intend to give some presentations on what I have researched over my programme at the UCL IOE with the members of my staff for their PD. The different presentations gave me the opportunity to see the scope of research carried out by doctoral students at the UCL IOE and to talk to people from different backgrounds. Also while attending courses I had the possibility to listen to what students of the course had to say on either their systems of education or topics of their interest. It was interesting to have an overview of different aspects of education in different countries, cultures and know the different dimensions of the programme. That was a great experience, which I can share with people in my country apart from that being a personal enrichment. That comparative dimension has expanded my horizons of looking and

understanding the world of education from, for example, Singapore to Finland and Canada to South Korea.

Chapter 1 Background to the Thesis

1.1 Introduction

This chapter provides a rationale for the study, the context of the work and my professional background. The focus of the research was on how Continuing Professional Development and Learning (CPDL) could enhance the quality of teaching in State Secondary Schools (SSSs) in Mauritius. It aimed at finding out what competencies and skills teachers (also referred to as educators in this thesis) would like to acquire or develop and what forms of CPDL would help them to do what they are doing better. The existing forms of CPDL have been examined and the ways the present system of CPDL could be improved has also been addressed. This research will be important to different stakeholders in education including the Ministry of Education (MOE) and will support a bottom-up approach to policymaking rather being top down.

In a quest to improve the quality of education (MOEHR, 2009), the government of Mauritius expressed its intention to bring in new policies to CPDL and its provision (MOEHRSR, 2016) in addition to revisiting existing policies (PRB, 2013). For any system, which aims at excellence, the quality of teaching is fundamental (MOECHR, 2009) and teachers should aim to achieve that goal (op. cit.; MOE, 2014; Barber and Mourshed, 2007). The European Union (EU) and UNESCO also expressed this view. According to the EU a pre-requisite for high quality education is to focus on high quality teaching (UNESCO, 2014c). In fact many countries embarking on educational reforms have recognized that CPDL is one of the key elements for such reforms (UNESCO, 2003).

Below I describe the context in which this study has been carried out.

1.2 The context of the study

The research has been carried out in Mauritius which is a small (2040 sq. km) island off the south-eastern coast of the African continent. It is a multiracial, multilingual and multi-cultural country with a population of 1,263,500 inhabitants (Statistics Mauritius, 2016). The population is composed of descendants of labourers from India, slaves from Mozambique and immigrants from Asia, Africa and Europe (Bunwaree et al., 2004). English is the official language but French and Creole are used in daily interactions by 80 per cent of the population. Formerly, the country was a British colony and gained its independence in 1968.

Mauritius has limited natural resources. In the 1960s the island relied mostly on sugarcane as the main pillar of the economy. Since then the country has transformed its agro-based economy into an export-oriented manufacturing economy with a strong sector based on tourism (United Nations, 2001; Marock, 2011) which led to its economic success with gross

domestic product of 9,729 million US dollars and an annual growth rate of about 4 per cent (United Nations, 2013b). In sub-Saharan Africa, Mauritius is classified as an upper-middle income country.

To meet new challenges, the country is broadening its economic base by embracing the knowledge economy (MOEHR, 2009), which will add to the other pillars of economy namely textiles, tourism, financial sector and ICT. In order to make the transition to a knowledge economy it is critical for Mauritius to develop its capacity first and foremost in education to construct the necessary human capital (MOEHR, 2009).

1.3 Mauritian education system

Education is free in Mauritius. The education system is quite similar to the British model, having been a British colony. It corresponds to six years of primary school, five years of lower secondary school and two years of upper secondary school (6-5-2). The Education Act of 2005 has made schooling compulsory up to the age of 16. Secondary students have free transport and there is a free book scheme for poor students. In 2012 the gross enrolment rate in primary education reached 99 per cent whilst the secondary enrolment rate was 76 per cent (Educational Statistics, 2012). So virtually all the pupils who are of school age attend schools where the medium of instruction is English.

The secondary sector of education consists of private and state schools. In 2018 there were 63 SSSs made up of 14 'national schools' and 49 'regional schools' which cater for approximately 43 per cent of the secondary school population. These schools are clustered in four zones. The remaining 57 per cent of students attend 126 private aided or non-aided schools. The private schools are under the supervision of the Private Secondary School Authority (Statistics Mauritius, 2016).

1.4 Organization of schools

In 2018, the government brought a major change in the education system by introducing a new policy of nine-year schooling (NYS). This policy makes provision for all students to complete nine years of basic schooling (MOE, 2016). This reform replaced the previous system that was seen as too competitive and resulting in an unacceptable percentage of children not being adequately literate or numerate despite completing six years of primary schooling (MOE, 2016).

SSSs operate in a highly centralized system. School principals are government officers accountable to their immediate hierarchical heads, their zone directors. Figure 1.1 illustrates the organization of state schools at the MOE.

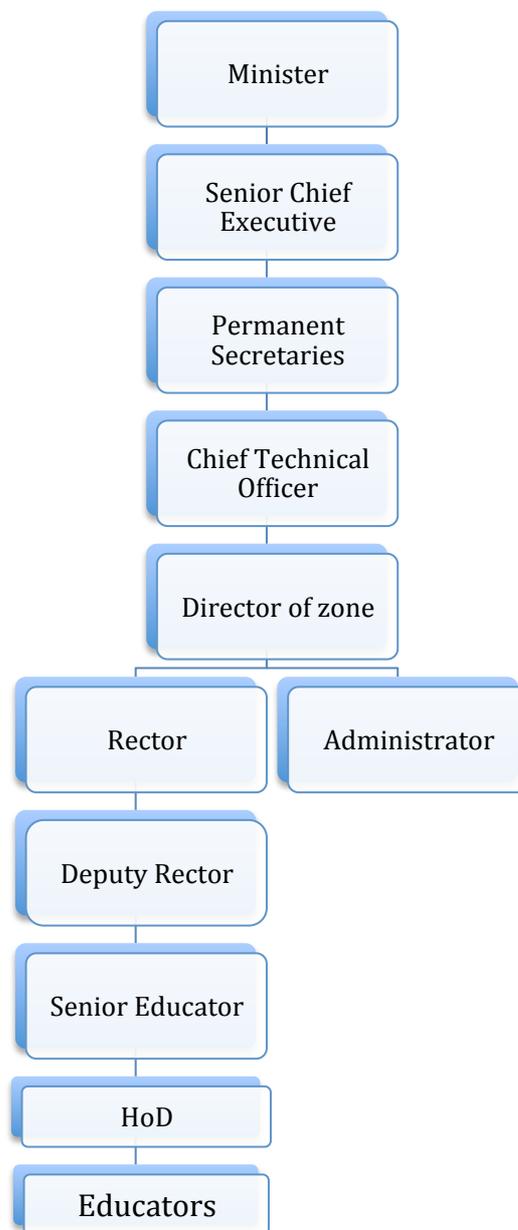


Figure 1.1: Organization of state schools at the MOE

The Minister as an elected member of government has legislative powers. Officers from the Senior Chief Executive to the Chief Technical Officer have executive powers but they also frame educational policies that alter the educational landscape of the country. Those officers hold considerable power in the management of the ministry from recruiting personnel to work on specific tasks to autocratic decisions in the posting of officers. Zone directors are only responsible for the implementation of educational policies. All officers at different levels of the hierarchy have roles and responsibilities that are relevant to my research.

1.5 Recruitment, qualifications and professional development in SSSs

The Public Service Commission (PSC) is responsible for recruiting educators (teachers), senior educators, deputy rectors and principals in the SSSs. The posts of educators are advertised in the local newspapers and qualified candidates are invited for an interview by the PSC (Appendix 1). They are posted to different state schools by the MOE after appointment. Educators need no initial training to join the SSSs (PRB, 2013). Usually educators are confirmed in their posts after a probationary period of one year (MOECHR, 2009) and become civil servants enjoying such benefits as job security, yearly increment in salary, sick and local leaves among others (PRB, 2016).

In order to provide training for educators joining the SSSs, the PRB Report (2008) recommended that from July 2012, an Educator's Licence should be a requirement for the post of Educator (Secondary) and subsequently as from a date after 2010 to be decided by the MOE, a Post Graduate Certificate in Education (PGCE) or its equivalent would also be a requirement. However, in the PRB report 2013, due to the dearth of candidates holding those qualifications the new requirements were deferred for a future date to be decided by the Ministry (PRB, 2016). Consequently, educators recruited in a temporary capacity, in future, will be appointed in a substantive capacity only upon successful completion of a one-year course leading to an Educator's Licence to be provided by the MOE.

In order for teachers to perform their duties and responsibilities effectively they require specific skills and competencies (see Appendix 1). Contrary to Mauritius, in many countries teachers are trained and gain a teaching qualification before embarking on the profession. The educators work under a HoD who is selected on a seniority basis from educators of the department. HoDs have to work for approximately 840 minutes (24 periods) weekly and are required to carry out a revised list of duties for which they receive a monthly allowance (PRB, 2016). They have to monitor the implementation of the curriculum and classroom pedagogy; ensure that good quality of teaching takes place; act as mentors to new recruits; and monitor strategies to improve teaching standards and support CPDL. The duties of the HoDs in mentoring new recruits and in providing training for educators are clearly outlined here and this aspect is one of the main concerns of this research.

Furthermore, in order to improve the quality of teaching the PRB (2013) recommended the creation of a new post of senior educators in SSSs who are selected from very experienced teachers. The senior educators are responsible for introducing pedagogical programmes for quality enhancement in student and teacher performance; organising and running in-service training courses and advising on teaching methods and education programmes as well as on new trends in education.

SSSs are under the responsibility of a principal selected by the PSC from qualified and experienced educators already in the system. Principals are posted by the MOE to schools and may be transferred at any time. The principal is responsible for facilitating the implementation of all reforms and educational projects with a view to attaining the national goals for education. The principal has also to perform administrative, socio-cultural and pedagogical duties such as organising and monitoring of teaching and learning and other educational activities. In addition they are responsible for ensuring the quality of the education imparted at school (MOECHR, 2009).

Different types of workshops are organized by the MOE, QAID and the zone directorate for educators teaching the same subjects, all subjects, newly recruited educators, experienced or supply educators. Modules taken in the one-year training course could be banked towards a PGCE to be completed within a period of five years (PRB, 2016). Workshops are held during vacation and they are mandatory (PRB, 2016).

1.6 Quality education

Quality in education is a recurring theme in government policy documents. Quality education has been high on the agenda in the reports published by the government over the past decade. For the period 2008-2020, the government planned to create a strong Quality Assurance system to secure internal efficiency and quality teaching and learning (MECHR, 2008). As a result, the QAID (PRB, 2013) was established.

The QAID aimed to describe levels of teaching quality to which teachers should aspire and to assure development opportunities (MOE, 2014). Before the creation of the QAID, there was a noticeable absence of national norms and standards governing the teaching and learning process within the classroom. The National Inspectorate, which was responsible for inspections in schools, was dissolved. Furthermore the QAID aimed to ensure that the MOE fulfils its aims of providing World Class Quality education (PRB, 2013). However, a report produced in September 2014, revealed an absence of national norms and standards governing the teaching and learning process (MOE, 2014).

There are no standards that have been set for secondary schools to achieve. There is no rating of schools as is done, for example, by the Office for Standards in Education in England. There is no framework on which the QAID operates. Schools do not have to account for the performance of pupils or teachers. Many SSSs have poor performances (far below the national average of passes) at School Certificate and Higher School Certificate examinations and no explanations are sought. Undoubtedly the existence of standards would have helped to improve the quality of teaching and raise the performance of students.

A close analysis of official reports shows that despite the creation of the QAID, there is considerable work to be done in order to improve the quality of teaching for it to reach world-class quality, as was the initial aim. I found in my IFS (Peerthy, 2015) that teachers in my school wanted to improve their teaching but importantly did not know how to do it. My IFS was a study of 'the introduction of a new policy measure by the QAID on lesson planning and its influence on teaching in my school'. Teachers wanted to have the support of the QAID to provide them with solutions for their problems but this never happened. The core issue that emerged from my earlier research was the quest for teachers to improve the quality of their teaching; this is the driving force for my interest in doing my thesis on CPDL and quality of teaching.

Moreover, it could be found that there were many great ambitions coming from the government but it was not clear if they were materialized. Like most government documents they were aspirational. According to Fullan (2011) the problem arises because the wrong drivers of educational reform are chosen. In his view these wrong drivers may appear superficially attractive to policymakers but the evidence to support their effectiveness or impact is limited. In contrast, the right drivers of school and system improvement are those associated with changing the culture of the school and the system (values, norms, skills, practices, relationships) rather than altering structures, procedures, and other formal attributes (Fullan, 2011).

1.7 New start with Nine Year Schooling (NYS)

The NYS (MOEHRSR, 2016) places heavy emphasis on the training of educators and one of its five pillars is CPDL. It states that 'all educators will have a specified number of hours of PD that will sustain their mastery of knowledge and enhance their pedagogical skills for the effective delivery of the curriculum' (op. cit, 2016, p. 25). This new policy is considered vital to my research as it lays much emphasis on CPDL and introducing new measures. These new measures include mandatory pre-service training; proper induction and mentoring; teachers' professional standards; continually improving teachers' professional competence in pedagogy, instructional skills, classroom practices and adolescent development; creating the conditions to facilitate sharing through the establishment of a community of good practice within and across the schools and setting up a Teachers' Council.

These measures are meant to raise the quality of teaching in the SSSs. Moreover there are strategic actions laid down in the policy document (op. cit, 2016, p. 50). The government has elaborated ambitious plans for CPDL over the next 15 years. For the period 2016-2020, the MOE would like to:

- create a diversity of CPD platforms (School Based In-service Training, mentoring, mixed-mode-face-to-face/on-line...) to enhance pedagogical capabilities of teachers,

based on training needs analysis in formative assessment and in utilization of remediation and improvement of learning outcomes;

- increase digital proficiency of teachers; construct intra- and inter-school networks and establish communities of practice;
- set up Teachers' Resource Centres, one in each Educational Zone;
- set standards for quality teaching and specifically focus Teacher Education Programmes on Science, Technology and Mathematics.

Over the period 2021-2022, the MOE intends to develop strategies to attract the best qualified and motivated candidates to teaching and from 2026-2030, the plan is to attract the top 30 per cent graduates to the teaching profession. The strategic plans of the government give due consideration to the importance of CPDL in improving the quality of education. In fact, as discussed in Chapter 2, Singapore and Seychelles which are similar island economies to Mauritius, have already made considerable progress in this field, so it will take a long time to reach where they are currently in terms of CPDL. The activities mentioned above are relevant to improve the quality of teaching as discussed in Chapter 3, the literature review. My research questions will help to provide answers to what is needed in terms of teachers' skills and competencies and how a policy of CPDL could be successfully implemented (see Chapters 7 and 8).

1.8 Rationale for the study

This study aimed to find out how CPDL could help teachers to acquire the skills and knowledge they are looking for to improve the quality of teaching and learning. In order to achieve this aim the views of teachers, HoDs, principals, QAID inspectors and directors at the MOE have been sought. This study is important for three reasons namely, the need for CPDL following government reports (op. cit, 2016); my IFS findings showing that teachers were requesting training (Peerthy, 2015), and improving my own professional practice as a principal and school leader.

It was a mere coincidence that I intended to research several of these aspects before the policy was written. Thus, I got the opportunity to carry out an in-depth study of CPDL largely from the teachers' point of view. My research has been timely and would provide evidence on the gap that exists now. Furthermore, the MOE has set its policies for CPDL (MOE, 2016) and my research has looked for the skills which are important for teachers to develop professionally. These policies emphasize the importance that the MOE has given to CPDL and that concurred with what I found in my IFS.

School and system transformation is more likely to be positive and sustainable if the policy

drivers are based upon sound, independent and empirical verification (op. cit). My research would be relevant in that case as it used a bottom up approach, looking at CPDL from the perspectives of teachers, HoDs, principals, quality assurance officers and directors of MOE. All the strategic actions mentioned in the policy document needed to improve teacher quality through PD (op. cit, 2016, p. 50) are currently non-existent. The recommendations of this research as depicted in chapter 7 might be of some help to supplement or inform the policy of the government on CPDL.

1.9 A professional need

As a principal I felt the need to prepare myself to provide CPDL and meet new challenges of the job. Undertaking the research provided me with the opportunity to learn and reflect on how others carried out CPDL. It was essential for me to acquire the skills of a learning centred leader as I have the responsibility to improve performance of teachers; to introduce school transformation projects, and provide my students with good quality teaching, which is their right. My study of CPDL provided a framework to examine and develop my practice through research and engagement with relevant theoretical perspectives and professional and academic literature. Developing my research skills and working from the research findings will, hopefully, help me in my endeavour to improve my school, and indirectly those of others on the island.

As a researcher I hope that this study helps to broaden our understanding of the need for CPDL and its implications for professional practice. Also that it contributes to further professional and academic knowledge of CPDL in both Mauritius and similar states.

1.10 Research questions

In order to be able to carry out my research on CPDL and its importance in improving the quality of teaching, I thought that the following research questions (RQs) would be helpful. They are broad and designed to provide an insight into the role of CPDL in improving the quality of teaching. The RQs have been informed by my own experiences and the extensive reading of the relevant literature. My main RQ is:

- What kinds of CPDL can make individuals better teachers?

whilst the subsidiary questions are:

- In the view of teachers and principals what competencies and skills need to be acquired or further developed to improve the quality of teaching?
- What role, if any, does CPDL have in meeting these needs?
- To what extent is the CPDL currently provided helping teachers to meet the identified needs?

- How can the present system of CPDL be revised to ensure teachers' needs are met and they are able to develop as effective practitioners?

1.11 Summary

In this introductory chapter I provided the context within which the research is framed. I described the educational reforms in Mauritius embracing a new culture on performance and CPDL. Then I explained the rationale for the study on CPDL. My research is concentrated on how CPDL could help teachers to become better teachers by acquiring new skills and improving their competencies. The aim was to find out the importance of CPDL in enhancing the quality of teaching and to what extent the present system was able to fulfil that role and to find out how it could be improved.

1.12 Overview of the thesis

Chapter 2 discusses how countries very similar to Mauritius have been able to improve the provision of their CPDL and its importance on the quality of teaching.

Chapter 3 reviews the wider literature on CPDL looking at its definition, its importance and impact on teachers' practice as well as its shortcomings. Different models of CPDL are reviewed, looking at their provision, strengths and weaknesses. The different criteria for successful CPDL programmes are also analysed.

Chapter 4 presents the research design and methodology for the study. I describe the various phases of the study. I used a mixed methods approach to collect my data starting with a survey of what principals were doing in their schools in terms of CPDL. I then conducted interviews with teachers, HoDs, principals and directors. I used case studies to look in depth at what schools were doing in terms of CPDL.

Chapters 5 and 6 describe in detail the method of analysis. In Chapter 5 the data from the survey are analysed while Chapter 6 deals with the analysis of data collected from the interviews conducted.

Chapter 7 discusses the research findings reported in Chapters 5 and 6. It presents a synthesis of the findings specifically in relation to the five research questions. The main forms of CPDL that can make individuals better teachers are discussed as well as the skills and competencies teachers need to improve the quality of teaching and how to improve the present system of CPDL after considering its advantages and disadvantages.

Chapter 8 presents the conclusions and recommendations. It includes the contribution of my

research to the literature and its implications for further study. It also considers my professional role and how the work will be disseminated.

Chapter 2 What we know about CPDL in small islands

Chapter 1 showed how the Mauritian government has put Continuing Professional Development and Learning (CPDL) high on its agenda by formulating new policies for the education system. The government has strategic plans on how to achieve appropriate levels of CPDL over the period 2016-2030 (MOE, 2016). However, there is substantial evidence from the literature on CPDL that many countries have already embarked on such projects in the past. Countries such as Singapore, South Korea, Hong Kong, China and Canada have been very successful in developing their provision of CPDL. By looking at what Small Island Developing States (SIDS) such as Singapore and Seychelles have done to develop successfully their provision of CPDL, Mauritius can scrutinize how these countries have introduced CPDL, what types exist and what problems they had faced or are continuing to face. There is a lot we can do by learning from them being of the SIDS countries. First, let us see how the Seychelles managed CPDL before analysing why Singapore has been so successful.

2.1 Seychelles

The Seychelles has a population of 94,677 inhabitants (NBS Seychelles, 2016), which is one-tenth that of Mauritius. With the same objective of improving the quality of education, the government of Seychelles launched a key strategy - the School Improvement Programme (SIP) in 1995 which had school-based staff professional development as a key factor. The programme is successful and still ongoing but with much reduced support centrally (MOE, 2015). This implies that the support from the government was essential at the beginning. Here the Mauritian government could consider looking into what would work for our island.

The government played an important role by institutionalizing CPDL through the SIP. Time is allocated for school-based CPDL on a weekly basis within the school timetables and a PD facilitator organizes the delivery of PD sessions in consultation with staff (MOE, 2015). In Chapter 1 it was noted that HoDs and senior educators in Mauritius are responsible to train teachers but no time has been allocated for that purpose.

In order to be able to improve quality, as discussed earlier, standards need to be set up, which so far do not exist in Mauritius. In Seychelles, an Inspectorate Unit was set up in 2010 with the aim of 'Guaranteeing Quality Education in Schools'. Its main focus was to set standards to guide schools to improve the quality of their self-evaluation process, thus enhancing the quality of education for all children.

In 2006 the Seychelles' government set up regional centres for the purposes of promoting networking between teachers and schools and for PD. Materials and equipment were

procured through a project funded by the Commonwealth Secretariat. The centres were located on school premises, making access relatively easy for neighbouring schools. Permanent staff provided by the Ministry of Education (MOE) helped to engage teachers and school leaders in a range of collaborative activities. The centres are still operational but they are no longer staffed full-time (ibid, p. 24).

One interesting point to note is that, unlike Mauritius, regular CPDL activities exist in Seychelles. Improvement in teacher quality is targeted through regular school-based professional development activities. A PD facilitator, selected from among the teaching staff, plans and ensures the delivery of weekly PD sessions based on staff's expressed needs (ibid p. 27). However, teachers do not always perceive the compulsory nature of SIP school-based PD activities as useful, and they sometimes resent having to attend. Schools tend to offer a single activity per session rather than options linked to teachers' needs (Purvis, 2007). Teachers are not always consulted on the relevance of the activities to their needs. Moreover student performance remains relatively low in spite of considerable investment in improving infrastructure, teacher and leadership training (ibid p. 30).

In Mauritius also the tendency is that it is mandatory to attend courses or training which are not linked to the needs of teachers. That is discussed in detail in the literature reviewed and in Chapter 7 of the thesis. It is equally important to consider that a lot of money could be spent on training (e.g. the one-off workshops off-site) without having any significant effect on student performance as noted by Purvis (2007).

The main learning points from the experience of Seychelles is that time is allocated specifically for CPDL, there is follow up by the inspectorate, and compulsory CPDL does not necessarily help teachers improve student performance. These are discussed further in Chapter 3.

2.2 Singapore

I have chosen to study the models of CPDL in Singapore because it is well known for its successful education system. Singapore has a population of 5.5 million inhabitants which is much bigger than Seychelles and Mauritius though all of them form part of SIDS. Thus Singapore is small only in the geographical sense. Its multicultural and multilingual society is composed mainly of Chinese (76%), Malay (15%) and Indian (7.5%) peoples (SDS, 2015), whose mother tongue languages - Mandarin, Malay and Tamil - are taught in all its schools. Although English is the language of instruction, it is the home language for a minority of students. The government operates about 75 per cent of schools in Singapore.

Singapore is a model on the international scene considering students' achievements in international benchmarked assessment rankings, such as PISA (Barber and Mourshed, 2007). This has been possible due to policies of the government and its long term planning. The government's policies and strategic initiatives have successfully incentivised many teachers to improve themselves professionally and to keep up with new ideas and demands. Continuing education for teachers in the last 50 years of Singapore's history has seen many successes that contributed to a highly skilled teaching force. A close analysis of what the Singaporean government has done in terms of CPDL could help the Mauritian government significantly.

In fact, the Ministry of Education (MOE) in Singapore has provided opportunities at every stage and in every way to deepen teachers' skills and expertise. It aims to strengthen a culture of learning among its teaching force, a culture of teachers growing teachers, and in the process, nurture a pipeline of teacher leaders who are accomplished in their profession and able to lead fellow educators (MOE, 2014). The Mauritian government can find out how its Singaporean counterpart has provided opportunities to teachers and adapt it to the local context.

In Singapore there is initial teacher training which the government of Mauritius is now willing to introduce (MOE, 2016). The National Institute of Education (NIE) is the national teacher education institute of Singapore, providing both pre-service and in-service teacher education programmes. The MOE, the NIE and over 350 schools are the main actors for strengthening teacher quality. The MOE is constantly learning and developing new ways of facilitating teachers' growth. According to Heng (2014), beyond the initial qualification, what matters most for teachers is this commitment to a lifetime of honing one's craft. He also stressed the importance of teachers' own determination to become better in what they do – a professional culture of self-improvement.

Apart from putting in place policies and guidelines for PD and providing various kinds of intellectual and material support, it set up the Academy of Singapore Teachers (AST) to spearhead and coordinate CPDL of all subjects and domains, and to promote a culture of teacher led professional excellence (Goh, 2016). The AST works closely with all other teacher academies and institutes, communities of practice in schools, and school networks, and this has contributed greatly to the provision of CPDL that is aligned to the Ethos of the Teaching Profession in Singapore (AST, 2012). In this regard, Singapore has also developed a learning framework called the Teachers' Growth Model which guides CPDL and growth (MOE, 2012). Learning how the Singaporean government set up the AST might be of help to Mauritius in setting up its Teachers' Academy in the future.

Singapore schools also play a critical part in their teachers' continual learning. To strengthen a culture of teacher-led professional excellence in schools, professional learning communities (PLCs) were introduced in schools. PLCs in Singapore are a 'state-led initiative which aims to instil a cooperative approach to teacher learning', bringing 'teachers together to collaborate in communities of reflective practitioners' (Lee et al., 2013, p. 53). Spread across all schools in Singapore, PLCs have a coherent underpinning philosophy based on a conceptual framework developed by AST and are supported in practical aspects of organising teacher learning. In addition, the position of School Staff Developer has been created to assist individual schools identify their professional learning needs and manage school-based PD efforts (Goh, 2016). One of the ways to help the Mauritian teachers to develop professionally is to provide them with opportunities to collaborate and share good practices.

In Singapore, NIE collaborates closely with the AST and schools to ensure that it offers timely learning opportunities that are relevant to teachers' needs, and that it is able to play an active and critical role in supporting MOE's goal of having a teaching workforce of high professionalism and excellence (Tan et al., 2010). It is essential to understand that training should be timely and relevant to the needs of teachers. In Chapter 7, there are many examples which show that in Mauritius training of teachers has come too late.

2.3 Opportunities and support

The following discussion is about how Singapore provides the training which can be of interest to the Mauritian government to decide which models of CPDL to adopt. In Singapore, CPDL opportunities can be categorised as formal certificated and accredited teacher learning; contextualized and work-based teacher learning; and personal and self-paced teacher learning (Goh, 2016). Formal teachers' continuing education consists of study programmes, short courses and workshops, and professional events offered by NIE. It plays a key role in offering relevant certificated opportunities to education officers. For example, the Professional Development Continuum Model is provided to teachers on a part time basis by the NIE and the Professional Development-Higher Degree Pathway is offered to enable teachers to complete up to four standalone Masters-level courses as an in-service participant before applying for admission to a Master's degree programme. This is the academic route.

Conference attendance and presenting papers at local and overseas conferences form part of formal teacher learning. Teachers are usually nominated by their schools to attend important conferences on teaching and education research, as well as discipline-specific ones. This trend can largely be explained by MOE's efforts at developing teachers' classroom inquiry capacities (MOE, 2008), as well as more teachers having received a Master's or a doctoral education.

Another form of CPDL in Singapore is the work-based teacher learning which takes the form of PLCs. Innovations, such as PLCs within schools and school networks, have also been strengthened through bottom-up initiatives, reflecting teachers' professionalism through ownership of their learning. In a PLC, teachers meet together in groups of about four to eight members during a timetabled period to work on enhancing teaching and student outcomes. They engage with colleagues in a department or school based collective activity, such as planning lessons and developing assessment literacies.

In parallel there is a platform for the exchange of ideas to bring about improvements in daily teaching. This is the Networked Learning Communities which also helps in solving specific educational problems. PLC activities are not restricted to teachers in a school or their networks. External experts from university or faculty members from NIE or overseas institutions, or Master Teachers from AST and other academies are also invited to introduce new ideas, such as by offering teachers tools for reflection or analysis of classroom data, or to act as a catalyst to spur teachers to examine their own practice or sharpen their professional dialogues. Through participation in professional learning, teachers also develop positive professional selves, in particular when they can influence the directions of their own professional learning and the ways its success can be evaluated (Lee and Lee, 2013).

Recently, the Centre for Teaching and Learning Excellence was created in Singapore (Yang, 2015). The Centre has Master Teachers of curriculum subjects from AST, as well as NIE experts, teaching alongside teachers from the school. The establishment of such a centre is an example of the nation's continual collaborative quest in offering innovative ways for teacher learning. It aims at enriching teaching in the school. The lessons taught by the experts and the teachers also serve as demonstration classes which can be observed by both practising and pre-service teachers through special facilities, such as one-way mirrors.

Singapore recognizes the need for teachers to keep up with the rapid changes occurring in the world and to be able to constantly improve their practice; they are entitled to 100 hours of professional development per year. This may be undertaken by following courses at the NIE which focus on subject matter and pedagogical knowledge and lead towards higher degrees or advanced diplomas.

Much PD is school-based and led by staff developers. Their job is to identify teaching-based problems in a school, for example, with a group's mathematics performance; or to introduce new practices such as project-based learning or new uses of ICT. Each school also has a fund through which it can support teacher growth, including developing fresh perspectives by going abroad to learn about aspects of education in other countries.

A study by Chang et al. (2015) has provided empirically based insights into how the CPDL hours were being utilised. They observed the intertwining of success factors and challenges in the CPDL work done in Singapore. The multipronged support structure, the top-down but guided approach, and teachers' sense of professionalism all contributed to the high level of teacher participation in PD. The researchers suggested that these enablers could also simultaneously constrain teachers because of conflicting priorities among the needs of the school, the department and the teachers themselves.

Developing a quality teaching force and the continual professionalisation of the work of teachers through PD has been a result of thoughtful planning and careful implementation by the Singapore government. There is a deep collective belief among key stakeholders in Singapore that teachers' own learning will directly raise the quality of education for every child. It is this belief that drives the country's commitment to excellence in teacher continuing education and that has resulted in many of the successes experienced today (Goh, 2016).

However, commentators have questioned how much deep learning takes place and the extent to which teachers' learning becomes embedded in their day-to-day practice. The availability of sustained forms of learning is also a major concern noted in the PD literature. The most prevalent format across many countries and systems is the offering of standalone courses or workshops. These activities, however, have often been criticised for their 'one-off' treatments of professional or curricular needs, quick fixes that do not allow for teachers' prolonged engagement with the required knowledge and skills.

The MOE in Singapore believes that teachers should be encouraged to carry out action-research at the level of their school as that will develop their problem-solving skills and take a critical stance towards their own practice (McNiff and Whitehead, 2002). Another advantage is that they will generate new knowledge about students' learning including innovative strategies from bottom-up against the centralization of education systems (Karagiorgi et al., 2006). However, one drawback is that it takes time and a lot depends on the school leaders' willingness to change organizational structures.

2.4 Conclusion

The Seychelles and Singapore are examples of SIDS who are trying to use CPDL to improve the quality of teaching and learning in their schools. Though there are some criticisms regarding the model existing in Seychelles, Singapore is considered as a leading player in the field of CPDL (Jensen et al., 2012). Creating a system like in Singapore requires purposeful policies in a number of areas that shape the teaching force and the work of teachers. One of these policies is professional learning (Darling-Hammond et al., 2017). Though Mauritius is not as rich as Singapore, there are some types of CPDL discussed in this chapter which do not require a lot of money but simply imagination and leadership as well as commitment on

the parts of principals, HoDs and teachers as shown in the data analysed in Chapters 5 and 6.

Singapore has improved so much in its education system that it serves as examples for other countries (Darling-Hammond et al., 2017) together with Canada, Australia, South Korea, China and Finland (Jensen et al., 2016). Notwithstanding the limitations of global policy borrowing (Coffield, 2012) Mauritius can learn from these successful systems and adapt what is good for it while developing its CPDL. In Singapore more attention is being paid to schools and teachers deciding what CPDL is needed to meet school improvement goals, to decide on their providers e.g. British Council. It can be seen that Seychelles has faced some problems in providing CPDL and that also must be taken into consideration when providing CPDL. Mauritius can learn from the mistakes of Seychelles by adopting thoughtful policies when choosing the appropriate models of CPDL, deciding who will provide them, and who will have the responsibility to see that what is learned in training is replicated in classrooms. These two countries provide concrete examples of what can be done as well as what can be successful in terms of CPDL.

Chapter 3 Literature review

3.1 Introduction

This chapter reviews the literature on continuing professional development and learning (CPDL) to inform and illuminate the research questions of this inquiry. First, I look at the definitions of CPD and CPDL that would be used in the research. Then I discuss the importance of CPDL as it shows how professional development (PD) could solve the problems that teachers face when they are in classrooms by providing them with the skills and competencies necessary to improve the quality of their teaching. The different types of CPDL existing in schools and externally are then discussed. In order to introduce CPDL policies effectively, it is essential also to consider the constraints existing at the school and system levels and what elements are important to make PD successful. This is also discussed in the chapter.

The literature was searched mainly by using electronic databases which provided access to e-journals from the UCL IOE online library services. I examined mostly the literature from 2010 onwards. The key words used to search the literature were CPDL, competencies and skills for effective teaching, mentoring, coaching, professional learning communities and types of CPDL. The literature sources were derived from Google Scholar, ERIC, JSTOR and SAGE. IOE prints and books available at the UCL IOE library were also used.

The literature I explored in England was mostly related to the extensive work on CPD undertaken at the IOE by Bubb, Earley, Greany, Porritt, Stoll and colleagues. I referred to the Teaching and Learning International Survey (TALIS) reports for OECD countries. Recent research overviews by Cordingley et al. (2015), Darling-Hammond (2017), Kennedy (2016) and some earlier seminal works, for example, Joyce and Showers (1980) and the James Report (1972), were also consulted.

The literature review helped me to understand CPDL as it was carried out in different parts of the world, the different types of CPDL in existence, the problems which occur with different models of CPDL, as well as their benefits and what was essential for CPDL programmes to be successful. The salient features in all these studies informed me on aspects I had to concentrate on for my research and on the usefulness of CPDL to improve the quality of teaching in the State Secondary Schools (SSSs) I studied.

3.2 Continuing Professional Development and Learning

Since the publication in England of the James Report (DES, 1972), a seminal work on professional development, emphasis has been that each school should regard the continuing training and development of teachers as an essential part of its duties. In the report PD is defined 'as in-service training (INSET) or as the whole range of activities by which teachers can extend their personal education, develop their professional competence and improve their understanding of education principles and techniques' (DES, 1972, p. 11). CPD is more than initial teacher training (ITT) as pointed out by Craft (2000, p. 9) who defines CPD as continuous and encompassing 'all types of learning undertaken by teachers beyond the point of initial training'.

In my thesis I am using the definition of Bubb and Earley (2005) which refers to CPD as:

An ongoing process encompassing all formal and informal learning experiences that enable all teachers in schools, individually and with others, to think what they are doing, enhance their knowledge and skills and improve ways of working so that the pupil learning and well being are increased as a result. It should... encourage a commitment to professional and personal growth; and increase resilience, self-confidence, job satisfaction and enthusiasm to work with pupils and colleagues (2005, p. 4).

I have slightly modified the definition by replacing the word 'staff' by teachers. I chose this definition because I was interested in the notion of enhancing the knowledge and skills of teachers, their commitment to work, their PD and their capacity to reflect on their practice. As teachers in SSSs have to deal with many problems at the level of the classroom without much support from the MOE, it is necessary for them to be resilient. The term CPDL refers to the ways in which teachers embed the outcomes of professional development in their practice and the processes that help them to make this work (Cordingley, 2013).

Bubb and Earley (2010) pointed out that CPD does not refer to one activity or set of activities or a course or series of courses, a programme of learning but any PD that may result from the individuals' reflection on their day-to-day experience of doing the job. Reflective, interpersonal skills for learning in professional communities are important, together with research skills. For the Training and Development Agency for Schools also PD is seen as a reflective activity designed to improve an individual's attributes, knowledge, understanding and skills (2007).

The idea of CPD being a process is discussed in the work of Porritt et al, (2017). They argue that professional learning and PD must be taken as two distinct and yet interconnected processes. Professional learning encompasses all the opportunities offered for teachers and leaders to learn something new, update skills, to be informed of new developments, explore new techniques or resources and refresh subject-specific knowledge. Such opportunities can

be offered in a wide range of ways; courses, seminars, reading articles, visits to other organizations, lesson study, enquiry and action research, masters qualifications, peer observation. Colleagues in the same or another school, a university, commercial organization or an independent consultant can facilitate such opportunities in-house. Hence schools can select from an array of CPD according to their context.

PD is the process that builds on what has been learnt to effect a change 'in the thinking and practice of our colleagues so that such change improves the experience and learning for pupils' (Earley and Porritt, 2009, p. 139). This improved practice needs to become embedded in a teacher's everyday interactions with learners before we can say there has been PD. While agreeing with the importance of professional learning as the process for 'solving entrenched educational problems' (Timperley, 2011, p. 5), Porritt et al. (2017) argue there has to be another stage after learning something valuable. It takes time to test out new understanding, skills, techniques and strategies and takes longer for improved practice to become habitual and embedded. They argue that as a result of professional learning there will be PD. This aspect is of interest to me, as the teachers of SSSs do not need a professional qualification to be employed as teachers, nor do they have a proper induction course or mentoring at school as discussed in Chapter 7. As noted in Chapter 1, there is no ITT for new recruits by the MOE.

Having analysed what is understood by CPDL, it is important to understand what quality teaching means. Quality teaching refers to strong instruction that enables a wide range of students to learn. Such instructions meet the demand of the discipline, the goals of instruction and the needs of the students in a particular context. It is in part a function of teacher quality- teachers' knowledge, skills and dispositions- but it is also influenced by the context of instruction (Darling-Hammond et al., 2017).

The quote 'CPD is about creating opportunities for adult learning, ultimately for the purpose of enhancing the quality of education in the classroom' from Bubb and Earley, (2007, p. 4) helped me to realize that CPD would be of great benefits to our teachers in SSSs in enhancing the quality of teaching. The literature elaborates on the importance of CPDL as shown in the following discussion. The main point to learn from the literature is that CPDL is not ITT.

3.3 Importance of CPDL

Skills acquired in ITT are reinforced in the in-service courses together with new ones. Both ITT and CPDL are important to improve the quality of teaching. In their seminal work Joyce and Showers (1980) found that teachers could acquire new knowledge and skill and use it in their instructional practice when provided with adequate opportunities to learn. However,

incorporating new ideas teachers have learned in CPDL programmes may pose some problems as those in service have already developed their systems of practice which they believe will optimally resolve the challenges they face and have been used to (Kennedy, 2016).

Even when pre-service teachers receive the highest-quality teacher preparation (Dean et al., 2005) that is not sufficient because the world of teaching is changing and the environments in which teachers work, and the demands placed upon them by society are increasingly complex (OECD, 2009). The OECD (ibid) purports that an 'initial teacher education of the highest quality cannot provide teachers with the knowledge and skills necessary for a lifetime of teaching' (p. 12). Moreover, pupils are expected to become more autonomous learners and to take responsibility of their own learning. Consequently, the education and PD of every teacher needs to be seen as a life-long task, and be structured and resourced accordingly.

In many European countries PD is considered a professional duty for teachers (Eurydice, 2003, 2008; European Commission, 2009). The TALIS reports revealed that teachers who receive more PD believe they work more effectively (OECD, 2008, 2013). Moreover, CPDL is aimed to help teachers 'improve what they do in class while teaching not merely what they know' (Hargreaves, 2011, p. 10).

CPDL improves pedagogical content knowledge (PCK) and teachers benefit from thinking about teaching and learning in actual practice. PCK is about selection of topics, useful forms of presentation, analogies, illustrations, examples, explanations and demonstrations. That is in line with the view of Kennedy (ibid) on the problem which teachers face when it comes to portray the content to the students. However, it is probably too dependent on expert guidance and support to be realistically left to school staff (OECD, 2013).

In fact when teachers have acquired a reasonable experience and skills they would be properly equipped to improve the quality of the teaching and become better teachers. Hattie's meta-review found that in order to ensure cognitive progress, effective teachers 'see learning through the eyes of their students' (Hattie, 2009, p. 22). They provide clarity on learning intentions and they know when learning is correct or incorrect.

3.4 Problems teachers encounter

In order to know how the CPDL will help teachers to improve the quality of teaching, the literature exposes the problems teachers face in class which are relevant to those the teachers in the SSSs encounter. By analysing these problems, teachers' skills can be reinforced. In this way I understand how to envisage solutions to our teachers' problems. The work of Kennedy (2016) on the problems teachers face in class has influenced the way I

thought of the difficulties teachers were facing. I have quite often reflected on the difficulties teachers had to teach when I observed classes as part of my job. The quote '...the problem which teachers face when it comes to portray the content to the students' (Kennedy, 2016, p. 957) enlightened me to gauge the problems teachers had to teach the curriculum effectively in the SSSs.

According to Kennedy (2016), the first problem is portraying curriculum content that enables naïve minds to comprehend it. Students on their own will not be able to understand the curriculum content by reading textbooks. They need help to make sense of new content. Thus, we see teachers providing 'demonstrations, pictures, movies, hypothetical problems, walked-through examples, devising learning activities for students to engage in on their own. These activities are the essence of teaching, and someone cannot be said to be teaching if the content is not portrayed to the students' (Kennedy, 2016, p. 954). This quote from Kennedy made it clear to me that to improve the quality of teaching it is imperative to have CPDL in the SSSs in Mauritius.

In new situations teachers have to think anew about how to contain student behaviour, how they will portray curriculum content and how they will expose their students' thinking when new topics are to be taught with a new group of students. Through CPDL teachers learn how to tackle these problems. The second problem is to create an atmosphere conducive for learning to take place. Teachers need to have authority to contain the behaviour of students so that they do not distract one another. There must be discipline for students to follow the lesson which is being taught and for their own safety.

Kennedy's third problem is for teachers to solicit student participation. Teachers face a captive audience, and sometimes a resistant audience. In the US, the problem is that school attendance is compulsory but learning is not (Kennedy, 2016). This statement illustrates the Mauritian context where it is compulsory for upper forms students to have an attendance of 90 per cent for the academic year whereas for lower forms there are minimum requirements and automatic promotion.

The fourth problem is that teachers have to find ways to expose their students' thinking. Without knowing what students understand at any given moment, teachers cannot know what to repeat, what to elaborate, or when to move on. Thus teachers ask students to share findings, read aloud, show their work, solve problems, and respond to one another's ideas and so forth. In fact the most useful knowledge for teachers is the knowledge they have in the moment, for this knowledge can guide their actions in the moment (ibid, p. 954).

Reflecting on these problems helped me to understand the skills which teachers need in the SSSs. I also realized how difficult it is for those teachers who have not had proper training to

teach properly. Some of the skills required by the teachers can be summarized as: involving all pupils in the lesson; using differentiation appropriately to challenge all pupils in the class using a variety of activities or learning methods; applying teaching methods appropriate to the national curriculum objectives; using a variety of questioning techniques to probe pupils' knowledge and understanding. Thus the literature detailed the different skills teachers needed to develop to improve the quality of teaching. However, these problems which are fundamental to teaching must be addressed simultaneously and continuously as quality teaching depends on all of them (Darling Hammond et al., 2017).

Now I consider the forms of CPDL that can help teachers to acquire new skills or further develop acquired skills.

3.5 Types of CPDL

The literature revealed that various forms of CPDL are likely to improve the quality of teaching. In-service teacher training is the main component of my research and that part of the literature helps to understand the different forms of CPDL that can be introduced in SSSs other than the customary one day off site workshop model. In fact, my knowledge of new forms of CPDL which exist has deepened and what I have heard from teachers has reinforced my understanding of what I can advise the teachers of my school to do or what I can introduce in my school. I explain the various models below.

Gaible and Burns (2005) categorize CPD into standardized, site-based and self-directed CPD, whereas Bubb and Earley (2013) use categories such as: individual; within school; cross-school networks and other external expertise when talking of PD. According to Gaible and Burns (2005) standardized CPD is designed to disseminate information to large groups of people, often via the Cascade model. In the Cascade model, a few select teachers from schools receive training as part of a larger group, with the objective to return to their local schools to disseminate the information to the teachers there. For example, there is an ongoing need to learn new skills for Information, Communication and Technology (ICT). So rather than every teacher having to learn at a distant location, which could be cost and time prohibitive, a few teachers receive training, then provide workshops, summits, or seminars for the rest of their peers.

The disadvantages of standardized CPDL include lack of adequate follow up with the original learner and limited further development of existing skills. Because of the 'one-size-fits-all' framework and the lack of ongoing support, standardized CPDL is often an ineffective method for long-term skill acquisition (Gaible and Burns, 2005). Standardized CPDL is often better used for introduction and awareness, rather than mastery of skills. Bubb and Earley, (2013) qualify it as one-day events.

Self-directed CPDL is encouraged for teachers who have specific individual goals or needs and are able to search out appropriate learning opportunities on their own. Self-directed CPDL can involve thinking, watching video examples of classrooms, watching programmes including those on Teachers TV; reading books on education or a field of study, keeping journals or a learning log or reflective diary, performing case studies, taking online courses, or observing classes taught by colleagues (Gaible and Burns, 2005; Bubb and Earley, 2013).

There are increasing resources available for practitioners, many of them online (Bubb and Earley, 2009). According to Jones (2013), Twitter can be used as an individualised mode of CPDL. It is a new concept of a networking style of CPDL. People share their thoughts, suggestions, disagreement or support with other like-minded souls. Text or photographic attachments are common. They decide who to follow and with whom to engage. This is useful to the author in the following ways: Twitter provides a wide and instantaneous reading service with the provision of scholarly articles or more popular write-ups ready to download either to be read or save for future reflection or study. The reader can have, for example, up to date articles on pedagogy, assessment, and leadership. One interesting example is that teachers can discover research on teaching approaches for specific cases, for example, people with dyslexia.

Furthermore, according to Jones (2013), followers can access the latest reports and data, for example, on OECD and the Programme for International Student Assessment (PISA) together with comments from experts in the field. Other examples of the use of Twitter include conference tweeting and tweet conferences, blogs/posts, planned discussions and spontaneous debate. In order to benefit from these advantages, Twitter and other media are part of a whole school PD strategy. It can be useful for quick and easy communication and sharing, and in creating community. For example, it can focus on PD of all trainee teachers in one school, or subject specialist groups in teacher trainee institutions. For example, in my case it could be among the HoDs of my school who are supposed to train the teachers in their department.

In the UK there are courses leading to a qualification or status (foundation degrees, MAs, National Vocational Qualifications (NVQs)); blended learning programmes that involve some external expertise and school-based activity (NCSL programmes such as NPQH, LftM); London Gifted and Talented networks; conferences; working with or seeking advice from consultants, local authorities, universities, government agencies or subject associations (Bubb and Earley, 2013). Teachers are rarely given guidance or support in their self-directed CPDL pursuits but instead rely on their own persistence and motivation to find resources, which accommodate their individual needs. Self-directed CPDL is more effective in further developing existing skills, rather than developing new skills (Gaible and Burns, 2005).

There are other sources in the UK which help teachers to develop professionally, for example TeachMeet which is a recent innovation that is proving popular and effective. Each TeachMeet session consists of a number of teachers who have agreed to meet up, usually face-to-face, after school hours and share best practice in short presentations (Jones, 2013).

CPDL can be site-based or multiple site-based. Site-based CPDL occurs locally and is focused more specifically on the school and teachers who work there. The option for multiple site-based CPDL sessions is conducive to ongoing learning opportunities and collaboration among teachers (Lee et al., 2013). Site-based CPDL has the option to be more flexible than standardized CPDL and can be adapted to meet the needs of the participants. However, the disadvantages of site-based CPDL are the time, commitment and the potential for too few skilled facilitators in the local area. Since the publication of the Strategy for Professional Development (2011) in England, there has been a shift of focus to school-based CPDL and an emphasis on 'learning together' and learning from 'what works'.

The fact that in Mauritius emphasis has been given to one-day workshops (on or off site), there is much that can be achieved from teachers learning from peers at the school level. For this reason, I am interested to learn from the literature about peer coaching and professional learning communities (PLCs) which are discussed below.

3.6 Peer coaching

I started the analysis on peer teaching and coaching after reading the seminal work of Joyce and Showers (1982). Peer coaching is very similar to mentoring but involves a more equal partnership between the teachers concerned. Coaching relationships have been defined as those that are an extension of in-service training in schools as teachers try to implement new knowledge, skills and strategies (Joyce and Showers, 1982). The experts, typically educators themselves, help to guide and facilitate teachers' learning in the context of their practice (for example choice of teaching strategies to use, support group discussion and collaborative analysis of student work).

Peer coaching can operate at a number of levels in schools: the department, group and one-to-one. The latter is the common structure for providing expert support in the context of a teacher's own classroom (Campbell and Malkus, 2011). Pre-observation and post-observation meetings can provide opportunities to discuss, analyse and reflect on practices. Coaches can provide both supportive and constructive feedback. On-site coaches can meet for half an hour to debrief the observation and provide oral and written feedback, including recommendations to improve practice. For remote coaching, educators can share video clips and coaches provide detailed written feedback, support by links to video exemplars (Powell et al., 2010).

Peer coaching provides opportunities for teachers to collaborate in schools. Teachers have the opportunity to investigate and explore alternatives, reflect on the effectiveness of their teaching, implement new strategies and reflect again. An appropriate model when thinking of this is experiential learning (Bubb and Earley, 2007). It stresses the importance of workplace learning and learning by doing, sharing, reviewing and applying as shown in the model of Dennison and Kirk (1990) which talked about a cycle of 'do, review, learn and apply' (see Figure 3.1).

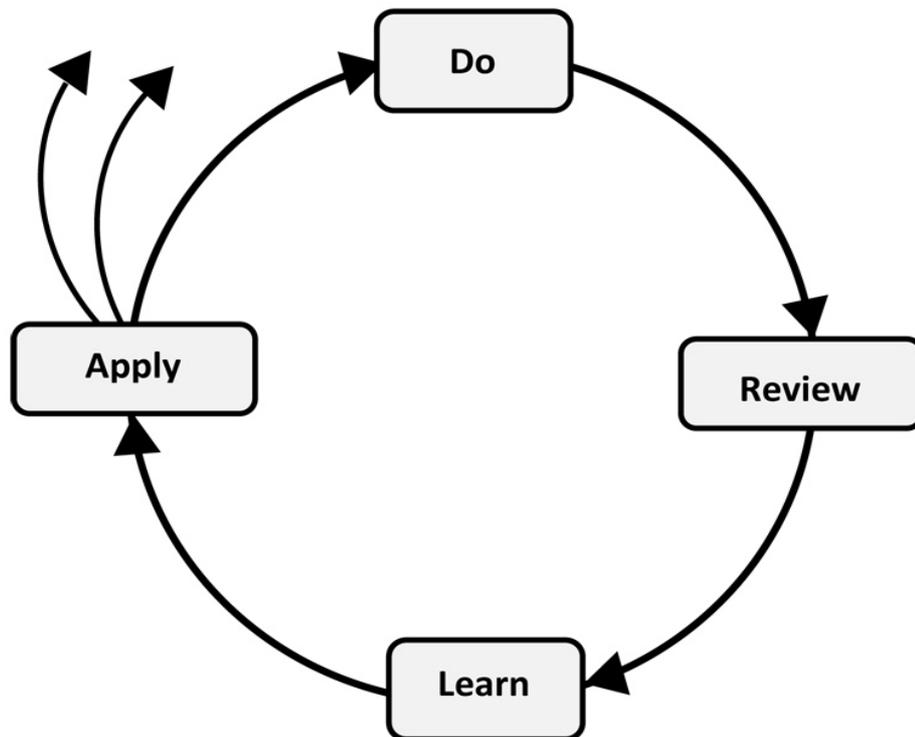


Figure 3.1: Model of Dennison and Kirk (1990)

In Figure 3.1 'Doing' is about having the opportunity to do something and have the experience. 'Review' is about an outsider providing observations on how the individual behaved during the experience. A discussion can be initiated at this stage to involve, for example, the teacher to discuss what has been experienced and offer insights about special features of the class. The aim is to allow the teacher to learn and then to be in a position to apply what has been learned. However, the process of learning and application is internal to the individual and well beyond the control of say the mentor. After a review every teacher will take 'individual, probably, idiosyncratic perceptions from these experiences. The several arrows emerging from the 'Apply' stage imply the numerous situations in which skills and knowledge learned could be utilised, as well as the link sought between one learning cycle and the next' (Dennison and Kirk, 1990, p. 4).

Earley and Porritt (2007) in looking at effective practices in CPD found that coaching was the more common activity among participants in their project. The focus was on developing coaching skills and putting newly found skills into practice; and development opportunities on classroom activities such as lesson observation. Coaching was found to be very effective as there was a significant change in the culture within some organizations as a result of the involvement in the project. Besides, there was an improvement in classroom practices and subject knowledge. There were also suggestions of significant improvement in honing existing and developing new skills, staff confidence and reflection.

The literature on peer coaching enabled me to understand and analyse with confidence what I collected as data. Now I move on to Professional Learning Communities (PLCs) which was an influence on my way of thinking after reading the work of Wenger. The literature enlightened me on what learning communities and PLCs are and how they can contribute to CPD of teachers.

3.7 Learning Communities

A model of CPDL is linked to learning communities and PLCs. The related term 'communities of practice' emerged from Lave and Wenger's (1991) study that investigated the apprenticeship model of learning, which showed that, rather than the one-on-one master/apprentice model, 'communities of practice' was a complex set of social relationships within the whole practicing community that supported learning and membership of the knowledge domain and practice field. A community of practice is seen as a unique combination of three fundamental elements: a 'domain' of activity or knowledge that creates a sense of common identity; the 'community' who are the members who care about the domain; and the shared 'practice' the community members develop to be effective in the domain (Wenger, 1998).

Learning communities require generous amounts of time for adult learning and collaboration during the school day. Some schools provide 90 minutes every day to teachers for planning, collaboration and study (Curtis, 2000). Many schools set aside time for team meeting but this time is often used for other purposes than professional learning and collaborative work.

There is evidence that PLCs can support improvements in practice when implemented with a high degree of quality and its success depends on how it is implemented. Well-implemented PLCs provide ongoing, job-embedded learning that is active, collaborative, and reflective (Darling- Hammond et al., 2017). They are an effective strategy for supporting ongoing teacher learning within and across schools. Some characteristics of PLCs according to Lomos, et al. (2011a) are explained below.

First, reflective dialogue which refers to the extent to which teachers engage in professional conversations and about specific educational issues. Based on these reflections teachers are inclined to further improve their teaching (Lomos, et al., 2011b). This requires a climate for open discussion and critical reflection of teachers' own behaviours, roles and practices as well as collective values and practices at school (Vieluf et al., 2012). There must be mutual trust among staff and a willingness to accept and share new knowledge and information among teachers.

Second, deprivatised practice which refers to teachers observing other classes, with the goal of providing feedback on their teaching (ibid). Third, collaboration and shared sense of purpose which represents the teachers' degree of agreement for the school's mission and its operational principles. Shared sense of purpose refers to common goals, and a common mindset to work towards them. In a review of studies on collaboration, Cordingley et al. (2015) found that collaboration exists in the forms of peer or co-coaching, shared planning, peer observation and collaborative action research. For Vieluf et al. (2012), through co-operative discussion, PLCs develop a shared view on fundamental issues as the core objectives to be achieved with students, effective roles and teaching strategies teachers should acquire, and determining whether goals set are actually achieved.

However, the value that PLCs will add depends on the type of the labour force. In systems with a highly qualified teacher force PLCs may have less added value. In that case teachers can learn from each other but when there are many less-competent teachers this can be a problem. Then it is up to the school leaders or providers of teacher training programmes to shape and sustain CPDL (OECD, 2016). In the Mauritian context as the teachers in the SSSs did not have foundational skills due to no ITT (personal correspondence), the implementation of PLC would contribute a lot.

The role of the principal is crucial in establishing PLCs in schools. They have to be in charge of the collective effort to build PLCs (Dufour and Dufour, 2012) and build a collective focus on student learning (Lomos, Hofman and Bosker, 2011b). The principal has also to facilitate the PLC at their school by creating conditions that lead to improved learning of the students and school staff (ibid). Principals can encourage teachers to develop PLCs by giving them autonomy (King, 2011). This quote from the work of Cordingley et al. (2015, p. 10) '...leading professional learning, that is, promoting a culture of learning ... continuous monitoring ... developing the leadership of others by encouraging teachers to lead a particular aspect of pedagogy' influenced me in realizing that my role as a principal is very challenging in my context for CPDL to exist.

3.8 It needs more than training

From the literature I have studied the vital elements for a CPDL model to be successful. Simply organising workshops would not guarantee improvement in the quality of teaching. As an experienced principal in secondary schools, I have not seen significant change in the way teachers teach after training. One reason might be the lack of coordination and rigour in what is being monitored and the lack of adequate training for all those involved in the teaching and learning process, unlike what is being done in Singapore as noted in Chapter 2. It is important to understand what works and why from the literature. Teachers need skills as learners in order to master new knowledge and skills. Joyce and Showers (1980) identified several practices, attitudes, and skills that appear to facilitate learning aptitude.

According to Joyce and Showers, using newly acquired skills demand certain qualities to be successful. First, persistence: when practising new skills, persistence seems to differentiate successful from unsuccessful learners. This requires teaching new behaviours to students. Very often students would like to revert back to ways they are comfortable with. Second, learning from peers like in other professions, for example, doctors work with colleagues and look for a second opinion. Educators must also appreciate the benefits of mutual study and problem solving in relation to professional competence. We must build collegial work and ensure that training and follow-up include collaborative opportunities. This will contribute to the individual competence of participating educators. Observing other professionals work is valuable learning experience in itself. Collaborative analysis of teaching and planning usually results in more practice.

Third, there is flexibility. We may have to reorient our traditional thinking about curriculum and instruction, for example, provide content through lectures and summaries of our own; provide students data for them to come up with their own conclusions and generalizations. Teachers have to rethink their roles as instructors in the classroom. Flexibility in the learning process can be summed up as a spirit of inquiry, a willingness to experiment with one's own behaviour, and openness to evidence that alternatives have something to offer. In order to respond to new demands a range of skills and qualities (for example, problem solving, stress management, interpersonal skills) is required. Effective CPD is about empowering teachers to be prepared for change (Bubb and Earley, 2007).

Furthermore, teachers have to support the increasingly complex skills students need to learn in preparation for further study and work and CPDL is one way to support that according to Darling-Hammond et al. (2017). In order to develop student competencies such as deep mastery of challenging content, critical thinking, complex problem-solving, effective communication and collaboration, and self-direction, sophisticated forms of teaching are needed as pointed out in their report.

After a CPDL programme, it is desirable that teachers translate new ideas into their own systems of practice. This is important because CPDL programmes typically meet with teachers outside of their classrooms to talk about teaching, yet they expect their words to alter teachers' behaviors inside the classroom. Kennedy (ibid) highlighted that there is the risk that teachers can learn and espouse one idea, yet continue enacting a different idea, out of habit, without even noticing the contradiction. She calls this the problem of enactment.

In order to facilitate enactment of the new ideas Kennedy (op cit) identified methods such as prescription, using strategies to achieve goals defined and fostering new insights by raising provocative questions that force teachers to re-examine familiar events and come to see them differently. Programmes using insights recognize the importance of teachers' in-the-moment decisions by changing ways teachers read classrooms situations in the moment and thus, how they respond to them. This approach encourages more professional judgement, helping teachers learn to see situations differently and to make their own decisions about how to respond (Kennedy, 2016).

3.9 Constraints at school and system levels

This part of the literature showed insights on the constraints to properly implement CPDL. Darling-Hammond et al. (2017) mentioned that conditions for teaching and learning both within schools and at the broader systems level can inhibit the effectiveness of CPDL. Even some well-designed CPDL does not improve student achievement (Hill et al., 2013) due to constraints at the school or system level.

Constraints can exist at the school level. Buczynski and Hansen (2010) discussed several barriers to the implementation of CPDL and they challenged the notion that CPDL was only as effective as a teacher's will to employ the knowledge and skills gained. They noted that teachers who were willing to implement new practices in the classroom often faced hurdles that are beyond their control (ibid, 2010). Barriers ranged from a lack of time allocated to teaching curriculum that used the newly acquired knowledge and skills; the need to teach mandated curriculum on a pacing guide, a lack of resources (such as curriculum materials, technology, or science equipment) and classroom management issues.

Of these barriers, Buczynski and Hansen, from a survey carried out in two urban districts in the United States, found that lack of resources was the largest barrier to CPDL implementation. They commented that teachers often have to pay for their own materials for their classrooms. Other resources such as technology are also limited (ibid, 2010). These barriers affect students and teachers in a wide range of contexts; they are of particular concern for schools located in poor regions where financial constraints are often acute.

Johnson and Fargo (2010) echoed these equity challenges, discussing the specific obstacles to applying the lessons of CPDL in urban schools. They noted that teachers in urban schools often get caught up in the many distractions occurring on a daily basis and struggle to engage learners who are often distracted by complicated lives outside of school. Hurdles faced by teachers in schools may actually be of broader indications of issues that stem from systemic problems. For example, in the case of limited funding, the learning experiences of teachers as well as students are influenced by broader policy about resource allocation (Darling-Hammond, 2017).

At the system level, as mentioned in Chapter 1, all the major decisions governing SSSs come from the top-very much a top down approach. In this context it is appropriate to review literature on CPDL where the whole system is applicable. Challenges to implement effective CPDL extend beyond the school and the classroom. Tooley and Connally (2016) identified obstacles at the level of the system to effective CPD and concluded that there are four overarching areas where improvement is needed to facilitate increased effectiveness of CPD and this seems most relevant to the Mauritian context.

First, identify CPD needs. CPD is often determined without understanding what teachers need. This shortfall is frequently aggravated by a lack of shared vision around what excellent teaching entails. Besides, preparation and training for principals and instructional leaders often fail to address how leaders can identify and organize needs-based CPDL. Without systems in place to ensure teachers' needs are being identified and met, CPDL will not be as effective as it should be.

Second, choosing approaches most likely to be effective. From the literature review there is strong consensus about the kind of professional learning opportunities likely to yield student achievement. Nevertheless, there is a great deal of CPD which does not meet these standards. 'One-off' workshops are easy to schedule and require less time and human capital to implement than evidence-based approaches.

Third, implementing approaches with quality and flexibility. Even when educators have knowledge of effective CPDL models, implementation presents its own barriers. For example, a school may create a programme that includes coaching for teachers. Nonetheless, it is not sufficient to simply designate coaches and have them available to teachers; many other variables affect coaches' effectiveness. Tooley and Connally (2016) found the coach's expertise in the teachers' grade span, subject, and/or school context; the depth of observation, feedback and suggestions for things to try differently; the authority of the coach to recommend next steps; time and accountability of teachers to follow through with recommended steps all have implications for the success of the programme. Other

implementation hurdles include the lack of an integrated and coherent approach to instruction.

Fourth, assessing CPD outcomes. Without a sense of what is working and why, it is hard to adopt and implement professional learning for teachers that is evidence based and designed to address potential obstacles (Tooley and Connally, 2016).

3.10 Policies to support professional learning

A growing body of research has found that high performing countries have in common a set of strategies for developing, supporting and sustaining the ongoing learning and development of their teachers and school leaders (Barber and Mourshed, 2007; Lee, et al., 2013). A study of four high-performing systems including Singapore by Jensen et al. (2016) identified a set of common policies that support professional learning in each system. These include policies for building time for collaboration, developing teacher leadership roles that organize and support professional learning, and using school-level and individual-level evaluation and accountability systems to support learning and collaboration. When well managed, these policies result in school improvement organized around effective professional learning.

CPDL should be integral to school policy. Giving teachers a new role, for example teacher-researcher can stimulate professional growth. Peer reviews can foster critical examination of practice, as peer coaching. Teacher-driven assessments of learning and teaching have been found to be effective in generating discussion about new practices. The authors believe that these systems of peer reflection, examining the effectiveness of teaching and student learning enable teachers to change their view of effective models of practice and create a process of transformational learning for them.

According to Cordingley et al. (2015) there must be critical engagement from teachers with content and CPDL providers must create room for professional discretion and repeated opportunities to encounter, understand, respond and reflect on new approaches and related practices. Studies carried out noted that explicit discussions about how to translate CPDL content to classroom took place following the initial input. Reviews of studies were consistent in noting that teachers in successful courses implemented what they had learnt by experimenting in the classroom. Teachers also engaged in analysis and reflection on underpinning rationale, evidence and assessment data, and this reflection and analysis was important to bring about and embed change in practice. This was done through discussion.

3.11 Successful CPDL

Reviewing the literature on elements necessary for effective CPDL helped me to understand how CPDL in SSSs can be improved to enable teachers to develop as effective practitioners.

Darling-Hammond (2017) found the following professional learning elements in professional development models: content focused; collaboration in job-embedded contexts; models and modelling of effective practice; coaching and expert support; opportunities for feedback and reflection and sustained duration. Successful CPDL models generally feature a number of these components simultaneously (ibid).

Content focus

Professional learning that has shown an impact on student achievement is focused on the content that teachers teach (Darling-Hammond et al., 2017). CPDL which focuses on content generally treats discipline-specific curricula such as science, mathematics or literacy. The CPDL is job embedded, that is, it is situated in the teachers' classrooms with their students unlike CPDL delivered externally or divorced from the teachers' school contexts. Thus teachers are given the opportunity to study their students' work (Doppelt et al., 2009), test out new curricula (Penuel et al., 2011), or study a particular element of pedagogy or student learning in the content area (Antonioni and Kyriakides, 2013). Thirty-one of the 35 studies reviewed by Darling-Hammond et al. (2017) featured a specific content focus as part of the CPDL model. Ideally, the CPDL is aligned with school and district priorities which provide coherence for teachers rather than competing with different schools or districts (Penuel et al., 2011).

Collaboration

In two reviews on collaboration conducted by Cordingley et al. (2005b) it was found that collaborative PD produced changes in teacher practice, attitudes, belief, and student achievement. Collaboration can span a host of configurations-from one-to-one or small-group interactions to school wide collaboration to exchanges with other professionals beyond the school.

Furthermore, collaborative CPDL leads to enhanced beliefs among teachers in their power to make a difference to their students' learning, principally to enhance expert knowledge (Cordingley et al., 2003). When teachers have access to some form of collegial support they can solve important problems very often with the input of an expert leader. They can look for new approaches and collaboratively focus on the learning of pupils with similar needs (Cordingley, 2015).

High-performing schools organize people to take advantage of each other's knowledge and skills and create a set of common and coherent practices so that the whole is far greater than the sum of the parts (Darling-Hammond et al., 2017). Teachers become more effective over time when they work in collegial environments (Kraft and Papay, 2014). Similarly, teachers in

many countries report that their colleagues contribute to their teaching effectiveness (OECD, 2014d).

One example of CPDL is to organise support staff meetings where there is a clearer understanding of strategies that can be used and the influence support staff have in improving classroom practices. Sessions can be organised to tackle that problem, as there is a shared understanding and vocabulary around good lessons and teaching now. Sharing of key perceptions about good lessons with the whole staff group helps to raise the status of support staff and highlights their potential to make a positive difference in the classroom (Earley and Porritt, 2007).

Time is allocated for collaboration. In many countries the teaching time of teachers differ, for example, in the US and the UK it is 27 hours whereas in Singapore it is 17 hours per week (OECD, 2014d). In the time Singaporean teachers are not directly engaged with students they are frequently working with each other to plan lessons collaboratively or to conduct action research and analyze their practice and its outcomes. In Mauritius teachers work for roughly 20 hours per week -1190 minutes (PRB, 2016)

Use of models and modelling

CPDL that utilizes certain models of practice has proven successful at promoting teacher learning and supporting student achievement. According to Darling-Hammond (2017) curricular and instructional models and modelling of instruction help teachers to have a vision on which to anchor their own learning and growth. There are different kinds of modelling such as video or written cases of teaching; demonstration lessons; unit or lesson plans, observations of peers, and curriculum materials including sample assessments and student work samples. The studies reviewed included curricular models and/or modelling of effective instruction in the delivery of content and pedagogical learning for teachers. For example, Heller et al. (2012) conducted a randomized experimental design of three intervention groups and one control group to study the effects of CPDL on elementary students' learning in science and the findings showed that teachers who participated in any of the CPDL opportunities had significantly greater learning gains on science tests than students whose teachers did not participate. These effects were maintained a year later.

It was also found that CPDL focused on models of effective practice and classroom pedagogical practice. The teachers analysed their own students' work after teaching a unit. They analysed student work samples and formative assessment tasks collaboratively. Teachers also had access to a 'task bank' of formative assessment model items they could use with their students.

External input

A study of reviews on CPDL since 2000 by Cordingley et al. (2015), found that external input is a common factor in successful programmes, sometimes in tandem with internal specialists. Very often when teachers seek out PD on their own and attempt to implement them without the support of other teachers their strategies are not successful. They also found that providers and facilitators of effective CPDL have a significant impact on the outcomes of their own course content. It was observed in the most successful CPDL, external input includes providing multiple and diverse perspectives, and challenging orthodoxies. All reviews found that successful external facilitators acted as coaches and/or mentors. External input, for example, specialists, as mentioned by Cordingley et al. (2015) supported teachers by modelling, providing observation and feedback, and coaching during CPDL. Some reviews found that successful facilitators encouraged and/or helped teachers take on a degree of leadership of CPDL and some showed that they were treated as peers or co-learners.

When coaches are solicited they differ in the value that they can bring in the CPDL programme design (Kennedy, 2016). The value of coaches seems to depend on how they try to facilitate enactment. In a review on the CPDL programmes on coaching, Kennedy found that coaches in more effective programmes collaborated with teachers on lesson planning and providing a model of strategic planning. However, attention must be paid to the people who provide CPDL according to the review. Where individuals or groups who had long histories of working with teachers, were very familiar with teachers and with the problems they face, and based their programmes on their own personal experience and expertise, the CPDL programmes were effective. Programmes that were carried out on a large-scale relying on intermediaries—coaches or small group facilitators who were hired specifically for the study, and whose familiarity with teaching, or more importantly, with teacher learning, may have been limited were less effective.

Gallagher et al. (2017) suggest that coaching and other expert scaffolding can support the effective implementation of new curricula, tools, and approaches by educators. This is consistent with earlier research evidence that teachers who receive coaching are more likely to enact desired teaching practices and apply them more appropriately than those receiving more traditional professional development (Showers and Joyce, 1996).

Feedback and reflection

Feedback and reflection are two powerful tools found in effective CPDL. CPDL models provide built-in time for teachers to think about, receive input on, and make changes to their practice by providing intentional time for feedback and /or reflection. This was found in almost all the studies reviewed by Darling-Hammond (2017). For example, teachers can participate in literacy activities as learners and participate in a debriefing session, describing the

elements of the activity that extended their literacy learning and considering implications and adaptations of the pedagogy for their classrooms. The reflection process can help to bolster teachers' own learning and to support their teaching (Greenleaf et al., 2011).

In effective CPDL programmes, the practices of generating feedback and supporting reflection often include opportunities to share both positive and constructive reactions to authentic instances of teacher practice, such as lesson plans, demonstration lessons, or videos of instruction (Gallagher et al., 2017). These activities are frequently undertaken in the context of a coaching session (Allen et al., 2015) or a group workshop facilitated by an expert (Johnson and Fargo, 2010).

Sustained duration

Meaningful CPDL requires time and quality implementation though research has not yet identified a clear threshold for the duration of effective models. But it does indicate that professional learning that translates to changes in practice cannot be accomplished in short, one-off workshops. Programmes are spanned over weeks, months, or even academic years (Darling-Hammond et al., 2009; Darling-Hammond et al., 2017).

According to Knapp (2003), the traditional episodic and fragmented approach to CPDL does not afford time necessary for learning that is rigorous and cumulative. CPDL that is sustained, offering multiple opportunities for teachers to engage in learning around a single set of concepts or practices, has a greater chance of transforming teaching practices and student learning. These findings concurred with previous literature on the duration of effective CPD, which suggests that professional learning must be sustained to have an impact (Cohen and Hill, 2001). The most common model for effective CPD among studies carried out by Cohen and Hill (2001) was participation in an initial, intensive workshop, followed by applications in classroom and additional development days or coaching sessions to extend and reinforce educator learning (Allen et al., 2015). The CPDL review of Cordingley et al. (2015) also found that the duration of the programme was important.

A didactic model in which facilitators simply tell teachers what to do, or give to them materials without giving them opportunities to develop skills and inquire into their impact on pupil learning is not effective (Cordingley et al., 2015). Kennedy (2016) notes that hard questions have to be asked about programmes that have negative effects on teachers. It is certainly possible for a programme to fail, but failure should yield a null effect, not a negative effect. After looking closely at the programmes she reviewed in her study, Kennedy suspects that negative effects arise from negative emotional responses- perhaps resistance or resentment toward the programme's demands. She further argued that mandated CPDL creates a problem for developers, which is analogous to the problem teachers face with students when

'attendance is mandatory but learning is not'. Among the entire array of studies reviewed by Kennedy (ibid), the average effect from studies that assigned volunteers was stronger than the average effect among studies using mandated assignments.

Schools have to be creative in finding time for staff development (Darling-Hammond, 2005). Time can be saved on meetings for administrative purposes. For example, cutting meetings to a minimum by making more use of the online diary, which all staff can have access to which was on the staffroom's large plasma screen. Schools can also run staff development sessions for a determined time, say 45 minutes on a specific day. The training has to be mandatory for the staff and it could include outside presenters. It has its advantages and disadvantages; time could have been used for teaching, the topic may not be relevant to all teachers in one-size-fits-all type.

In a nutshell, as it has been pointed out in the Foreward of the book 'Empowered Educators' (Darling- Hammond et al., 2017, p. ix): the training must lead to '...teachers must have a deep, conceptually based understanding of the subjects they will teach and really mastered the craft of teaching'. This quote led me to understand that ultimately the teachers must be able to acquire the skills of teaching together with good knowledge of the subject.

Figure 3.2 shows the various components of CPDL derived from the literature review which informed my thinking about the research questions set. I thought it essential to identify the needs of the teachers in the SSSs by analysing what problems they faced while teaching. Then the different models of CPDL helped to inform which models could be appropriate to assist the teachers in becoming better teachers. Studying the different types of CPDL which have worked elsewhere, taking into consideration what elements made the models of CPDL successful, would similarly help. However, any model must be adapted to the local context to be successful.

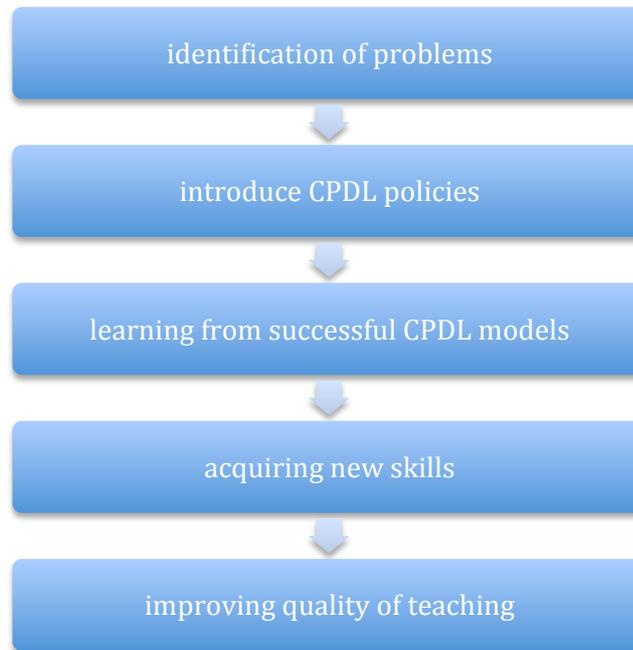


Figure 3.2: Different components of CPDL

3.12 Conclusion

From the critical review of the literature, it could be found that opportunities are needed for teachers to learn and refine the pedagogies required to teach new skills as needed. We have seen this from the reports and the research carried out by Darling-Hammond in 2017. However, major questions remain about how teachers can learn these skills and how CPDL can play a role in improving practice. Recent research on CPD has underscored the importance of these questions, given the mixed findings often generated (Hill et al., 2013). In spite of their findings, the authors recommend to redefine what it means to help teachers improve, reevaluate current professional learning and support programs, and reinvent how we support effective teaching at scale (TNTP, 2015).

CPDL does not always lead to professional learning despite its intent (Easton, 2008). According to Fullan (2007) external approaches to instructional improvement are rarely powerful enough, specific enough, or sustained enough to alter the culture of the classroom and the school. Furthermore, some school contexts pose equity challenges related to the potential impact of CPDL on student learning (e.g., poor leadership and inadequate resources) (Buczynski and Hansen, 2010). Concurrently, an increasing number of studies have shown that well-designed CPDL can, when effectively implemented, lead to desirable changes in teacher practice (Darling-Hammond et al., 2009).

Chapter 4 Research design and methodology

4.1 Introduction

The aim of this research was to find out what kinds of CPDL could help individuals become better teachers by acquiring new skills and improving their competencies. Also the purpose was to know to what extent the present system of CPDL was able to fulfill that important role of providing CPDL and improving the quality of teaching. This chapter explains the theoretical and methodological framework that I have used. A mixed methods approach was seen as the most suitable to address the research questions and I explain the rationale behind that choice of research design. I used the literature to discuss why I carried out a survey and conducted semi-structured interviews to collect the data and also explain how the data were analysed. The ethical issues involved in this research are also discussed.

For the purpose of this study I had one main research question (RQ 1) and four subsidiary questions (RQs 2, 3, 4 and 5) which were:

RQ 1: What kinds of CPDL can make individuals better teachers?

RQ 2: In the view of teachers and principals what competencies and skills need to be acquired or further developed to improve the quality of teaching?

RQ 3: What role, if any, does CPDL have in meeting these needs?

RQ 4: To what extent is the CPDL currently provided helping teachers to meet the identified needs?

RQ 5: How can the present system of CPDL be revised to ensure teachers' needs are met and they are able to develop as effective practitioners?

RQ 1 is the main overarching question aiming at understanding how teachers could improve their practice. I wanted to gather the views of all the participants involved in the research. In order to know what principals think of CPDL, a survey was carried out which helped to select the three schools for further study. The four sub questions were meant to provide the necessary data to shed further light on the main research question.

RQ 2 was asked with the intention of finding out what were those skills and competencies teachers thought they needed to improve the quality of their teaching. RQ 3 explored the role of CPDL in helping teachers to acquire or further develop their skills, whilst RQ 4 was asked to find out to what extent CPDL currently offered could help teachers in becoming better teachers. RQ 5 was an attempt to gather information on the extent to which the present system of CPDL was helping teachers and what were its strengths and weaknesses. It also aimed at finding out how, in the view of participants, the present system could be improved.

These were the key research questions. The interview questions to obtain answers for these key questions are shown in Appendix 4.

4.2 My role as a researcher

Researchers choose their research paradigm and position according to their philosophical assumptions (Creswell, 2003). These are based on the individual's belief about the nature of reality, the position of the researcher and those being researched, the role of values in research and the process of research. Consequently, it is important to have background information on the researcher in order to understand how the process is interpreted, the relationships with participants are shaped and data analysed.

I am a Mauritian male researcher who has worked as a teacher for a decade in a private secondary school before joining the Ministry of Education (MOE) and worked for 17 years in four SSSs, both boys and girls schools before becoming an assistant principal and later a principal. Since 2006 I have already worked in five SSSs, boys and girls schools, in urban and rural areas throughout the island as a principal.

I have worked as a teacher in secondary education for over 40 years in schools considered both good or bad. As a principal I have worked in schools where academic performance at School Certificate and Higher School Certificate has been close or below national pass rate average. Actually my school forms part of a group under a 'school transformation project of the MOE' because of its poor performance at School Certificate examinations. In fact most of the SSSs in Mauritius are included in that project where school leaders have to devise strategies to raise their school's performance. I consider it a privilege to write this thesis as it helps me to contribute in my personal capacity to professional knowledge. I want to play a part in CPDL as teachers face many challenges and in my view the education system is not doing justice to the students.

My knowledge of the Mauritian secondary education system, teachers and CPDL in SSSs as well as my experience as a principal provide me with an appropriate background to research the provision of CPDL and to submit some recommendations. Moreover, I form part of those in the profession who are 'learners'. I am in a privileged position and have carried out the research in a quest to improve the quality of teaching in SSSs and my own professional practice. My educational background and work culture could be seen to affect the research process. For example my understanding of 'quality' in teaching may be different from that of the researched. There is no issue of insider researcher involved as the research has been carried out in other schools and not my own.

I have not been sponsored to do the research (I financed my own studies) and it is my willingness to contribute to the literature and inform the policy makers about CPDL and its impact on quality teaching that has guided me in this endeavour. The research is not about improving my qualifications for promotional purposes but a genuine professional duty to improve the quality of teaching, to help teachers do what they are doing better and above all to help students who cannot afford to pay for a better education outside of the state school system. I am not serving any particular interest in doing the research.

One might argue that my respondents and participants in the research would say things that would please me as a principal. But in most cases teachers and HoDs spoke about what they wanted to say, as they knew that I was a government employee as them. However I have to admit that those who are closer to the senior chief executive, for example directors and inspectors of the QAID were very cautious to voice their opinion. For some interviews were a platform, for example, for teachers and HoDs who were frustrated with the system and CPDL in particular.

4.3 Theoretical and methodological framework

This section deals with the theoretical and methodological approach taken in the study. The research philosophy underpinning my research is that of social constructionism which is a term applied to theories that emphasise the socially created nature of life. Within research philosophy the important concepts to consider are ontology, epistemology and paradigm (Denscombe, 2009). Ontology is concerned with the nature of reality, whereas epistemology is the nature of knowledge or what it means to know. Constructionism comprises a relativist (socially negotiated) ontology and a subjectivist (knowledge creation) epistemology. The way that I, the researcher, construct knowledge is necessarily conditioned by my own socio-historic context.

Social constructionists view knowledge and truth as created, not discovered by the mind (Schwandt, 2003). In this view the social world is a reality constructed through people's perceptions and interactions with others (Denscombe, 2009). The activities involved in constructing knowledge occur against the background of shared interpretations, practices and language (Blaikie, 2007). Therefore great emphasis is placed on everyday interactions between people and how they use language to construct their reality (Andrews, 2012). This study is concerned with the PD of teachers and its importance in improving the quality of teaching in SSSs in Mauritius. Data gathered were derived from the perspectives of people at the heart of CPDL.

I consider this 'collective construction' to be a social process which involves the actions and interactions that take place between people, which aligns with the social constructionist view.

Social constructionism and interpretivism both emphasise the ability of the individual to construct meaning. Therefore the research is located in the interpretive paradigm as I wanted to understand the ways in which individuals interpret the world in which they find themselves (Cohen, Manion and Morrison, 2013). The interpretivist model centres on the way humans make sense of their subjective reality and attach meaning to it and they look for meanings and motives behind people's actions (Chowdhury, 2014) to enable them to understand the socially constructed nature of the world.

In this model the researcher is part of the world they want to investigate and this means that their observations can be influenced by the expectations and predispositions they bring to the research (Denscombe, 2009). I have interviewed my colleagues in other schools as well as a small group of teachers. This enabled me to gain a wider perspective and a range of views from persons in similar contexts.

I used an inductive (qualitative) approach which involves collecting evidence first and building knowledge from this (Ritchie et al., 2013). Hypotheses are commonly generated from the analysis of the data rather than stated at the outset (Silverman, 2006). Thanh and Thanh (2015, p. 26) describe the 'tight connection' between the interpretive paradigm and qualitative methodology, as qualitative methods are best suited to gaining insight and in-depth information. This is because qualitative research is a situated activity that locates the observer in the world and involves an interpretive, naturalistic approach to that world (Denzin and Lincoln, 2011). It is primarily concerned with the way human activity creates meaning and generates social order (Denscombe, 2009). Qualitative researchers study things in their natural settings and attempt to make sense of them so context is key.

However, there is no such thing as a pure inductive approach as all stages of the research process will have been influenced by the knowledge and experiences of the researcher (Blaikie, 2007). Nonetheless for Cousin (2005) subjectivity can be reduced. The researcher should be aware of, reflecting on and critically analysing their own views and how they might impact on the research. Moreover, it is possible to take an objective standpoint when analysing the data. This thorough analysis informs the researcher about what is going on rather than their own preconceptions (Mack, 2010). Hence, this research is within an interpretivist perspective, using a mixed methods design, to address the RQs, focusing on an in-depth inquiry of what teachers, principals, HoDs, inspectors and directors said on CPDL in SSSs and its importance on the quality of teaching.

My research design is mixed methods, also called a mix design, as I did a survey and three case studies to collect data with the main objective of answering my RQs (Cohen et al., 2007; Tashakkori and Teddlie, 1998). It is called a mixed method approach because it requires the collection of both quantitative and qualitative data (Tashakkori and Teddlie, 1998). According

to Gorard (2004) the supposed distinction between qualitative and quantitative evidence refer to distinct methods of analysis rather than distinct paradigms. Therefore to answer the RQs I used both quantitative and qualitative methods. My intention was to make use of different forms of data and put them together in order to present a coherent, rational and rigorous piece of work (Gorard, 2004).

Another reason why I chose a mixed method was that the objective of the survey study was to seek large-scale and unbiased data capable of generalising findings supported by large data banks and degrees of confidence (Cohen et al., 2007). Accordingly I invited all the principals to participate in the study and I sent all of them questionnaires out of which I got a participation rate close to 80 percent. The survey aimed at 'the collection of data on a number of units and usually at a single time juncture, with a view of collecting systematically a body of quantifiable data in respect of a number of variables which are then examined to discern patterns of association' (Bryman, 1989, p. 104). In order to have a clear idea about the importance of CPDL and how it could be effectively provided to have a positive effect on the quality of teaching in SSSs, I had different sections in the survey questionnaire (Appendix 2).

In addition to the survey I conducted eight semi-structured interviews which I described in details below. The purposes of these interviews were to obtain relevant ideas on what skills and competencies teachers needed to improve the quality of teaching; what forms of CPDL were appropriate to provide these skills; how the present system of CPDL was beneficial and finally how could the present system be improved.

As I was interested to know what teachers think, I had to interview them to know. I also had to talk with principals as they were better placed to know the strengths and weaknesses of teachers as they undertake regular classroom observations. They were expected to have strong views about the areas in which teachers needed training. They also have an important part to play in that. I involved directors in the research because they are closely connected to policy making. I invited the QAID officers to participate in the research as they undertake class visits and advise teachers on teaching strategies, remedial work and students' performance as well as provide CPDL programmes. However, they did not reply to me though at first they showed interest in what I was doing. Three inspectors returned the interview guides which I sent to them with some comments on the questions which were quite useful to me as I show in Chapters 6 and 7.

I could have carried a survey on CPDL among teachers using a sample of SSSs but I preferred to visit the schools, meet the principals and teachers to discuss and look for their experiences on the topic researched. Overall the interviews helped me to have views on CPDL from different sources with individual experiences that enabled me to capture what was

happening in SSSs as far as CPDL was concerned. Following the views of Thomas (2013) that there is nothing wrong in using a survey and a case study, I felt that I was doing the right thing. On the contrary, in his view, it should be applauded.

Using more than one method can have many advantages, even though it adds to the time investment required (e.g. it took me three months to prepare, send and collect and analyse the data). The questionnaire survey of principals helped to find out which schools were to be studied in depth. I chose schools where principals were encouraging CPDL in whatever ways. However, not many were doing CPDL in the way I was expecting. As I had to be flexible because I did not have much time with school holidays looming, I chose schools which were quite close to me, that is within half an hour's drive as I had to leave school quite often to reach there. As noted earlier, within each school I conducted one interview with the principal, one with the HoDs and one group interview or focus group with teachers. I had to go to the schools I was studying on three occasions.

The objects of my case studies were to collect both qualitative and quantitative data (Gerring, 2006; Yin, 2009) though case studies are a well-established research design (Hamel, 1993) and are seen essentially as qualitative (Stake, 1995, 2005). It was more about investigating what was done in terms of CPDL and how the teachers, principals, HoDs and inspectors viewed the present system in these schools studied. The case studies also could shed more light on how these schools were involved in some forms of CPDL which had its importance in improving the quality of teaching and developing the HoDs and teachers as well as the principals professionally. Basically the objective was to conduct in-depth research into these three cases (Merriam, 1998). The research was conducted with a trade-off in mind (Hammersley, 1992) that is, choosing a restricted sample which allowed me to gain deeper knowledge.

In a nutshell, I did an empirical inquiry on CPDL in the schools studied (Yin, 2009) from the perspective of the participants involved (Gall, Borg and Gall, 1996). The use of case studies for the study has advantages. According to Alderman et al. (1980) case study data are strong in reality; case studies allow generalisations either about an instance or from an instance to a class. Their peculiar strength lies in their attention to the subtlety and complexity of the case in its own right; case studies are a step to action. They begin in a world of action and contribute to it. Their insights may be directly interpreted and put to use. Cohen and Manion (1989) also pointed out that generalization is possible when using case studies. I feel that my case studies were revealing similar views on certain aspects and there was no need to have more case studies, as they would probably have revealed more or less the same thing. I got the same responses in the different schools.

With case studies 'problems can be examined to bring about understanding that in turn can affect and perhaps even improve practice' (Merriam, 1998, p. 41). Bassey (1999) demonstrated how case studies could contribute to theoretical frameworks which underpin both educational practice and policy. Case studies can also easily serve as a source for insights (Berg, 2004). My case studies were aimed at fulfilling this purpose.

4.4 Ethical issues

In conducting research it is essential to consider ethical issues (Denzin and Lincoln, 1988), which include clarity about purposes and activities during research, participants' informed consent, confidentiality and anonymity, and consideration of the consequences for participants from findings being publicly available (Punch, 1994). When planning my research I was fully aware that I should consider the ethical issues. I started by writing letters addressed to directors, inspectors, principals (Appendix 3), HoDs and teachers (Appendix 8). I sent invitation letters to all participants I thought could contribute to my research. I also talked to some principals and teachers I knew about my research and invited them personally to participate and I had a positive response from them. I also phoned some principals and teachers to remind them of their participation in the research.

In the same letter, I considered other ethical issues and informed the persons to whom I sent letters that participation in the study was voluntary based on informed consent and a willingness to collaborate in the research. The participants were also informed that they could opt in and opt out at any time during the interview. I waited for the consent of those to whom I sent letters to proceed further. Then I planned the interviews.

The next step was to ensure anonymity and for that reason the participants have been given pseudonyms (Appendix 5). This was meant also to guarantee confidentiality. Anonymity can protect the participants but it can also deny them 'the very voice in the research that might originally have been claimed as its aim' (Parker, 2005, p. 17). When I talked to some participants, mainly the directors and inspectors about participating in the research, I observed that they were not very willing to speak freely on some issues. But I managed to gain the participation of two directors. However, though knowing that it would be confidential and anonymous only two of the three principals interviewed were willing to express themselves freely. With teachers, there were no problems and they voiced their opinions overtly. The inspectors did not show any interest at all to participate in interviews. After trying a few more times, I did not approach them.

I made it clear to all the participants that the outcomes of the research would, hopefully, help improve current CPDL provision and I made sure that they recognized the potential of the findings. I talked to principals during meetings either at the national or zone level and

discussed my research and its significance. I told them about the importance of CPDL and how the performance of students in SSSs was declining and the QAID was finding it difficult to improve the quality of teaching. I discussed that with teachers when I met them. I also went to see some teachers and principals in their schools to encourage them to participate in the research. In fact I had to canvass many of the participants, as they were not used to research. As for the survey questionnaires I had to email several reminders. Finally the principals responded. I went to schools and collected the remaining questionnaires.

Although not strictly an ethical issue, I have to say that it was not an issue for me as a senior seasoned principal, who could be perceived as high in the hierarchy, to interview people of a lower standing. The teachers interviewed were not from my school and as such I was not an insider researcher. I did not have power over them in any way. In the past some teachers had been working with me and when I explained the importance of my research to them, they volunteered to participate. From my point of view they wanted to voice their opinions on a very critical issue which is CPDL dispensed by the MOE and the QAID. I feel my own position as a principal was not a factor affecting their responses. However, I have to acknowledge that certain gender, power or status elements might possibly have come negatively into play in my interactions with female research participants had I not offered them certain reassurances.

The power imbalance between me as principal and the teachers as participants might also be interpreted as an ethical matter. Some of the teachers or HoDs were my colleagues when I was a teacher. The fact that they knew me helped us to communicate easily. I would phone them and plan for the interviews. I went to their school. For those whom I did not know I contacted people in that school whom I knew and asked them to introduce me to the participants. It was quite easy for me as I had good relationship with my colleagues, teachers and others as a person. So when I went to their school I felt that I was welcomed. I made it clear that I came as a researcher and not a principal and I wanted their views as honestly as possible so that we can propose something interesting out of the research to the MOE. I interviewed them in a space decided by them or the principal of their school. In one school we were in the library, in another we were in the deputy rector's office. I deliberately made them feel at ease so that they were relaxed and could talk easily. For example, I helped them by using prompts and probes. I ensured that everybody got the chance to talk. Also I reminded them they could withdraw at any stage.

All the personal data were stored and processed in compliance with the Data Protection Act 1988 which I confirmed when I signed the Ethics Form with the IOE UCL. I was the only person, other than my supervisor, who would have access to the data and personal information. During the process of the research all the survey questionnaires were kept in a locked cupboard to which only I had a key and all the interviews and transcriptions were stored safely using a password for documents saved on my laptop and iPhone. After the

research, the data were kept in a locked cupboard for some months, until completion of the thesis. All the data will be destroyed at the completion of the doctorate.

4.5 Methods of data collection

As noted earlier, in order to answer my research questions, I chose a mixed method approach that collected data from questionnaires and semi-structured interviews. I explain below how I decided on the sample and the procedures I followed to gain the consent of the participants.

I carried out a survey among all the 62 principals in the SSSs. This was the entire cohort of principals. Different steps were followed to carry out the survey. First, I did a self-completion questionnaire with both closed and opened-ended questions which was kept as simple as possible (Appendix 2). I piloted and revised the draft questionnaire after my critical friend who is also a principal filled in the questionnaire. She advised that more space be provided for the open-ended questions. I removed one question - on the sex/gender of the participant - as I was not going to use that information.

The survey questions were designed to help in answering the RQs. The questionnaires had four sections: teaching skills, professional development, improving professional development and good practices. The Likert rating scales were used in most of the questions. It was done in such a way that respondents could answer the questions in any order. I emailed the survey questionnaire to the principals in Spring 2017 together with an invitation letter (see Appendix 3). After sending the questionnaires, I expected, perhaps naively, for the responses from my colleagues to be quite rapid but that was not the case. In the first week only seven replied - four by mail and three by post. I decided to change my strategies and thought that I needed to talk to the principals personally. During a meeting held for principals in my zone I seized the opportunity to talk to some and handed over hard copies of the questionnaires to them. Trying to find out the reasons for the delay in the reply, some principals told me that they could not fill in the questionnaire on line because they were having difficulties. Only some of them were able to do it on line.

During a meeting of all the principals a couple of weeks later, I seized the opportunity to hand over the survey questionnaires to those who could not fill it on line and those who did not receive my initial email. Fortunately they responded and I received many more completed questionnaires in the coming days. I decided to talk to some whom I had never met before. I was able to reach nearly three-quarters (72%) of the cohort of principals by mid-June. Then, I sent a reminder to the remaining 17 schools and by the end of June I had 49 respondents which represented around 80 per cent of participants. This was possible largely through the personal contacts I had made.

Following the survey replies, I found that 13 schools were engaged in several activities to support CPDL. I chose three schools from these on the following criteria: they were involved in some forms of CPDL; they were interested in the study unlike those who were interested but not having any CPDL; the travelling distance to these schools; and knowing that these principals would collaborate and be flexible. These schools offered me the opportunity to focus on the 'unique' (Berliner, 2001). The three schools I chose were, according to the survey responses, doing more and better than the average school was doing in terms of CPDL. One aim of the case study was to learn from these schools what were the good practices existing in these schools from the perspectives of teachers and principals.

As I was granted permission by my director to leave my school and conduct interviews, I could drive for about 30 minutes to reach these schools. The time of the fieldwork happened to be the third term at school, a period that is quite hectic with most teachers' time taken up by the final examinations. So I did not have too much time to choose participants and wait for them to be free for interviews. Fortunately the three principals were very helpful and organized the interviews with their HoDs and teachers for me.

4.6 Interviews

Interviews are a legitimate method of collecting data (Silverman, 2000) because they provide access to participants' perspectives (Denzin and Lincoln, 1989). An interview is a directed conversation (Lofland and Lofland, 1984, 1985) and intensive interviewing permits an in-depth exploration of a particular topic. The in-depth nature of an intensive interview fosters eliciting each participant's interpretation of his or her experience. I sought to understand the topic and the interview participants had relevant experience to shed light on it (Fontana and Frey, 1994; Seidman, 1997).

The interviews were 'the main road to multiple realities' (Stake, 1995, p. 64) and allowed me to obtain descriptions and interpretations of others, which are central elements in case study research. Each interview was meant to establish a dialogue with my participants. Interviews in 'qualitative' research have traditionally been unstructured (Scott and Usher, 1996), allowing the interviewees space to develop their account of their perspectives (Marshall and Rossman, 1989). But I used semi-structured interviews as my main research tool in order to 'listen, ask, record and examine' (Schwandt, 2000, p. 119) what the participants thought about CPDL. The questions were predetermined and generated precious data (Fontana and Frey, 1994). Semi-structured interviews are acknowledged as 'high-preparation, high risk, high-gain and high-analysis operations' (Wengraf, 2004, p. 5).

Interview schedules

Mason (2002), Denscombe (2003) and Bryman (2004) note the importance of preparing for

an interview in terms of the range and style of interview questions to help answer the RQs ensuring that there is a logical order to the questions. The questions (Appendix 4) were prepared in order to find answers for my RQs. Some questions were deliberately open so that participants could express their views. The questions varied because of issues which emerged from the interviews with teachers. Further questions were individualized to the responses given (Mason, 1996).

I asked teachers and HoDs such questions as: what skills do you think teachers need in order to improve the quality of teaching? Give me your views on the one-off workshops organised by the MOE or the QAID. Explain to me how you collaborate in your department and what benefits that brings to you as a teacher. How do you learn from your peers? How do you do peer coaching? What are its strengths and weaknesses? What do you suggest can improve the models of CPDL at the level of the MOE or QAID? How does your HoD help you to develop professionally? In boys schools I asked teachers about class management.

In SSS 3 I asked one HoD, 'would you carry on with what you were doing in this school if ever you were transferred to another school where the intake of students was of a lower quality?' When one teacher told me that she was having self-directed CPDL, I asked her how she was doing, in what field and how did the PD help her. In fact I learned a lot from the experiences of the teachers. When one teacher told me that he was downloading videos and using them to teach in class, I asked the teacher to clarify that by giving me examples on what he was teaching and what was the response of the students. Similarly, I asked one teacher how she was using her mobile phone to teach.

Piloting interviews

I piloted the interview following the advice of Merriam (1998) that pilot interviews are crucial for trying out my questions, getting some practice, learning which questions were confusing and needed rewording as well as which questions yielded useful data. I had the opportunity to pilot the questions with four teachers and one HoD at my school and I also sought the help of one principal. I invited the teachers to help in the pilot interview which they accepted verbally. Interviewing teachers in my school and the other interviews I conducted in other schools were almost similar, except that after one or two interviews I was more familiar with the questions and more confident of gathering relevant data. At my school I was more at ease and had more time, whereas in other schools I had a maximum of one hour to complete the interviews and I respected the allocated time.

The pilot interviews helped mostly to improve my listening and communicating skills. I was very much aware where to use probes and prompts. I was also able to rephrase some questions and make them clearer so that I could capture the views of the stakeholders in a

given context (Oppenheim, 1996). I was also able to make sure that my questions fulfilled the aims of my study. The answers from the participants helped me to know how they were interpreting my questions (Drever, 1995). I used the interview schedule that proved extremely important for me to keep the interviewees on track. I had to learn to stop them with a lot of tact and over time the interviews became easier and easier and gave me more confidence.

Participants for interviews

As discussed above, I chose three schools. These schools were doing various forms of CPDL which I found interesting. In SSSs 1 and 3, the principals told me that there was collaboration among the teachers in a few departments. The principal in SSS 2 told me that the chemistry and English Language departments were doing peer coaching. So I was interested to explore what they were doing and how they were doing it with the help of HoDs and teachers in those departments. I phoned the principals to find out if they would agree if I selected their schools as case studies which they accepted. I asked permission to record the interviews from the participants and they agreed. The date and the time of the interviews were decided. First, I interviewed the principals who recommended to me the HoDs I could interview; and lastly on the recommendation of the HoDs, I interviewed the teachers. Once I completed the interviews with the schools, I looked for directors and QAID inspectors. The participants' profiles can be found in Appendix 5.

During a workshop organised by the MOE, I met a World Bank consultant who talked to principals in connection with the Nine Year Schooling policy on 'Good governance and accountability'. Since I had read many of his articles on school improvement in Singapore, I asked him if I could meet him and discuss CPDL in Singapore. I was interested to have his views on what can be done in Mauritius in terms of policies on CPDL as he might have been advising other education systems similar to Mauritius. He suggested that I send him some questions on which I would like to have his views (see Appendix 6). I asked him about the skills that our teachers should develop, how Mauritius should carry out CPDL programmes and delivered by whom. He mentioned some examples which I had already covered in Chapters 2 and 3. For my own professional development that was a very fruitful experience and it gave me more confidence to discuss with other professionals at this level.

Conducting interviews

Interviews were conducted from August to October 2017. All the interviews needed careful preparations: making arrangements to visit schools, securing permission and at times rescheduling appointments. I conducted interviews with the three principals, three HoDs and a focus group with three teachers in all the three schools I chose to research. I visited the principals as the schools were within a 45-minute drive from where I live. Though location was not a factor determining the choice of schools, yet it was an advantage for me as I had

only two hours permission to do my research on any day I had interviews. On days I required more time I had to take a day off. So whenever possible I had to stick to that facility given to me. Very often I was accepting the date and time proposed by the participants.

What I learnt from conducting interviews

With hindsight I can say that conducting interviews helped me to develop personally in terms of approaching and talking to people, accepting refusal from people who did not want to participate in the research. I learned to appreciate and value the time that participants accepted to spare for me during interviews. I realized how people were willing to share their views on such an important topic as CPDL. When analysing the data I could value how useful and interesting they were.

It was the first time that I was using the focus group interviews and I found it interesting when teachers were discussing issues among themselves. That allowed me to have a greater insight of the topic. I was learning throughout the investigation. The conversation with the participants was extending my understanding of the topic I was researching. The participants were bringing new and unexpected aspects of CPDL. I was able to explore new dimensions of the research topic.

I could improve my questioning techniques as I was learning more about the topic. During the interviews I tried to put everybody at ease by asking questions such as in how many schools they have been teaching before joining their current school. Then I asked them questions as per the interview guide, but at times it was not easy to follow the order set. Sometimes teachers would drift away from my questions and I had to bring participants back on track. The experience I gathered over the interviews helped me tremendously. I had some experience from the first interview I conducted and those, which followed, were much easier. The piloted interviews helped me considerably.

The personal contact and the new insights into the subject made interviewing an exciting and enriching experience. I often used the probes and prompts as I was improving my questioning skills after every interview. For example, I used phrases such as 'tell me more...', and then... 'Can you explain?' The interview guide was just a guide from which I could deviate as necessary.

During the interviews I learned to listen. I wanted to make sure that the participants were not on the defensive or off track. I tried as far as possible to ask questions in a straightforward and clear way. It was important for me to ensure that the interviews finished on a positive note (Wengraf, 2004). All the interviews had to be recorded on my iPhone and then the most relevant and important sections were transcribed within 48 hours so that I could capture the

details whilst they were fresh in my memory.

The interviews gave contextual views on issues in every school that was studied. The in-depth nature of an intensive interview provided the opportunity for each participant to relate his or her experiences. The interviews helped me to capture the unique experiences and special stories of my participants and obtain detailed explanations of how they can improve the quality of their teaching with CPDL. I had to terminate the interview on schedule as I had the professional obligations of respecting the undertakings I took.

I also learned that I had to be patient when planning and conducting interviews. It takes time. I took over about nine months to collect data from the survey and the interviews. That is very time consuming and it took me twice as much time than what I expected. Participants took quite some time before returning the survey questionnaires. It was important to remind them to fill in the questionnaires. Planning for interviews in schools needs considerable preparation. It becomes easier if you have a network. To have three teachers together for focus group interviews (FGI) depended on the timetable and when they were free. Thus it was important to be flexible.

However, to conduct interviews with senior officials from the MOE was a hurdle for me. I wanted to have their views but it was impossible to get their agreement for an interview. I had a conversation with one adviser whom I thought was very influential in policy making but when I invited him for an interview he did not respond to my correspondence. I also contacted a few directors by mail but they did not reply. They were afraid of reprisals from people at the top of the MOE for criticising policies which they themselves were responsible to implement - fear of self-criticism. One of the two directors, who agreed to answer my questions, told me that he did not want to voice his opinion just to avoid problems. My interviewee would talk at length on different issues giving me his point of view on teaching and problems teachers are facing and the reasons for that.

However, when it came to giving an explanation on the responsibility of the QAID, for example, he preferred not to talk for fear that people may say that he was critical of them. Similarly, when it came to discuss matters of zone in terms of CPDL, he had no comments. In fact, what I gathered was that there was a culture at the MOE, not to be critical. I felt that officers at the top of the hierarchy were really powerful and those who were just below them acted in ways not to displease their superiors. However, I appreciated the two directors who accepted the invitation to participate in the research and I was able to gather their views on most of the issues.

4.7 Data analysis

I started analysing the data using Miles and Huberman's (1994) analysis method consisting of three concurrent flows of activity: data reduction, data display and conclusion drawing. Later I adapted Carneys' model (1990). As mentioned above, interviews were transcribed as soon as possible after being carried out so that contextual and non-verbal cues were not lost (Silverman, 2000). A rigorous, transparent and systematic approach to data analysis was employed (Robson, 2002; Bryman, 2004). I read and re-read the transcriptions several times (Hammersley and Atkinson, 1995). Apart from rigour, I knew that analysis had to be explicit and systematic (Denzin and Lincoln, 2005).

The long transcriptions had to be reduced to start with (op. cit.). Data reduction is a sequential and continuous procedure of selecting, focusing, simplifying, abstracting and transforming data into a conceptual framework. Similar ideas were grouped in themes. Themes were coded by hand. Coding means categorizing segments of data with a short name. Inductive data analysis was used where the codes were not predetermined (Bryman, 2004; Gray, 2004). Codes changed with further levels of analysis and moved from more specific and concrete to more general and abstract (Punch, 2009).

Data display helped to present information in a visual format as shown in the data analysis worksheet I prepared (see Appendix 7). The presentation of the information in a systematic way helped me to draw valid conclusions through contrasts, comparisons, patterns, trends or intensity. In order to analyse the data I used one colour for similar ideas then grouped them. As I read the data I used the recurring ideas to make temporary constructs. I kept counter examples and highlighted them in a different colour. Then I read a second time and formed second-order constructs which summarized the important themes in the data.

I thought about the themes and found out how they connected to each other; what matched with what; were there areas of agreement; were there contradictions or paradoxes. I selected sections or quotations from my data to illustrate the themes (Thomas, 2013). Emergent themes were identified for the purpose of selecting units of analysis (Polit and Beck, 2004). Data display allowed me to view the data which I selected from all sources with coherence, then I focused on a full set of data to answer my research questions. In this way conclusions were drawn. All the steps I went through in order to analyse the data properly - reading and annotating; categorizing; linking data; connecting categories; corroborating evidence; producing an account, largely based on Carney's (1990) model, as shown in Figure 4.1

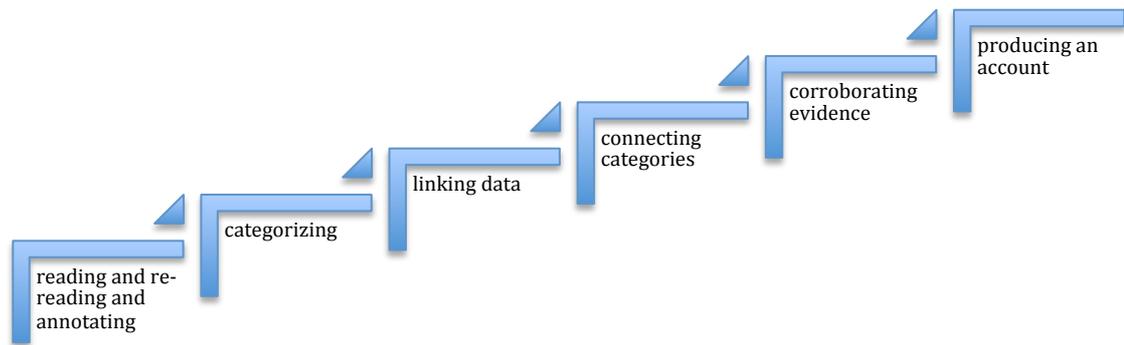


Figure 4.1: Carney's (1990) model of data analysis (adapted)

I identified the understanding in my research questions that the participants expressed and established within each data set and it was necessary to organise the findings that transpired. Next to my analysis of each data set I had started to record my interpretations. I categorised and coded the views of the participants, and organised them into themes in relation to the RQs by looking for patterns and contradictions (Miles and Huberman, 1994). I refined these categories in relation to the literature, my experience of similar settings, and emerging themes within and across each data set. For example, in answering the RQs about one-off workshop, I looked for patterns and contradictions within all the set of data relating to individual teachers, principals and inspectors. Throughout I searched explicitly for examples confirming and also contradicting the main ideas.

Trustworthiness in case study research

According to Bassey (1999) the concepts of reliability and validity are vital concepts in surveys and experiments but not in case study research. As an alternative to reliability and validity, Lincoln and Guba (1985) use the concept of trustworthiness. From Bassey's point of view, trustworthiness illuminates the ethic of respect for truth in case study research. Lincoln and Guba (1985) enumerated that some questions that must be asked at the different stages of the case study to see if the research is trustworthy. For example at the stage of data collection has the raw data been adequately checked with their sources? When the data were analysed, has there been sufficient triangulation of raw data leading to analytical statements? At the interpretation stage, has a critical friend thoroughly tried to challenge the findings? At the reporting stage, has the account of the research been sufficiently detailed to give the reader confidence in the findings and does the case record provide an adequate audit trail?

I had as far as possible carried out the research having in mind the questions asked by Lincoln and Guba (1985). In addition I had also followed the advice given by Bassey (1999) to assure trustworthiness. I have been respecting the views of the participants. I mentioned to them that I was collecting data and there were no right or wrong answers but I simply wanted their views on a particular subject matter. I have been asking a critical friend to read the thesis as I was progressing and she expressed her views on the different chapters including the findings.

Participant validation

In order to ensure that the raw data collected were valid, the advice of Lincoln and Guba (1985) that the data must be checked with the sources can be applied. Throughout the process, participants can validate their own transcripts on an ongoing basis. Hammersley and Atkinson (1995) advocated explaining to the participants how one is developing conclusions as a means of building trust with the participants. Bryman (2001) warned against trying to become the mouthpiece of the participants and noted the risk of contaminating the subjects' words and behaviour. I am fully aware of the importance of data validation which I found difficult to do as explained below.

I could have checked the data with their sources, as it is good practice after an interview to take the report of the interview back to the interviewee to check that it is an accurate record and that the interviewee is willing for it to be used in the research. This is because sometimes people realize that they have not said what they meant to say and this provides them an opportunity to put the record straight (Bassey, 1999). Unfortunately I was not able to do this as many participants were on holidays and I did not want to intrude on them. I knew from experience how it was difficult for me to get the questionnaires from principals and I realized that would be quite similar with teachers. I could refer to the transcriptions of the interviews as I had them.

'Peer debriefing' and audit trail

Lincoln and Guba (1985) suggested that a critical friend should try to thoroughly challenge your findings. They refer to this as 'peer debriefing'. In fact, I had recourse to a friend to comment and criticise the findings. This required openness and humility in order to ensure that friendship survives but it is invaluable in strengthening the research project (Bassey, 1999). For the research to be trustworthy, I kept systematically a record which can prove what I was doing stage-by-stage on the research in order to justify the conclusions. In Appendix 7, I showed examples of transcriptions I collected from the survey for analysis in Chapter 5.

4.8 Summary

In this chapter I have presented the RQs and discussed the research design. I also discussed the methods of collecting data in order to answer these RQs. I explained how I have chosen my participants and carried out the interviews using my interview schedule and explained how the data were analysed. I have also dealt with the main ethical issues in undertaking the research.

Chapter 5 Survey analysis

In this chapter I present and analyse the information collected from one of the two data sets, namely the questionnaire survey, to answer my research questions (RQs). The survey questionnaire (Appendix 2) had four sections: teachers' skills, professional development, improving professional development and good practices at schools. The findings are presented in relation to the RQs.

5.1 Teachers' skills

Using a four-point Likert scale, the principals were asked how they rated their teachers' skills in terms of several key areas. This question would provide answers for RQ 2. The data obtained also helped our understanding of the pedagogic skills needed for their teachers to improve. From Table 5.1 (see Appendix 9) it could be found that principals said that teaching skills were either 'good' or 'satisfactory' in their schools. Slightly more than half of the principals (53%) stated that class management in their school was 'good'. Fifty one per cent of them said that lesson planning also was 'good'. Roughly the same percentage found providing appropriate feedback to students after assessments and using a range of questioning techniques in class as 'satisfactory'. About one-fifth of principals (18%) considered teaching strategies as 'good', whereas nearly three-quarters (73 %) were of the opinion that they were only 'satisfactory'. Nearly one tenth of the principals said that the teaching strategies, provision of feedback and use of questioning techniques were 'poor'.

5.2 CPDL and quality of teaching

The principals were also asked to what extent they thought that CPDL could help teachers to improve the quality of teaching and the findings are shown in Table 5.2 in Appendix 9 which showed that the majority of the principals, nearly two-thirds (61%) reported 'very much'. It should be noted that no principal was of opinion that CPDL would have 'very little' or not improve the quality of teaching at all, although just over one-third (34%) believed that CPDL will help teachers to 'a fair amount'. A small minority of principals (4%) however did mention that CPDL would 'partially' improve the quality of teaching. These findings shed light on RQ 2 on the views of principals on CPDL and quality of teaching.

In order to know on what basis the principals were making their decisions to justify the importance which CPDL had for the quality of teaching, they were asked to give the reasons for their choice. An analysis of this open-ended question found that the most common reasons given were: teachers will learn new teaching techniques; be more capable to manage classes; become reflective practitioners; use technology better; improve their professional standards; share good practices and give more and better feedback to pupils.

5.3 Types of CPDL

Principals were asked to tick one type of CPDL among five options provided and the findings showed in Table 5.3 (Appendix 9) provided answers for RQ 4. It could be found that the vast majority of the principals (84 %) said that one-off workshops organized by the QAID were the main source of CPDL in their schools with their teachers. Similarly, nearly nine out of ten (88 %) said that their teachers were able to attend courses on CPDL from the MOE. Only a small minority of principals (15%) were involved in site-based CPDL and about two thirds (63%) said there was no self-directed professional development in their schools. Thus the one-off workshops offered by the MOE were the most common form of CPDL in the schools.

Principals were asked to mention any other forms of CPDL existing in their schools. Most of the responses coming from the 17 principals (n=49) who answered this question were related to self-directed CPDL. As one respondent (R 3) said:

My school is a showcase for Microsoft and teachers subscribe online to the educator network service where they train themselves voluntarily. Otherwise there is no decent CPDL programme coming from the MOE.

The principals were also asked to what extent they were providing different types of site-based CPDL. A five-point Likert scale was used for that purpose and the findings as showed in Table 5. 4 (Appendix 9) were that most of the types of CPDL exist only 'partially' in the SSSs. As far as collaborative teaching is concerned about one third of the principals said that it exists to 'a fair amount', while 39 per cent said that it existed 'partially'. However, 18 per cent of principals ticked 'not at all' for belonging to a group. These findings were important to answer RQ 1.

5.4 One- day off workshops

As one of my research questions (RQ 4) was related to one-day off workshops provided off site during school time or during holidays, I asked the principals to indicate the extent to which they thought that this form of CPDL had a positive effect on the quality of teaching. Nearly 50 per cent believed one-day off workshops only 'partially' influenced on the quality of teaching. The other findings are showed in Table 5.5 (Appendix 9).

5.5 Who needs training?

In order to have the views of the principals on what category of teachers needed training and at the same time to know who are those who needed more training, they were asked about the usefulness of training for different categories of teachers. The data obtained are related to RQ 5 when appropriate training is to be provided instead of the much criticised 'one size fits all' model. The findings showed in Table 5.6 (Appendix 9) were that the majority of principals

(86%) said that professional development would be 'very useful' for new recruits. A relatively high percentage (74 %) also believed it would be 'very useful' for supply teachers. About two-thirds (65 %) said that CPDL would be 'useful' for experienced teachers. Slightly more than half of the respondents thought that training would be useful for HoDs (59%) and senior educators (51%). Therefore it can clearly be seen that principals are of opinion that CPDL is important.

5.6 Duties of HoDs

From the list of duties of HoDs, principals were asked to indicate which ones were performed in their schools. It was deemed important to know exactly what HoDs were doing in schools in connection with such an important responsibility concerning CPDL. The findings showed in Table 5.7 (Appendix 9) would provide explanations for RQs 4 and 5.

Overall, the majority of principals stated that the HoDs in their schools were doing their job as per the latter's scheme of work a 'fair amount', 'partially' or 'very little' as demonstrated in Table 5.7 (see Appendix 9). This indicated that there is a lot to do in that area. As it was important to have a broader perspective on what HoDs were doing at schools, the principals were asked for their views on the HoDs' work. Fifty eight per cent of principals talked about training that HoDs needed in connection with CPDL, the lack of leadership and experience (some have only five years' experience), the absence of accountability, the need to organize workshops and monitor the work of members of their department.

The principals raised several concerns about the role of HoDs. One noted how the HoD's own CPDL is of utmost importance and should be of an acceptable standard (R 17). Another principal pointed out that:

HoDs who undergo CPDL courses can better lead and monitor work of educators in their departments. They can better counsel and guide educators (R 1).

Similarly, R 7 said:

HoDs should be more accessible to teachers of their department and be effective mentors. This implies that they must update their own skills to be facilitators of the teaching and learning process in a digital context. They must also be decision makers and have good leadership qualities together with a vision for their department.

Thus it can be said that the HoDs needed training themselves to be able to train teachers; to be their mentors and to have good leadership skills and authority.

5.7 Roles of senior educators

As shown in Chapter 1, senior educators also have a vital role to play in providing CPDL. Therefore to know to what extent the senior educators were able to improve the quality of teaching the views of the principals were sought. These findings showed in Table 5.8 (Appendix 9) illuminated RQs 4 and 5. The majority (59% and 61%) ticked the option 'not at all' for the duties of organizing and running in-service courses respectively. A quarter of principals (26%) were of the opinion that the senior educators introduced pedagogical programmes for quality enhancement in teacher performance 'a fair amount'. Principals were also asked to explain their choice. The main findings were that senior educators needed training and should be engaged in mentoring rather than doing administrative work replacing deputy rectors. They were supposed to advise on pedagogical matters which apparently they did not do at all.

5.8 Teachers' characteristics

The implementation of new policies demands a particular engagement. Any change, for example, providing CPDL in schools or by MOE, depends on teacher attitudes for its implementation (Bubb and Earley, 2010). As the dispositions of the teachers are vital, principals were asked to give their views on the teacher characteristics provided (see Q8 in Appendix 2). The findings would help to understand some issues and also help in the recommendations on improving CPDL depicted in RQ 5 in order to become better practitioners.

Principals evaluated their teachers quite differently on their ability to teach. Forty-three per cent of principals found that their teachers had the ability to do the job to 'a great extent' and slightly more than half of the principals (57%) indicated they had the ability to do the job only to 'some extent'. It is interesting to note that the perceptions of the principals are different. The majority of principals (90%) found that their teachers were passionate about teaching; showed dedication and professionalism; demonstrated a positive attitude to teaching; and were motivated to 'some extent'. The majority of principals (74%) said that their teachers were willing to 'some extent' to improve their teaching. However, there were about one fifth of the principals (22%) who said that their teachers were willing to improve by a 'very little' extent.

Furthermore, just over half of the principals (53%) said that their teachers needed new skills to 'a great extent', whereas nearly two-fifths believed that they needed new skills to 'some extent'. Thus it can be said that the vast majority of principals (96 %) support the view that teachers needed to acquire new skills. These findings provided answers for RQ 3 when the roles of CPDL were discussed in Chapter 7.

5.9 Provision of CPDL at school level

One of the objectives of the survey was to find out how CPDL was provided in SSSs and this also provided answers for RQs 1 and 5. In those cases where schools were doing better in terms of CPDL than the average, then a selection of these schools could be studied in depth. Therefore the principals in SSSs were in a very good position to talk about the provision of CPDL at their school level and were asked to what extent their schools provided CPDL. The survey findings showed in Table 5.9 (Appendix 9) that twenty-eight principals (57%) said that they provided CPDL only 'to some extent' and 25 per cent 'not a great deal'. Nevertheless, 14 per cent did say that they 'greatly' provided CPDL. In order to understand the principals' responses they were asked to support their answers in the space provided. The main types of CPDL disclosed were: encouraging good practices among teachers and HoDs; inviting resource persons at school; encouraging teachers to make use of ICT and follow courses as well as providing feedback after class visits. However, principals pointed out that the main reasons for not being able to provide sufficient CPDL were time constraints and lack of resource persons and means to provide CPDL.

5.10 Measures to improve CPDL

My research question (RQ 5) was about how the present system of providing CPDL could be improved. Consequently the principals were asked to indicate which of the measures offered should be taken to improve the provision of CPDL at their schools. The findings showed in Table 5.10 (Appendix 9) that the majority of principals (61%) were of the opinion that training middle management (i.e. deputy principal, senior educator) would improve the provision of CPDL 'very much' whilst about one third (30%) said that it would improve CPDL only by 'a fair amount'. One half of the principals indicated that the following measures would improve CPDL 'very much': providing the school with a budget for training; common free periods to teachers for sharing good practices; lesson study, observation etc.; and the zone having the responsibility to organize professional development for HoDs which will be cascaded to teachers. However, measures such as 'employing master teachers at the school' were seen to be important only 'a fair amount'. For nearly all the measures one third of the principals found them to be either influencing CPDL 'partially' or 'a fair amount' only.

Apart from the measures listed in Table 5.10 (see Appendix) principals were requested to mention which other measures would improve CPDL. Forty five per cent of the principals talked about use of ICT; online discussion in teachers' forums; encouraging a network for HoDs to collaborate; providing financial incentives and scholarships; monitoring quality and sharing of good practices between schools.

5.11 Summary of analysis

In this chapter the data from the questionnaire survey were analysed to provide answers to my RQs which mostly focused on the views of principals on CPDL. Principals said that teachers needed professional development to develop competencies and acquire certain skills which will help their teachers become better than they currently are. The most popular form of CPDL was found to be the one-off workshop provided by the QAID or MOE. It was also said that the HoDs could play an important role in training teachers but currently they seem to be very limited in what they are doing. It was said that HoDs themselves must be trained first to be able to train members of their department. Perhaps the principals must be trained also. In many schools it was found that forms of CPDL existed only 'partially'.

Chapter 6 Interview analysis

This chapter reports on the data derived from the interviews conducted (with a director, an assistant director, three principals, three HoDs) and the focus groups of teachers undertaken in the three case study schools. Views on different aspects of CPDL on the quality of teaching were explored. The chapter is structured to explore each of the research questions (RQs) successively.

6.1 Importance of CPDL

One RQ was asked to find out if the participants were aware of the importance of CPDL and how it could be used to improve the quality of teaching. Participants recognized the importance of CPDL in becoming effective practitioners and helping to improve the quality of teaching and learning. Both directors and the three principals were of opinion that CPDL was important to improve the quality of teaching. For instance, Principal 2 talked about the difference CPDL will make on teaching. Teachers must know pedagogical theories and should be able to discuss different perspectives on education that will help them to know their responsibilities better. Teachers should be exposed to fundamentals of professional knowledge and skills that will help them to develop effective teaching skills. Teachers will then be able to teach students of different abilities, motivate them, raise expectations and help them to achieve their potential. For Principal 3 training is a must and teachers cannot teach in the way they were taught. It is essential to keep up to date as students are changing and plenty of information is more readily available.

Similarly, Director 2 explained how through undertaking CPDL the teachers would acquire the necessary skills needed to be able to improve the quality of teaching. The director believed that knowing the subject content was not enough and it was important that this knowledge was transmitted to students of different abilities, not only the bright ones. A teacher must be trained to work with students of different levels. Director 1 remarked that students have little or no respect for their teachers in school and do not rely on them too much because they cannot teach effectively. Similarly, the World Bank consultant working in connection with the Nine Year Schooling (NYS) policy introduced in 2018, when asked about the importance of CPDL said that:

Upon this weak foundation (Mauritian teachers in high schools have no foundational knowledge and skills provided by initial teacher training) you have an ambitious reform agenda. Your present teacher cadre is not up to delivering reform objectives. CPDL is thus crucial.

The teachers who participated in the focus group interviews as well as the Heads of Departments (HoDs) discussed the importance of CPDL and that is dealt in the following section.

6.2 Teachers' skills and competencies

Another RQ was about the skills and competencies that teachers needed to improve the quality of their teaching. So the views of the participants were sought. All were unanimous that certain skills and competencies were essential to achieve this goal. Teachers expressed their views on what they wanted to learn and why. This helped to see CPDL from a bottom up approach. The other participants also made it clear what skills and competencies teachers required and could be acquired through CPDL. It was found that the main skills required were: ICT, communication, class management and questioning techniques.

ICT skills are essential for teaching, recording students' performance, producing documents for administrative purposes and for the teachers' own professional development (PD). All the focus group participants highlighted that they were fully conversant with ICT which they used to enhance their teaching by using videos, laptops and overhead projectors. Several teachers used their mobile phones to send notes, instructions and feedback to their students on their Facebook account. Moreover, the majority of young teachers, according to them, were very conversant with their laptops and those who were not using a laptop were mostly the old teachers who had not acquired that new skill.

B FGI 3 explained how she used technology to improve her teaching:

For a demonstration I use videos and students are more attentive. The students like technology... are more motivated to come to the class and learn. I can see the improvement in teaching and learning...these ICT skills are very useful. I send visuals to the students using WhatsApp.

In fact, a novice teacher (C FGI 1) spoke of the needs to acquire ICT skills to be able to use the tablets given to students in class. HoD 3 also explained how useful technology could be, for example, to allow students to take pictures instead of copying notes to save time. However, some teachers are strict and abide by the rules and regulations which forbid the use of phones in class. For HoD 3 teachers need to make an effort to improve professionally unlike in the past. Appropriate training to use the Internet and how to use ICT tools must be provided.

The principals and the directors held similar views on the vital importance of ICT skills. Principal 3 mentioned that:

Teachers must be ICT literate and have ICT skills. They have to develop professionally by researching their subject content, involve themselves in research and participate in debates. Learning is a lifelong process.

Communication skills and class management are crucial for teaching and learning to take place. The mastery of these skills contributes to improving the quality of teaching. The majority of the participants talked about the importance of communication skills which teachers must develop. Principal 1 said that:

Teachers must have communication skills to impart knowledge and inculcate in students skills they need...teachers must be able to do presentations.

All participants agreed that class management is imperative. Teachers have to maintain discipline to create an atmosphere conducive for learning to take place. This is not an issue for teachers working in girl schools but in boy schools it was considered to be a major problem. Teachers must be able to assert their authority in class to ensure there is discipline. In fact teachers have to maintain discipline as one of their duties but that is no easy job. With CPDL, teachers may acquire certain skills to control the students. Director 1 related how during his class visits many teachers had class management problems as they had no class management skills.

C FGI 2 confirmed what the director said and stated that:

Some students are difficult to handle and class management is difficult. In workshops teachers having similar problems must be trained together, for example all the regional schools together.

A FGI 3 who was from a National School for boys, expressed similar views:

The biggest problem is the indiscipline of students who take private tuition and are not interested in following the class. Instead, they listen to music, do not take notes and disturb others.

The skill of asking questions was also considered very important to improve the quality of teaching. HoD 2 pointed out that having questioning techniques might help to manage classes also. Furthermore, HoD 1 noticed how new teachers had difficulties in managing classes as all the students would start to talk at the same time when a question was asked.

Teachers also need competencies when they want to improve the quality of teaching. Working together and learning from peers were two competencies discussed by the participants. HoD 3 talked about teamwork and how he helped his junior staff to integrate in the department. When asked about the competencies of teachers he remarked that young teachers must join their elders to learn from them but the main drive should come from themselves.

One director recalled that as a former principal he could always find staff members willing to form part of the management team at school. He spoke of knowing the staff and motivating them to shoulder different responsibilities. For him it is essential to have the right teacher in the right place.

Thus from the qualitative data it could be found that teachers could improve the quality of teaching if they had ICT, communication and class management skills as well as developing competencies such as working in teams.

6.3 CPDL and the needs of teachers

Another RQ was to what extent is the CPDL currently provided helping teachers to meet the identified needs? The training provided by the MOE and the QAID is standardized using the one-off workshop model of CPDL. So, I wanted to have the views of the participants on that model. The present formula for providing training does not seem to be accepted by the participants. According to Director 2:

We have very little of CPDL in State Secondary Schools in Mauritius. Many teachers have been to the Mauritius Institute of Education 20 years back and have never done any professional development since then.

Principal 3 referred to the workshops as briefing sessions rather than training. The QAID is concerned only with class visits and according to him the CPDL model did not help. Similarly, HoD 3 said:

There is nothing as training as such. Recently I went to one and they were looking at one examination paper and problems students had. It was mostly like a survey. There were no solutions provided to us.

However, Principal 2 supported the view that the one-day workshops had advantages such as saving time, accessing more teachers at the same time, and providing the possibility for more teachers to express their views in discussions. A teacher who has not attended any workshops for five years did not mind attending a workshop even if he was close to retirement. He found it important to improve, as teaching is a dynamic process and you must continue to learn new skills. For him it is better to start somewhere.

The main problems of the one-off workshops are analysed below.

For many participants the one-off workshops were a waste of time. C FGI 2 said that:

...I did not find the workshop helpful as they were telling me what I already knew. ... when I am researching on the Internet I get more information. ...leaving the school to go to a workshop for half a day is really a waste of time.

Similarly, HoD 3 found that:

The training was organised just for the sake of training; it did not help, as it ought to have. I have lost my time I could have done some gardening instead. That would have been more productive. We were compelled to go, so we had to go to avoid explanations. It was neither useful nor helpful.

Many workshops carried out are meant for all teachers and HoDs irrespective of the subjects they teach, their experience or the skills they would like to acquire. During a group interview C FGI 2 said:

The workshop could be good for novice teachers and not a one-size-fits-all. ...experienced teachers learn more by talking among colleagues informally and sharing what has worked and difficulties faced. This provided us with ideas which can be applied in class. It has more impact on my teaching than what I have heard from people outside in one-off workshops.

Teachers wanted the QAID inspectors to help solve their problems, especially those which they found difficult and at times impossible to solve. B FGI 1 said that:

The QAID just come and look at the marks at the beginning and at the end of the terms. For the maths department they want to know why the rate of failure is so high and what you are going to do as a teacher. Maybe you have tried so many days and when you ask for advice, they tell us what we should do; the problem is there is no follow up.

Director 2 raised the issue of follow up which was discussed in the literature and said:

There must be a follow up in what the QAID inspectors do. If they believe that teachers need additional professional development then they should be able to provide or recommend it. Teachers having the same problems, for example class management, can be grouped together for training.

Principal 2 said that the follow up part in the organized workshops did not exist. She also explained that training could not be on and off, as teachers might not put in practice what is expected of them. At times teachers were discouraged as they could not really find solutions to their problems and nobody was there to help them improve or had the right strategies or techniques to teach. At times it could be noticed that the workshop attended might even have a negative effect on the participants. B FGI 2 commented:

Instead of telling us what to do, the speakers should have come to our school and do it rather than put us off. During a training course they are telling us that we are not doing the thing correctly. Despite trying our best, we see students committing the same mistakes all the times.

HoD 3 on his part said:

What I need to know is what is wrong, that is, why my pupils are not working well and what must be done. That I will not find in the Cambridge International Examinations reports.

Director 2 supported this viewpoint when she said:

When somebody is coming to a workshop, that person is sacrificing a day during holidays and wants to know something. Some come because it is mandatory. I think workshops should be held in small batches for them to be effective.

Thus one-off workshops were mainly seen as a waste of time with no follow up and a one-size-fits-all strategy.

6.4 CPDL and quality of teaching

This section reports on the types of CPDL that existed in the three schools studied and attempts to answer the main RQ: what kinds of CPDL can make individuals better teachers? In order to find out what types of CPDL activities were carried out in the three SSSs, teachers were asked about the good practices found in their departments and at the school. The main findings were that peer coaching, collaboration, sharing of information, and to some extent training, existed at the level of the school. One principal explained how she dispensed CPDL in her school and the others explained the facilities and support they provided to teachers.

Teachers and HoDs interviewed were quite optimistic and supported with examples how peer coaching helped them professionally, despite one director expressing her views that it may not be possible to implement it in our schools knowing the attitudes of teachers. In SSS 2, two departments introduced peer coaching after their principal talked of this practice as a means to improve teaching. During her staff meeting the principal advised her teachers to adopt peer coaching as a type of CPDL. The teachers shared their experiences with me. HoD 2 said:

After the class visits we would meet and discuss about teaching and learning strategies; what was good and what could be improved. ... very helpful for me to have the opinion of another teacher on my teaching, lesson planning, classroom management, discipline, speech and voice, students' participation and learning styles. ... weaknesses on questioning techniques were also discussed...

Similarly, two teachers from another department explained how they followed the request of the principal to use peer coaching as a form of CPDL. The teachers explained how they prepared and shared the lesson plans. One teacher related how her colleague would come to follow her class and discussed at the end of the lesson different aspects which could improve the quality of their teaching. As it was a science class they would discuss whether a different experiment would have helped the students to better understand the topic. However, according to HoD 2, the main constraint with peer teaching is that all depends on whether

teachers accept the idea of having a colleague in their class. This practice is not usual in the SSSs.

Collaboration existed in the three schools studied. All the three participants in the FGI 3 supported the idea of collaboration existing in their respective departments. In one department the teachers used brainstorming sessions to find out how their students could develop certain skills which were important to help explaining difficult concepts. C FGI 3 said that planning starts at the beginning of the year and for difficult chapters ideas from all the members of the department are sought. The novice teachers' views were also taken on board. When novice teachers had problems they would seek for help from the experienced teacher who would help them.

Similarly C FGI 2 showed how the teachers collaborated in her department:

We planned our work together; use a common scheme of work for three terms and share teaching resources. In departmental meetings I always encourage teachers to share their teaching and learning resources either online or make photocopies and distribute among the staff.

A FGI 2 who was from the same school explained how teachers collaborated in her department:

We make co-lesson plans, schemes of work, lesson notes together. We take each other's view... share some ideas mostly about what strategies to use and how could we do better.

The teachers in the focus group from one department meet every day, after a class, and at times from home and during the holidays. They do their lesson plans that they send by WhatsApp. The collaboration helped introduce teachers to new ideas and use different strategies. Such collaborations were said to help the teachers to improve the quality of teaching as they had new ideas, used different strategies and sometimes changed the strategies, especially with the slow learners.

Principals also were asked to discuss good practices in their schools for the purpose of the research. Principal 1 from a regional school in an urban area talked about how her staff collaborated in one department where 'practicals' were planned together so that there was more than one teacher in the labs. However, she noted that such collaboration was not found in other departments in the school.

Collaboration will be possible when the teachers of one department or school want to learn from each other. Very often that becomes an issue as noted by Director 2:

Many teachers believe that they cannot learn from their colleagues, if you ask a young teacher to get in the class of a HoD, who is supposed to be an experienced teacher, the HoD won't like it and will say that the teacher is coming to spy on me. But if the HoD is asked to go to visit the class of colleagues, then the latter will go to find faults.

Teachers in the three case study schools stated how they shared notes and videos in order to improve teaching quality. One teacher in the focus group explained how information was shared in his department. In some departments the culture of sharing teaching materials such as videos, lesson plans and notes existed (A FGI 3). C FGI 3 supported that view and said that among colleagues they looked for better teaching materials which they then shared.

6.5 Self-directed CPDL

Self-directed CPDL appeared to be prevalent in the schools studied. In order to know more about their own CPDL, teachers were asked how they improved themselves professionally. In a quest for knowledge and to be more effective teachers with better teaching qualities, teachers improved their qualifications when they were transferred to better schools. The teachers were aware that students in these schools had higher expectations. So the teachers had to deliver. Self-directed CPDL was the one favoured by the teachers. C FGI 3 said:

I have always to look for ways to improve my teaching to ensure that students understand the concepts better. In my subject, the students have to do projects. I myself should know the different tools which exist.

In SSS 3 teachers who were registered with Microsoft Learning Community were having their PD individually or on their own. The teachers take part in a competition called the Microsoft Innovation Education where they use technology to teach in an innovative way. B FGI 3 who is registered on the course talked of facilities and resources available online for them to be trained and share their views with other participants in group discussions. The teachers who participate in the programme learn to work together and help each other. This was said to help develop new competencies.

There were also online forums which teachers could register on. They participated in debates on line, have group discussions and post their problems expecting other participants to respond. This helped the teachers to gain greater skills for improving the quality of teaching. Director 1 said: 'I know colleagues who have made efforts and made a lot of progress and others unfortunately have not made any effort at all'. Director 2 pointed out that other forms of CPDL exist in addition to the one-off workshops. For her:

Anybody who is interested has a variety of programmes online that they can enrol on to be able to become good teachers. On the Internet you can read what people are doing, how they are doing and learn from them. That is the way I have learned on my own.

With the Internet facilities available it is easier for people to connect though they may not be in the same school or country. B FGI 2 mentioned that online forums might be a useful means to develop professionally and as result improve the quality of teaching. However, this depends on the individual. Principal 1 said that teachers could interact online if there were online sessions on CPDL. This would have helped the teachers to interact by creating a platform for sharing. This would also save resources. Similarly A FGI 1 suggested something very similar to what Principal 1 said:

We could have a forum just for Mauritius where teachers could connect... When we have workshops, very often it is with people not teaching. It would be better to share good practices with teachers about what is working and how they are teaching. Resource persons who are not in teaching do not know the problems that we are facing in the class. We need professionals in the field.

C FGI 2 explained how a group formed by teachers could help to improve the quality of teaching:

There must be a cluster of say French teachers who are encouraged to go on that forum. It could be a platform where teacher can share ideas and their successes. We can also have an input from the MOE and students. So it will be a common learning platform as we are talking of a learning community.

However, Principal 1 and Director 2 raised the issue that teachers do not use the CIE reports provided online by the MOE enough or not at all to prepare students for the final examinations. In a quest to help teachers and students, reports are written by examiners from the CIE and made available to SSSs. Teachers are provided with a password to access resources such as reports, examinations papers, syllabi, model answers, and comments made on individual questions in recent examinations. The best scripts also are available for teachers to have an idea of the standard required as well as marking schemes. Consulting the reports would help the teachers in their PD. The reports provide strategies to be used to teach different topics. The CIE provides a lot of references which the teachers may also use to improve the subject content.

6.6 Improving the current system of CPDL

Another RQ was to find out how the present arrangements and forms of CPDL in secondary schools in Mauritius could be improved. So, the views of the various participants were sought. First, I will consider the data gathered in connection with the improvement which could be carried out at the level of MOE and QAID. The participants suggested improvements in key areas: needs analysis; the frequency of holding workshops; one-size fits all type; workshops according to subjects or disciplines; effective resource persons; and not one-off sessions.

Teachers said they did not benefit as much as they would have wished from their participation in the centrally provided workshops. They thought it important to carry out a needs analysis involving the teachers. This would help avoid any mismatch in the training provided and also ensure the training was dispensed at the right time. However, there was the risk that the teachers might not know what training needs are, as many had no initial training. Perhaps they would mention what they wanted as training. Needs analysis could be carried out when planning CPDL and teachers could use their Performance Management System form to delineate the specific fields in which they would like training every year.

Most of the participants criticised the one-off workshops by the MOE and QAID but Principal 3 was very critical when he said:

There is no training at all. They should have done a needs analysis first and then address the gaps with competent people. Feedback should be taken into account for coming workshops but there was no feedback collected. There is no follow up also. You can't take everybody on board for training because training is meant for people who are trainable. In fact it is not done professionally.

One-day workshops seem not to bring significant changes to the quality of teaching and in the literature there is evidence that workshops must be spread over time and continuous for them to be effective. In the study there is consensus among the majority of the participants that workshops must be more frequent. A FGI 3 said that at least once or twice every two years there must be workshops to learn new concepts and ideas such as 21st century skills.

The QAID inspectors supported this view and said that CPDL would have helped teachers become better teachers if it was continuous and compulsory instead of it being for one-day, as it has been carried out. One inspector commented that CPDL is fundamental for teachers to progress in their teaching provided it is intensive and ongoing. Only up to date CPDL will lead to better teaching (Personal correspondence). HoD 3 also said that training must be professional training otherwise it is not worthwhile as nothing will change. In addition it must be planned over time.

Similarly, Director 1 said that PD must be continuous because after some time teachers need to refresh. In this way CPDL would be more effective and beneficial. However, the same director argued that:

For the time being the one-off workshop is better than nothing. It is the starting point. Even annually one teacher must be given the opportunity to follow PD courses.

The QAID inspectors visit classes on a regular basis in all the SSSs of the four zones. One of their duties is to help teachers improve the quality of teaching and their benchmark is the performance of the students. Schools also send results of students for all examinations carried out. Nevertheless all the participants seem to have doubts on the QAID capacity in

helping teachers to improve the quality of teaching. Director 2 who formerly has been a QAID inspector said:

The QAID inspectors must have extensive experience in pedagogy and must be able to provide the appropriate solutions which will help teachers facing problems and improve the quality of teaching. They must be professionals in their approach.

A FGI 1 also seemed to doubt the capacity of QAID inspectors and stated that:

The inspectors only look for documents. When you ask them for something they do not know what to tell you. At times I believe that quality assurance is more for administrative work. They just check lesson plans.

There have been suggestions that workshops would be more worthwhile if they were organised on a subject or discipline basis as the needs or problems faced by the teachers differ. Furthermore experts in the field must conduct the workshops. Teacher (B FGI 3) said that there are problems which are specific to her subject only and the QAID inspectors shared that view arguing that teachers could acquire the skills to improve the quality of teaching if training sessions were organised by subject specialists. Moreover, Principal 3 commented that people who are knowledgeable must carry out the training.

For HoD 1 the resource person in the workshops must be to the standard the teachers are expecting. Teachers wanted to improve the quality of their teaching and not to listen to people who were not aware of the local context. HoD 3 was of the opinion that workshops could be contracted out in order to be able to employ qualified trainers. For him training by peer group will not work because it will be the wrong training, for example, specialised centres could provide training in different areas. He also raised the issue that HoDs themselves do not know what training to provide and how to provide it.

C FGI 2 suggested that Mauritius Institute of Education (MIE) lecturers could hold workshops, as they are more conversant with new teaching strategies. This would also allow older teachers to refresh their knowledge. She said that:

The lecturers from the MIE must do the coaching. There is a pressing need for teachers to learn how to teach in the school where we are as abilities of students differ drastically from schools to schools.

However, the views of Director 2 were different from that of C FGI 2 regarding the option of having the MIE staff as resource persons when she stated that:

We must have people who know exactly what is happening at school. If you look at the MIE staff, the majority has never been in schools. There is no point in having the workshop just for the sake of saying we are holding workshops. It must be with people who are competent in the relevant field and who can deliver.

Apart from having the right resource persons, participants suggested that the workshops must be organised in such a way that they are not boring (C FGI 3).

Now let us consider what improvement can be brought at the school level. One of my RQs was about how to improve the CPDL provided at school level. Participants suggested that school leaders should promote CPDL. It was found that a culture of promoting CPDL by the principals existed in SSS 2 and SSS 3. Participants who were not from the school were of the opinion that a lot could be done at school level itself in terms of CPDL and not to rely too much on the MOE and the QAID. For example, Director 1 suggested that:

At school level training can be organised by the principal with experienced teachers. That will help the teachers to acquire some skills. The principal should encourage good practices. Colleagues of departments could enter a friend's class for observation. The teachers will observe how the teacher taught a topic.

However, he said at times there was reluctance because some teachers do not like others to visit their classes. They were apparently afraid of criticism. Principal 2 said that she used her staff meeting to familiarize her teachers with the idea of PD:

I am trying to get teachers to review their teaching, adopt new strategies that could help low and mixed ability learners. ... I organised a small session on differentiated strategies two weeks back and I asked two HoDs to present the implementation of their differentiated strategies to their colleagues. ... hoping this kind of CPDL not only to motivate teachers but to initiate a professional learning community.

In SSS 3 the teachers and the HoDs praised the support they had from the principal:

The support of the principal is a great motivation to the teachers. We are provided with projectors, a computer and a printer. There is a projector for each department. ... many projectors can be moved easily to other classrooms. We have all these facilities and it is just for us to use them (B FGI 3).

The data collected from the teachers of SSSs during the focus group interview corroborated with what Principal 3 said:

I give them the facility of ICT. ... three projectors, laptops to be shared among teachers of different departments. ... teachers are encouraged to bring their laptops to school. We bought 15 projectors for 29 classes. ... invest in ICT media.

At the level of the school participants also suggested that opportunities to carry out research must exist. Teachers can develop professionally when they are given opportunities to carry out research as they do in Singapore and as suggested by the World Bank consultant advising on the Nine Year Schooling (personal communication). That idea could also be found in the data collected from participants. C FGI 2 explained that:

There are teachers who on their own carry out research to develop their practice and very often achieve something that could have been emulated by other teachers. A teacher might take what has worked from one of his colleagues and try in her class.

Principal 3 reinforced what teacher C FGI 2 said. For Principal 3, there are many ways to train teachers and the MOE needs to ask teachers to carry out research and publish their findings. A journal to publish research must exist at the level of the MOE or MIE to promote research. Lastly, let us consider what improvements are needed at the level of the system.

Teacher disposition is an important aspect of CPDL and the interviewees were asked how the current system could be improved. The majority of middle managers and directors talked about teacher attitudes towards training. The QAID inspectors said that some teachers lacked commitment and the desire to improve. Principal 1 talked about the importance to change the mindset of the teachers:

If they have a mindset to work in their comfort zone without growing then teaching and learning will not take place. Teachers should accept to learn, to voice out their difficulties. Many of them are struggling and they keep quiet. It is an ongoing process. ... collegiality and training is ongoing and can work in some schools. The major barrier is the unwillingness to grow on the part of some teachers.

Similarly Director 2 reiterated the aspect of teacher attitude:

For CPDL to be useful it all depends on the teacher. You may attend many hours of training and not taking anything but there are others who go for only a few hours and reap the benefits... when teachers go to the MIE, once they have turned their back, they have got their certificate, they go back to the same method of teaching.

For some teachers there was not enough recognition of what they did. Very often, they said, they were criticised by the QAID despite doing their best (C FGI 2) and that was very demotivating. Principal 3 mentioned that teachers must be rewarded for training:

We have to encourage the teacher for more learning. They should be trained on particular issues such as child psychology; remedial education and talking with parents. But we do not have these. The MOE has to be far-sighted and should have competent people to deal with these issues.

Nevertheless, in spite of many criticisms, the teachers in the case study schools showed a lot of willingness to promote a culture of CPDL in their department at least. For example, there were many informal meetings in the absence of insufficient time provided for CPDL. Most of the meetings were held during their free time. Three participants in the FGI 3 related how they exchanged their views. As there was no special time provided for meetings in the school timetable, these teachers met in the specialist rooms. One teacher said that every break was a short departmental meeting for them and they discussed issues. When problems arose they would discuss among colleagues and seek solutions. Teacher A FGI 3 noted that she used

her Facebook page at school to inform her students about issues and share valuable information. She used it also to discuss with her colleagues in the department.

6.7 Summary

The present form of CPDL does not seem to be of great benefit to teachers and they were very critical of it saying that not much is done productively or in an effective manner. Participants were very harsh in their criticisms of the QAID. Currently nobody was able to talk about a structured CPDL which was provided by the MOE, QAID or the school. On paper, it is the HoD, senior educator, the principal and QAID inspectors who should provide CPDL. However this was not the case in the majority of schools. Peer coaching, collaboration and sharing of information existed in the schools studied and could be reinforced as means of CPDL to help teachers improve the quality of their teaching. Despite the fact that teachers were criticized that they should be responsible for their own training and must have a more positive attitude to CPDL, they have shown their willingness to improve provided the workshops and other forms of training are seen as worthwhile; regularly organised; conducted by effective resource persons and with follow up mechanisms put in place.

Chapter 7 Discussion of main findings

The aim of the research was to find out how important continuing professional development and learning (CPDL) was to the quality of teaching. This chapter contains a discussion of my findings that I relate to the initial theories I have discussed in the literature review and the methodology I used. The findings are discussed in relation to the research questions (RQs) respectively.

7.1 RQ 1 What kinds of CPDL can make individuals better teachers?

My main RQ was to find out the kinds of CPDL that can make individuals better teachers.

Peer coaching, collaboration and self-directed CPDL: the way forward

There seems to be evidence that peer coaching, collaboration and self-directed CPDL helped teachers in SSS 2 and SSS 3 to improve their quality of teaching. From SSS 2, the model of CPDL was peer coaching. Teachers in one department described in detail how they were involved in peer coaching after learning of that model from their principal (C FGI 2). The aim was to improve the quality of teaching which would ultimately improve the students' performance at school. In the same school, HoD 2 was inspired to introduce peer coaching in his department which enabled both teachers to learn from the feedback of each other. So from the same school two departments started on a journey to improve the quality of teaching with the help of the principal. It can be deduced from this development that the leadership of the principal (learning-centered) encouraged the teachers and the class observations and discussions after the lesson taught impacted on the teaching. From what they said it was beneficial for them (C FGI 2 and A FGI 2).

In SSS 3 the teachers in three departments, namely IT, DCDT and Art and Design, described how they collaborated in their respective departments, exchanged videos and other teaching materials which they themselves had collected over time. The aim was to be able to teach their students better as they were working in a National School where students were bright and facilities were provided by the principals. They also discussed the best strategies which they could use to improve the levels of understanding of the students. In fact they were very motivated compared to the other teachers of the school which concurs with the literature on the importance of teachers' dispositions in learning new strategies to teach and use the best technology the school can afford.

There was also an element of self-directed CPDL which was found in the two schools. The teachers had improved their qualifications by doing a masters degree in school leadership and management. They were aware that it is important for them to improve their qualifications. However, the majority of teachers were not aware of the different forms of

CPDL which exist and did not have a benchmark for the standard required by quality teachers (Principal 2). The principals further deliberated on whether teachers were actually aware that they did not really know how to teach. In normal situations these teachers should not have been employed in the first place but it has always been the case that teachers who join the MOE do not need professional qualifications as mentioned Chapter 1.

The Nine Year Schooling (NYS) policy (MOE, 2016) has proposed that ITT be mandatory. When that part of the policy will be introduced is another issue. Nevertheless, some teachers knowingly wanted to improve their qualifications through self-directed CPDL and they discussed among themselves and learned what strategies worked in their schools and in so doing were able to improve their quality of teaching. Teachers also mentioned that they used the social network to learn new skills and see how others were improving in their schools. As some teachers were keen to learn and become better, the system needed to capitalize on that good will. For those who were not willing to improve it could be that they were not in the right profession.

Self-directed CPDL seemed to help teachers to improve the quality of teaching when they joined online forums (C FGI 2; B FGI 2) and studied from established institutions by distance learning. The main drivers in these cases are two-fold: personal endeavour to progress and to become better teachers by learning good practices. In the UK, for example, 'teachmeets' is a platform where teachers meet and discuss about issues concerning teaching and learning (Jones, 2013). Jones explained that a variety of groups exist and teachers have to 'pick and mix'. She found that the following helped her learning: research articles and lighter reading; reports and data (headlines and 'best bits'); conference tweeting and tweet conferences; blogs/posts; planned discussions and spontaneous debate and awareness of resources available on line. I have met some teachers in my school who have access to these forums and thought that many more teachers can have their own CPDL by joining in these forums. Sensitizing teachers at the school level can create awareness among teachers, as many are not aware of possibilities to develop professionally.

7.2 RQ 2: What competencies and skills are needed to improve the quality of teaching?

The skills and competencies that teachers need in order improve the quality of teaching are discussed below from the perspectives of the principals, teachers, HoDs, inspectors, directors and a consultant. The recurring needs or areas for improvement found from the survey and interview data were related to four main areas: class management, use of appropriate teaching strategies, ICT and communications skills. The QAID inspectors also mentioned other skills such as planning and assessment and leadership. For them teachers must change their teaching strategies from a teacher-centered approach to a student-centered approach. Teachers should also be able to monitor the progress of the students.

However, acquiring these skills is not enough, teachers must be able to use them effectively. According to Hattie (2009), effective teachers see learning through the eyes of their students. Teachers provide clarity on learning intentions and they know when learning is taking place or not and when to try alternative strategies so that neither direct instruction, collaborative, nor student-centred enquiry are sufficient, but rather need to be used reflectively in combination.

The skills required by the teachers to improve the quality of teaching were related to the problems faced by the teachers in class. Based on my research it seems that a high number of principals (73%) believed that the teaching strategies used in their school was 'satisfactory'. Thus it could be inferred that a lot of progress has to be made by the teachers in terms of knowing first what strategies exist and choosing the appropriate one to teach, thereby improving the quality of teaching. It is fundamental to use the right teaching strategies and that is a skill to be developed. In fact 61 per cent of principals responding to the survey believed that CPDL would influence the quality of teaching 'very much' compared to 34 per cent who believe that CPDL will only 'partially' improve the quality of teaching. This concurs with the OECD (2009) when it purports that an 'initial teacher education of the highest quality cannot provide teachers with the knowledge and skills necessary for a lifetime of teaching' (p. 12).

The findings showed that the teachers faced problems as mentioned in the literature review - class management, lesson planning and instructional strategies are all acquired during ITT (Darling-Hammond and Baratz-Snowden, 2005). According to Kennedy (2016) the problems teachers face are: portraying the curriculum content that enables the naïve minds to comprehend it; creating an atmosphere conducive for learning to take place; to be able to solicit student participation and finding ways to expose students' thinking. Teachers become effective when they make use of these skills and knowledge. Similarly, according to Joyce and Showers (1980) teachers need skills in order to: involve pupils in lessons; use a variety of challenging activities; apply the appropriate teaching methods; and use a variety of questioning techniques. Teachers need to develop skills such as persistence; to learn from their peers in the profession and to be flexible to be able to master them and become effective.

From the literature, basically the skills that the teachers need are acquired in the ITT but must be further developed through CPDL. In situations like Mauritius where there is no ITT, the problems faced by the teachers could be expected and now training and PD must be offered in-service via CPDL. In fact the World Bank consultant noted that teachers in SSSs did not have foundational skills and in general were unskilled and as such CPDL was very important (personal communication). The QAID inspectors complained of teachers lacking skills and their reluctance to learn new skills. Nonetheless we have to change the culture of schools and may be the teachers' approach to their own learning and development. Teachers may not be

aware that they lack skills (Principal 2) and do not attach too much importance to the QAID officers as the latter's advice was not seen as solving their problems (C FGI 2; A FGI 1). Furthermore the teachers may have already been used to their own teaching methods which they may find difficult to change (Director 2). Coupled with that, there is neither teacher accountability nor professionalism in the SSSs and in our education system in general.

A study of four high-performing systems including Singapore by Jensen et al. (2016), as discussed in Chapter 3, identified a set of common policies which include building time for collaboration; developing teacher leadership roles that organize and support professional learning; using school-level and individual-level evaluation and accountability systems to support professional learning and collaboration in each system. According to the authors, only when these policies were well managed would there be effective professional learning. The problem of class management is aggravated when teachers do not have any power in their hands and the students know their rights. Respondent A FGI 3 suggested that teachers and schools must be empowered to take disciplinary measures. Recently the MOE in an attempt to solve this problem came up with behaviour policy requesting school leaders to devise their own school rules and regulations. However, the behaviour policy seems not to be working, as the principals have not used it to introduce new measures.

The principals agreed that CPDL is 'very useful' for new recruits and supply teachers and 'useful' to experienced educators and all HoDs. This concurs with the literature where all teachers need training and must be learners. Joyce and Showers (1980) found that teachers could acquire new knowledge and skills and use them in their instructional practice when provided with adequate opportunities to learn. Incorporating new ideas teachers have learned in CPDL programmes may pose some problems as those in service have already developed their systems of practice which they believe will optimally resolve the challenges they face and have been used to (Kennedy, 2016). Getting all the teachers to change practice is an issue but they can be supported via coaching and observation, giving feedback once new practices start.

When asked in the survey how would principals rate the ability of the teachers to teach, fifty-seven per cent of principals said that they could do it 'to some extent'. When asked about the need of acquiring new skills 53 per cent answered 'a great extent'. In fact, the consultant from the World Bank succinctly summed up the skills and competencies needed when he was asked to comment on what teachers must acquire to improve their teaching qualities. According to him the Mauritian teachers in SSSs start teaching unprepared. First, the teachers need the foundational skills provided by ITT. CPDL is building upon this foundational knowledge - to build new knowledge and skills. He pointed out that in general Mauritian teachers are under-skilled.

There is ground to think that the concept of competencies is not so clear with the respondents as is the concept of CPDL itself. At the moment in the school system the stakeholders are not so conversant with the term. Teachers were not very much at ease to discuss competencies except when prompted.

7.3 RQ 3 Roles of CPDL in meeting teachers' needs

The research showed that over four-fifths of the respondents were unanimous in their views on the usefulness of CPDL in improving the quality of teaching. Through CPDL teachers learn how to tackle problems such as containing student behaviour in new situations; how to portray curriculum content and how they will expose their students' thinking when new topics are to be taught with new students either alone or in groups. Similarly, teachers learn through effective CPDL about pedagogies. However, these problems must be addressed simultaneously and continuously as teaching depends on all of them. Solving these problems lead to improvement in the quality of teaching according to the literature (Darling-Hammond, 2017; Kennedy, 2016).

Apart from the main problems pointed out by Kennedy, one of the findings was that teachers wanted to learn new skills as there were new problems occurring in the schools. Examples included: how to cope with difficult parents and motivate students (C FGI 2); learning (and teaching) 21st century skills (C FGI 3); and child psychology (Principal 2) among others. The importance of CPDL is mostly acknowledged as the world of teaching is changing and the environments in which teachers work, and the demands placed on them by society are increasingly complex (OECD, 2009). Additionally, pupils are expected to become more autonomous learners and to take responsibility of their own learning. Consequently, the education and PD of every teacher or their CPDL need to be seen as a life-long task, and be structured and resourced accordingly. This is part of being a professional which as earlier noted is a challenge.

Since the teachers have not benefited from undertaking any form of ITT, CPDL may help to improve pedagogical content knowledge (PCK). Thus teachers will benefit from thinking about teaching and learning in actual practice. PCK is about such things as the selection of topics, useful forms of presentation, analogies, illustrations, examples, explanations and demonstrations. As mentioned above, teachers might be facing challenges to portray the content of lessons to the students (Kennedy, 2016). The absence of master teachers in our schools may be the source of the problems. In Singapore, for example, master teachers help other teachers to grow (Yang, 2015). In that case Mauritius has to learn from what others have done to improve the quality of teaching. The survey data showed that very few HoDs were undertaking mentoring of their colleagues to any extent (see Table 5.6 in Appendix 9).

Thus, from the literature and what other countries have been doing successfully (Darling-Hammond et al., 2017) one can believe that in the Mauritian context it is worth trying CPDL to improve the quality of teaching in the SSSs. The NYS policy paper (MOE, 2016) does broadly mention the need for CPDL.

7.4 RQ 4 To what extent is the CPDL currently provided helping teachers to meet the identified needs?

One of the RQs was to find out to what extent the CPDL currently provided met teachers' needs. The CPDL that is currently provided to help teachers to improve the quality of their teaching are discussed in the following paragraphs.

The research revealed that one-off workshops organised by the MOE and the QAID were the most common type of CPDL provided. The vast majority of principals (88%) said that the workshops organised by the MOE were the most common type and for those organised by QAID it was 84 per cent. Site based CPDL accounted for 15 per cent. Almost half of the principals surveyed (47%) said that the workshops 'partially' influenced on the quality of teaching, while 18 per cent were of the view that CPDL would improve the quality of teaching 'very little'. The fact that principals found that CPDL would only improve the quality of teaching 'very little', much should not be expected from them, though the literature showed that principals have an important role to play in site-based CPDL. That might be a possible explanation of a low percentage of site-based CPDL (15%) in SSSs (see Table 5.2 in Appendix 9).

All the interviewees were very enthusiastic to comment on the current CPDL provided; the extent to which it was meeting the expectations and needs of teachers and how HoDs were able to improve the quality of teaching and learning. The research disclosed that the majority of teachers said that the one-off workshops were 'a waste of time' and were very critical of the resource persons responsible for dispensing these workshops. Other criticisms included lack of follow up and participants not learning in terms of their PD.

After attending a workshop the content was cascaded or disseminated to other teachers of the department for information and awareness. Principal 1 talked about how she encouraged teachers to share what they have learned at a personal level and also in workshops with colleagues. That was the practice in SSS 2, where teacher (C FGI 2) explained how what has been studied in a workshop was shared among the other members of the department by presentations in departmental meetings.

Workshops for a purpose

The majority of the participants pointed out that the workshops were not meeting their expectations. The data disclosed that teachers wanted to attend workshops from which they would learn something which will help them to improve the quality of their teaching. As noted earlier, teachers wanted to improve and become better teachers but they were frustrated since this rarely happened as a result of the workshops. For example, teacher C FGI 2 who attended many workshops complained that: 'every year we keep repeating the same problems we face but nothing happens'. Thus teachers are complaining each year about the same problems but there are no solutions to their problems. It suggests that the teachers cannot improve the quality of their teaching.

The one-off workshops are examples of standardized CPDL. The views of the teachers uncovered in the research concur with what was found in the literature review. In other words standardized CPDL is often an ineffective method for long-term skill acquisition (Gaible and Burns, 2005). The teachers are in search of skills to improve the quality of their teaching and to be better teachers and not to listen to what they already know. HoD 3 remarked that:

There is no benchmark for teachers and as a result the QAID cannot play a significant role... the QAID has not set a standard. It is collecting data and telling us what the data suggest after analysis. Instead, ... should have told us what to do. But they are doing nothing. The one-day workshop has no importance...

It seems that the one-day workshops were better used for information giving and awareness raising, rather than mastery of skills. They were not considered to be proper training sessions though the MOE calls them such. Instead they should have been more appropriately called 'one-day events' (Bubb and Earley, 2013). Principal 3 was more accurate when he called them 'briefing sessions'. One QAID inspector mentioned that one-off workshops were not very fruitful and another commented that very little could be shared with teachers and training must be ongoing. These remarks and insights concur with what Darling-Hammond et al. (2009) refer to when saying that professional learning that translates in practice cannot be accomplished in short, one-off workshops.

Furthermore, Darling-Hammond et al. (2017) reviewed 35 studies and none of them explicitly utilized a one-off workshop as their preferred model. The programmes instead spanned weeks, months, or even academic years. In fact, small amounts of repetition were only sufficient to change practice positively in very specific and narrowly defined practices, while one-off events did not have a positive impact (Cordingley et al., 2015).

Another matter of concern was the role that senior educators played in providing CPDL. In each SSS there is a senior educator who is above the HoDs and below the deputy principal in the school hierarchy as explained in Chapter 1. Senior educators are selected from educators

who have a long experience in teaching and are employed to improve the overall quality of teaching. The research showed that according to the majority of the principals they did not do that job fully. They were either doing their jobs 'partially or 'very little. On paper they are supposed to be training and advising teachers to improve the quality of teaching and as HoDs there is nothing related to training of teachers. As can be seen from Table 5.6 (Appendix 9), all the jobs that they had to do as per their scheme of work were viewed as 'partially done' or 'not at all'.

From the discussion above and from the findings, it is apparent that the one-off workshops did not help to improve the quality of teaching. In fact there was little that coincided with what is found in the literature review in Chapter 3 concerning effective CPDL practice.

7.5 RQ 5 How can CPDL be revised to meet teachers' needs and help them develop as effective practitioners?

RQ 5 was targeted to find out how the present system of CPDL can be revised to ensure teachers' needs are met and that they are able to develop as effective practitioners.

Identify needs first

The skills that teachers need to improve the quality of teaching have been discussed above and it can be deduced that the training provided has not catered for these skills. As Principal 3 pointed out there has been no needs analysis done and no gaps identified, so how can there be meaningful training? It was equally found that the teachers every year mentioned that they had the same problems which means that these problems have not been considered by the workshop organisers at the MOE or QAID or the zone. In order to propose something interesting and worthwhile to the teachers it would have been more appropriate for the MOE to know what teachers' training needs were.

Similarly, Director 1 said that identifying the needs of teachers were essential and an expert in the field who could be an experienced teacher must supplement that. This suggestion was further supported by the QAID inspector who believed that:

Teachers can acquire these skills if training sessions are organised by subject specialists. The HoDs should monitor application discussed by the specialists during the training and the senior educator should monitor the work of the former.

The research found that the training and development needs mentioned by the teachers were different from the needs identified by the principals, inspectors and directors on the teachers. This is understandable because the needs are being seen from different angles - top-down and bottom-up. It must be noted that there is a difference between the wants and the needs of the teachers. Teachers may want something but they need something else. For example

teachers may want to have ICT skills when in fact they need to develop the PCK. However, this is a personal observation.

As mentioned above from the teachers' point of view the skills they wanted to acquire or improve were related mainly to class management, communication and ICT skills. Furthermore, teachers talked of new skills that have to be considered, as there will always be new skills to be acquired (OECD 2009). Teachers wanted to know how to motivate weak students, skills to teach new subjects and the content knowledge of these subjects (C FGI 3). In fact when listening to teachers it seemed that they want to be taught how to teach which was quite legitimate, as they have never been through any relevant training since they started teaching. This is a very different experience from most other countries where teachers have to undertake ITT and participate in in-service training or CPDL.

So if they do not know much and cannot improve the quality of their teaching they are not to be blamed for their own limitations. The fault could be said to lie elsewhere. According to HoD 3 if teachers were trained on certain aspects, then they could not say that they did not know. But in the way training is currently done by MOE, there are many things that teachers do not know. He gave the example of using tablets at school, a policy introduced in 2016. That project did not even get started because of many issues, lack of training and connectivity to the Internet being the main ones. So students in all SSSs had tablets which were not used at schools.

Among the entire array of studies reviewed by Kennedy, the average positive effect from studies that assigned volunteers was stronger than the average effect among studies using mandated assignments. Thus from the literature it could be found that the workshops imposed on the teachers might not improve the quality of teaching.

Standardized CPDL/one-size-fits-all

Director 1 explained that the teachers could identify what training they wanted when filling their PMS form every year. Teachers wishing to be trained in the areas could be grouped together and trained by resource persons. According to her, resourceful persons who know about teaching and not the MIE lecturers who have never taught themselves must carry out the workshops.

HoD 3 proposed that the MOE could seek the help of private institutions for training when he talked about specialists in the field of music. He noted that schools were given musical instruments to promote music but the teachers who were supposed to do these activities were not trained. In fact I have seen these instruments in two schools I have worked in and

they are not being used. To some extent this justifies the demand of the teachers, that is, to provide good training at the right time.

The views of the World Bank consultant were also sought on the one-off workshops as organised in Mauritius as a model of CPDL. The consultant replied that:

High performing systems now focus on teacher professionalism, not one-off workshops which are 'Band-Aid solutions'. The shift is towards school-based CPDL, seeking to involve all teachers in the challenge of providing learning. The aim is to establish 'communities of learning' with teachers sharing, learning from each other. Strategies include (Japanese style) Lesson Study, action research etc.

One QAID inspector suggested that workshops with small clusters of schools would be more effective and interactive and should be done by experts in the field. Inspectors were also asked what could be done at the QAID level for CPDL activities. One said that the inspectors should be concentrating on more class visits in order to identify the strengths and weaknesses of teachers and advise on the type of training to be dispensed based on those identified weaknesses. Besides subject specialists must carry out the training.

Train the trainers

One director proposed the option that the inspectors can go for self-directed PD. The QAID is not viewed with great respect in the SSSs, very often they are criticised by teachers in the local press. From the survey carried out, the majority (84%) of principals said that QAID was one source of CPDL in their schools but nearly one-half (47%) said that it was a partial source. A further fifth (18%) considered that the help of inspectors was 'very little' and four per cent said that there was 'none at all'. This showed that much remains to be done for the QAID to be effective in terms of helping teachers to improve the quality of teaching.

When looking at the scheme of work of HoDs and senior educators one would be tempted to say that CPDL exists in our system as it exists in those countries where the education systems are praised, for example, Singapore, Canada, Shanghai. However, the findings seem to contradict what is supposed to exist. In terms of policy it looks effective but in reality HoDs and senior educators do not drive CPDL programmes. HoDs who have important professional development roles, such as to plan, implement and monitor strategies for improvement in teaching standards in close connection with the syllabus, fulfilled that role only 'to a fair amount' which implies that much more could be done.

From my own observations and experience as a principal of several schools I am not aware of any form of mentoring existing at school level. I am also not aware of a single HoD visiting the class of the members of his or her department to provide advice or talk about good practice. Also frequently there are departmental meetings which end in five to ten minutes

when they have been scheduled for 35 minutes. Very often this is because the HoDs do not know what to do to use this time productively for CPDL purposes and therefore they convert this time into a free period. This can be supported from the findings in the survey and interviews carried out. Peer coaching or peer teaching was simply not found.

However, the challenge is to change the culture of the school and the profession. Better trained HoDs can do a lot to help novice teachers by guiding them. What the HoDs have to do must be seen in the classroom through improvement in practice. The HoDs at times face the refusal of teachers in their departments to accept their advice or feedback (HoD 2). Director 2 raised the issue that teachers do not have much faith in the competencies of the HoDs and Director 1 talked about the HoD visiting class just to find faults in teaching of teachers in the department. It seems that the policy on paper exists but HoDs with all the attitudes and abilities to do the job are yet to be found. Clearly selection of HoDs on seniority is not the solution.

The HoDs are entangled in a situation where they themselves have not been trained to train others. Teachers need training and those who are supposed to train them have not been trained themselves. So the MOE or QAID must start providing the HoDs with training or ask them to follow CPDL courses in the relevant fields. In the future the MOE should appoint qualified persons and provide them with the means and time to undertake training. It is also important to make them accountable. They can be rewarded for the additional qualifications and work. It is a paradox that HoDs are selected to perform duties linked to the improvement of teaching but do not know how to do the job and they are doing it ineffectively in almost all the schools. In my view it is important for this to be researched and recommendations made. Currently, this research clearly suggests that HoDs and middle management cannot do what they are supposed to do as far as CPDL is concerned.

At senior educator level it appears that the same mistake can be identified as the one committed with HoDs. It seems to exist in the new post of senior educators which has been created. From the research it could be seen that they do their jobs of running and organizing in service training courses- only 'partially' or 'not at all' (see Table 5.6 in Appendix 9). The fact that senior educators did not perform their duties, 61 per cent of principals said that for them to provide CPDL, senior educators needed professional training (see Table 5.9 in Appendix 9). One director did not comment on the work of the senior educators and the QAID for personal reasons. I imagine he wanted to avoid criticizing his colleagues as he was only prepared to comment off record.

Director 2 mentioned that because of shortage of staff in school the senior educators started to help the principal to do the administrative work. That is the problem very often; officers do not do what they are supposed to do. In that case they helped in administration doing clerical

jobs. From my personal experience I observed that most of the HoDs and senior educators have not been trained in what they are supposed to do and that is why it is difficult for them to deliver. As teachers also lack training, to avoid conflict it is better for senior educators not to do anything. Very often so much will depend on the principals of the school to enforce the duties on the senior educators. But that may also lead to conflict and that is why in many schools there are no changes and no improvement in teaching. So much depends on the disposition of the HoDs, senior educators and principals as well as their training and leadership roles. It is quite complex as the policies are not coherent; for example, HoDs have to advise teachers but cannot visit their classes unaccompanied.

Leadership roles

From the case studies it could be found that a few models of CPDL could produce significant effects on the quality of teaching. For example, peer coaching, working in collaboration, lesson study, participating in forums; carrying out research (action research and case studies) and some forms of self-directed CPDL if well advised by people who have undergone such training.

Moreover, the role of leadership is important. Principals seem to have the possibility to drive CPDL depending on their knowledge. From the survey data collected it could be argued that for many principals it was not clear what CPDL meant and how it could be carried out. For example, when principals were asked what they did as CPDL, many said they were encouraging teachers to attend workshops and advising them to follow courses at the Mauritius Institute of Education. So the evidence suggests that principals were not very well informed of the different forms and roles of CPDL.

For CPDL to thrive at school level leadership roles must exist in the schools. It is important for the principals to act as learning-centered leaders and so too must HoDs. This can be taken as a recommendation to improve the provision of CPDL and is discussed further, along with other recommendations, in the next chapter. As mentioned in Chapter 1, HoDs have an important role to play in CPDL especially with the new NYS policy. But the findings are quite surprising as HoDs who have important CPDL roles such as 'plan, implement and monitor strategies for improvement in teaching standards in close connection with the syllabus' fulfilled that role only 'to a fair amount'.

7.6 Conclusion

The research gathered data about teachers' perceptions of CPDL both in the school they were currently working in and on CPDL in general, vis-à-vis the education system in Mauritius. The majority of the respondents were very critical of the inability of the one-off

workshops organised by the MOE and QAID to improve the quality of teaching. This concurred to a large extent with what is found in the literature concerning that particular model or type of CPDL. For many schools one-day off-site workshops was the main model of CPDL. There are several models of CPDL which have been proved to be effective and could improve the quality of teaching. Unfortunately the research found these did not currently exist in our schools. Moreover the HoDs and senior educators as well as the principals seem not to have the expertise or framework required to provide CPDL, though from the case studies some positive examples could be found. With the support of the principals, teachers could use peer coaching and work collaboratively and share teaching materials. Such CPDL models would go some way in order to improve the quality of teaching in all SSSs.

Chapter 8 Conclusions and recommendations

8.1 Introduction

This research has investigated how Continuing Professional Development and Learning (CPDL) could help teachers to become better teachers by acquiring new skills and improving their competencies. The aim was to find out the importance of CPDL in enhancing the quality of teaching and to what extent the present system was able to fulfil that role. The skills teachers wanted to develop in order to become better classroom practitioners were also explored. Evidence suggests that in the Mauritian secondary schools studied there are shortcomings in the provision of CPDL but there are also possibilities for improvement. Thus the findings of the research make it possible to make some recommendations which might be useful for policy makers to bring about changes to improve the provision of CPDL at the level of the teachers, the school and the MOE. I begin by a consideration of the wider contribution of my work.

8.2 Contribution of my work

Despite the proven benefits of CPDL in improving the quality of teaching and equipping teachers with the necessary skills (Darling-Hammond et al., 2005), not much seems to have been achieved from the actual models of CPDL in Mauritius. The new policy on education reforms (MOE, 2016) attached a lot of importance to CPDL and included it as one of the five pillars on which the education reform is built. My contribution will be to suggest how something can be put in place that will meet the needs of teachers and improve the quality of teaching. I am mostly contributing in my personal capacity as I have been a teacher and a principal for over 25 years and am now very close to my retirement. I wanted to contribute to CPDL provision and policy as I had an idea of how most of the teachers whose classes I had observed were struggling to deliver a lesson properly and I have discussed with many teachers in different State Secondary Schools (SSSs) the obstacles they faced in classroom situations.

At the time the research was undertaken (2014-16) the position could best be described as ad hoc and there was little provision for CPDL. I have investigated the issue from two perspectives - the MOE and the school. The research demonstrated that in practice HoDs were not doing enough or indeed, in many cases, doing anything in relation to their CPDL responsibilities. It seems that most HoDs do not know or understand their role in relation to professional development (PD). When this is the case, then a principal or a deputy senior leader has to take the lead. Clearly, CPDL is a leadership role. My research focused on how principals can assist 'middle leaders' (HoDs) to fulfill this aspect of their role, because without their support, guidance and help it would become a case of 'the blind leading the blind'.

However, the research did include several schools where some forms of CPDL existed and where both HoDs and principals were attempting to put the policy into practice.

While going through the literature as part of this research, I have been able to study how CPDL is being carried out in other countries and the different forms of CPDL that exist. I am fully aware of the responsibilities that teachers have and at the same time recognise that these teachers have the responsibility of educating their students without themselves having any training. Throughout my doctoral studies I have been investigating aspects of education related to training and development. This started with the modules Foundations of Professionalism, Methods of Inquiry 1 and 2, then my Institution Focused Study and finally my thesis. In some ways my contribution in CPDL attempts to provide evidence on how we can help teachers to improve the quality of their teaching and do justice to the students by teaching them better. I wanted to play a part in that since I have been a long time in the education system.

This thesis is the pinnacle for which I am proud because it will have real meaning to the teachers, HoDs, principals and policy makers. It is hoped that the recommendations will help improve CPDL and have implications for ITT which does not exist now. Highly trained teachers make a difference in the lives of students especially those who come from a poor socio-economic background. Initial training and on-going professional development should help teachers in all aspects of their work: lesson planning, assessment, subject content, teaching skills, and class management. It should also help in building self-confidence, having authority, working collaboratively, peer coaching and other skills.

The most important aim of this thesis is that it should help to inform policy makers. The study's findings provide a better understanding of what constitutes effective CPDL, and it presents evidence of the effects that PD can have on teachers' practices. It also indicates ways of connecting research, policy and practice. Teachers are in a very difficult situation being accountable for something they do not know or have been insufficiently prepared for (that is teaching effectively). They are not professionals in the way they are in other jurisdictions, they have received little or no training or support, and supply teachers have been a very quick solution to replace those teachers who are on leave. This situation leads to more frustration which was clearly seen, from the findings of my Institution Focused Study: 'we do not know what to do; why does somebody not tell us what to do?'

The findings of this study may be valuable not only to policy makers but also to teachers and to myself. I hope that with the research, I will have acquired enough knowledge and expertise to improve my leadership of PD and help the teachers in my school to improve the quality of their teaching. I will discuss the findings with the teachers and use my understanding and knowledge gained from this study to help them in starting site-based and self-directed CPDL.

The research can help to develop a national CPDL policy which might include what it might look like and what sort of things it could consist of. The provision of CPDL opportunities should be wide-ranging and include many activities for teachers to engage in. These might vary from one-day off-site workshops offered by the MOE to online activities, to regular meetings of subject-specialist teachers on assessment for learning or other activities. There is a myriad of activities which exist and are increasingly school-based.

There is evidence from this research to show that one of the main problems lies with HoDs who have official responsibility to provide CPDL but they were found to be rarely doing anything on this front. The research found that this was because they, firstly, simply do not know what they should be doing; and secondly, they often were not getting the support of their principals. The latter was often the case because the principals themselves often did not know what they had to do in relation to the leadership of CPDL.

As this thesis has shown, several reports/policies related to educational reforms in Mauritius have highlighted the need for CPDL. As there are many documents and places where CPDL is mentioned then my work will be important and helpful to make things happen - hopefully to move from rhetoric to reality. In many reports and policy papers, there is reference to quality education and teaching, the most recent being the Nine Year Schooling (MOE, 2016), where one pillar is CPDL, so my research is important and could be used to help improve the situation. The findings of this research include some important messages to policy makers. Secure generalizations can be made, as there has been a good response rate from the survey carried out.

8.3 Implications for further study

In any future study of CPDL in Mauritius, it would be important to study the work of the HoDs in more detail, for example, what are their constraints in providing CPDL and what can be done to improve its provision? The research has shown that currently they are asked to do a job which they simply do not do. So it is a policy decision which is not implemented because not all the necessary requirements exist. We could start small but begin by looking at the role itself and the time needed to fulfill this aspect of the HoD role.

Throughout the research, which took two years to complete, I have been able to spend much time reflecting on the research process. With hindsight, there are a number of areas where the research could have been improved. For example, a better interview guide would have helped to ask more pertinent questions. The lack of interviewing experience on my part was a hurdle as I am not sure if I prompted or probed interviewees sufficiently to obtain more details in some areas of the research. This could have been due to lack of concentration or confidence on my part.

When I planned to interview the QAID inspectors and directors I was looking for different views and perspectives on CPDL. I wanted this work to be useful and to inform CPDL policy and practice by finding areas which needed improvement. However, it was difficult to conduct interviews with senior officials from the MOE. I tried to seek their views but it was impossible to get their agreement for an interview. I talked to one adviser whom I thought would be very influential in policy making but at the end he did not respond to my correspondence. Also a few directors I contacted by mail did not reply. From discussions I had with my colleagues doing research, it seemed that some directors did not collaborate pretending they had no time. Very often they are afraid of reprisals from people at the top of the MOE for criticising policies which they themselves were responsible to implement - fear of self-criticism. One director told me that he did not want to voice his opinion just to avoid problems.

Nevertheless, the World Bank consultant to whom I spoke during a workshop accepted to give his opinion on CPDL (see Appendix 6). He made some interesting comments which were relevant to my research. We exchanged some emails discussing some issues and his contribution to my work was of great importance, as he knows from experience what Mauritius can and has to do. Probably he has worked in similar countries before.

8.4 Implications of my professional role and the wider professional context

The research has helped me to understand that there are many ways to carry out CPDL other than the one-day off-site workshops. The latter continue to be the main model for the MOE and QAID. The different models can be used at school to provide CPDL and help the teachers to improve the quality of teaching. In the case studies I found teachers involved in peer coaching and collaboration as a means of CPDL. However, evidence tends to show that for CPDL to be successful at school, principals have to play the leading role at the beginning as it is introducing a new culture. Evidence from the case studies shows the involvement of the two principals in peer coaching and collaboration respectively. From what I have experienced it is not difficult to start with elementary types of CPDL.

During my research, I introduced some forms of CPD in the school which I am leading. For example, I encouraged discussion among teachers on strategies to teach their subjects, particularly mathematics, and I advised teachers from the same department to introduce lesson study. Very often I invited resource persons to talk to the teachers; I made the suggestion that my school be included in a project carried out by the World Bank in connection to new methods of teaching. I have shown my intention that my school joins two other schools in the same zone to use IT to improve teaching quality. I intend to participate in some more projects once I have completed the thesis, for example, I will use some of the findings and the literature I have read to start working with some volunteer HoDs to train teachers and involve them in more classroom observations. I will also encourage peer

teaching in my school. At the same time some teachers will engage in action research to find out what teaching strategies we can use at school to improve the quality of teaching.

Also, I can involve my staff in some innovative ways of going about CPDL. For example in England, social networking has taken off (Berry, 2014). There are meetings of teachers taking place after school or on Saturdays where teachers from different schools come together and they share what they are doing, what seems to work with their students. These 'Teach Meets' usually give teachers five minutes to talk when they will share their best practices in different schools. It is a very inexpensive but effective form of CPDL. It does not necessarily involve coming together physically; it can be done through Skype or video conferencing. It is innovative in one way and also a different way in which teachers are learning about good practices. In fact the teachers in SSS 2 (B FGI 2; C FGI 2) do mention some of these ways in which teachers can learn new strategies and improve the quality of teaching.

8.5 Summary of the main findings

The main findings of the research include the following:

- The main model of CPDL, that is workshops, does not seem to provide educators with the necessary skills to improve their quality of teaching. All the participants interviewed, with the exception of three, found that the one-day off-site workshops had many shortcomings.
- It was suggested that teachers take greater responsibility for their own training. Self-directed CPDL seemed to help teachers to improve the quality of teaching when they joined online forums and learnt from colleagues and established institutions by distance learning.
- HoDs and senior educators who were supposed to lead CPDL are not fulfilling that role to its fullest.
- Principals are not in general supporting HoDs to provide CPDL. For many participants there is no difference between ITT and CPDL.
- QAID inspectors were critical of CPDL provided by the MOE, the QAID itself and the schools.
- There is a place for CPDL with teachers in the SSSs provided it is dispensed by experts in their fields; teachers learn from them; there is follow up and what is learnt is applied in the classroom.
- The QAID seems unable to do much in terms of improving the quality of teaching.
- Models of CPDL such as peer coaching; collaboration, sharing of materials seemed to help teachers improve or acquire new skill and competencies to improve the quality of teaching.

8.6 Implications and recommendations for policy makers

Four recommendations emerge from the research findings as follows:

- HoDs' selection and qualifications need to be revised, the scheme of duties have been revised but accommodating changes are needed to be able to fulfill the duties; they must be trained on a sustained basis. For example, they need to have a wide knowledge of pedagogy and be able to advise teachers expertly. Between the HoDs and the senior educators some duties are duplicated and that should be made clear or both of them work collaboratively.
- Time to be allocated for CPDL. Most of the participants said that they were meeting informally to talk about using the best strategies to teach, to deal with problems and to share teaching materials. It would be preferable to have a fixed time where they could meet and discuss aspects of CPDL. The teachers can learn from each other or the experienced teachers can share their experience with novice teachers.
- The role of QAID officers must be clear and systematic over time and not ad hoc as it is now. Experts in teaching and learning and in their fields must be hired in order to provide the proper training. It seems that the QAID inspectorate has been incapable to provide teachers with the new strategies to improve the quality of teaching.
- Workshops and other forms of CPDL should be based on the needs of teachers and dispensed by resourceful persons.

8.7 Dissemination of my findings

I intend to disseminate the findings of my research and the recommendations to QAID officers who during their visits at school very often discuss issues pertaining to PD. One of the roles of the QAID is to provide CPDL (PRB, 2013). The findings may help the QAID to reflect on the mode of PD they are providing and how it can be improved. But all depends on how receptive the QAID will be.

My findings will be disseminated in relevant conferences and journals. I intend to disseminate my work through UCL IOE prints. I will be involved in the relevant seminars in order to communicate my ideas. I will send the participants copies of my findings by email as I promised them in the invitation letter. My objective was that all those taking part in my research know what other participants have been saying and for that reason I will send them a report describing the main findings of my research in return for their time and valuable participation. In other words I will be practising the 'principle of reciprocity' (Liamputtong, 2010).

8.8 The way forward

What can we learn specifically from the case study?

The case study is unique in the sense that it was trying to show that the fact that there is no initial teacher training in SSSs in Mauritius, meant the schools studied were trying to compensate for these basic inadequacies, that is, the foundational skills which were lacking across schools as a whole because of the lack of any programme of pre-service teacher education. The case study attempted to document what these schools could do in trying to develop themselves as learning communities or PLCs. In fact the schools were establishing themselves as learning communities and communities of practice as developed by Wenger and colleagues.

Joyce and Showers (1980) pointed out how limited the effect of CPD activities are unless they combined instruction, illustration of new approaches, a chance to practise these prior to trying them out in classrooms, and sustained coaching to support a period of experimentation and implementation. From my point of view we are at the stage of experimentation now. We are having professional learning as a starting point and we do not know to what extent there is PD as viewed by Porritt and Earley (2017). Nevertheless we can start as the UK did in 1997 when a committee was set up to research how quality can be improved through research. There must also be a policy of promoting teaching as a research-informed profession for improving the quality of teaching and CPDL (Hargreaves, 1997).

The next step will be for the reports to be translated into day-to-day practices via CPDL. In 1997, the UK created the Teaching and Learning Research Programme (TLRP) to create a body of knowledge on which teachers and CPDL providers could draw. That can be done at the school level provided there is a budget (e.g. Teachers Research Grant) for CPDL as government is proposing autonomy of schools as a means to improve quality of teaching and education as it is done in Singapore.

8.9 Conclusion

The research shows that there is evidence of the need for CPDL in the SSSs in Mauritius. Teachers, as well as other participants in the research, have expressed the desire to have access to effective CPDL which meets their needs and will help them to improve the quality of teaching and learning; in sum to make them better teachers. The findings also revealed that the off-site one-off workshops organised by the MOE which currently constitute the main form of CPDL were not well received and do not seem to have had the expected results. The training of teachers would be improved if the appropriate resource persons were invited to dispense and facilitate the training. The study has shown that some models of CPDL can be provided at school level which may help teachers to acquire some skills which can improve

the quality of teaching. Thus it was important to conduct research on what the teachers need in relation to PD in order to make a meaningful contribution to the field of CPDL which will be of value both to Mauritian school leaders and policy makers.

The leadership dimension is crucial in making CPDL successful. Principals have to be in charge of the collective effort to build and facilitate the PLCs at their school by creating conditions that lead to improved learning of the students and the learning of the school staff (Dufour and Dufour, 2012). The findings reinforce the idea that the principal must support the HoDs, as the latter are not training teachers in their departments as they were supposed to do. For HoDs to be effective they need training and support from the principals and also, most importantly, the time to be able to discuss and carry out the training.

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APPENDICES

APPENDIX 1: Vacancies for Post of Educator (Secondary) (MOE)

QUALIFICATIONS

Candidates should possess:

1 (i) a Cambridge School Certificate with credit in at least five subjects including English Language obtained at not more than two sittings or passes not below Grade C in at least five subjects including English Language obtained at not more than two sittings at the General Certificate of Education “Ordinary Level” provided that at one of the sittings, passes have been obtained either:

- (i) in five subjects including English Language with at least Grade C in any two subjects or (ii) in six subjects including English Language with at least Grade C in any one subject;
- (ii) a Cambridge Higher School Certificate or passes in at least two subjects obtained on one certificate at the General Certificate of Education “Advanced Level”; and
- (iii) a degree or joint degree from a recognised institution.

DUTIES

1. To teach in State Secondary Schools or any State Post-Primary institution. Holders of a joint degree in the relevant subjects will be required to teach either of the two subjects in which they are qualified as and when required.
2. To prepare scheme of work, weekly plan of work, lesson plans to be submitted for inspection and lesson notes in respect of subjects and classes under his/her responsibility.
3. To conduct examinations, continuous assessment, extension classes vacation courses, and such other extra curricular activities as directed.
4. To take charge of laboratories, workshops or specialist rooms as and when required.
5. To keep a record of pupils’ performance to include same in pupils’ report book, and to report to Head of Department, Deputy Rector or Rector on such matters as and when required.
6. To help in the preparation and the writing of curriculum for Secondary Schools or other Post-Primary institutions and to make recommendations for the use of appropriate textbooks.
7. To ensure the overall development of students – intellectual, emotional and moral.
8. To maintain discipline inside and outside the classroom.
9. To participate in workshops and seminars to improve the teaching/learning process and to keep abreast with new trends and developments in education as and when required.
10. To give advice on matters connected with educational principles and practices at all levels and promote relevant activities.
11. To attend regular meetings with Heads of Department, Deputy Rectors and Rectors.
13. To participate in PTA meetings and activities.

APPENDIX 2: Survey Questionnaire

Principals' views on Continuing Professional Development survey

Thank you for taking part in this survey which seeks your views about teachers and their professional development. This questionnaire is anonymous and information will be treated in strict confidence. It consists of four parts: teaching skills, professional development, improvements, and good practices.

Section 1: Teaching skills

Q1. Overall, how would you rate the performance of most of your teachers in terms of the following? **(Please tick \surd one circle on each line)**

	very good	good	satisfactory	poor
Class management	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lesson planning	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Using appropriate teaching strategies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Providing appropriate feedback to students after assessments	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Using a range of questioning techniques in class	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q2. To what extent do you think professional development can help teachers improve the quality of their teaching?

Very much a fair amount partially very little not at all

Why do you say this? **(Please provide details in space below)**

Section 2: Professional Development

Q3. Which are the main type/s of professional development currently offered/available to your teachers? **(Please tick ✓ one circle on each line)**

- One-off workshops organized by the QAID
- One-day workshop organized by the MOE
- Site-based teacher professional development
- Self-directed teacher professional development
- Other? **(Please provide details in space below)**

Q4. In your view how much impact do the one-off or occasional workshops organized by the QAID have on the quality of teaching? **(Please tick ✓ one circle on each line)**

- Very much a fair amount partially very little none at all

Q5. How useful do you think teacher professional development is for the following?

(Please tick ✓ one box on each line)

	very useful	useful	of little use	of no use at all
New recruits	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Supply teachers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Experienced educators	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Heads of Department	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Senior educators	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q6 Please indicate the extent to which the HoDs in your school perform the following duties and activities. **(Please tick \surd one box on each line)**

	Very much	a fair amount	partially	very little	not at all
Participate in professional learning and development of their teachers	<input type="checkbox"/>				
Focus on improving the quality of teaching in their department	<input type="checkbox"/>				
Involved in coaching	<input type="checkbox"/>				
Act as mentors to newly recruited educators in their department	<input type="checkbox"/>				
Encourage collaborative teaching	<input type="checkbox"/>				
Monitor the implementation classroom pedagogy	<input type="checkbox"/>				
Assist the principal in ensuring that professional practice and good quality teaching are taking place	<input type="checkbox"/>				
Plan, implement and monitor strategies for improvement in teaching standards in close connection with the syllabus	<input type="checkbox"/>				

Please provide any further comments on the role of the HoD in professional development in the space below

Q7 Please indicate below the extent to which the senior educator in your school perform the following duties: **(Please tick \surd one box on each line)**

	Very much	a fair amount	partially	very little	not at all
Introduction of pedagogical programmes for quality enhancement in teacher performance	<input type="checkbox"/>				
Organize in-service training courses	<input type="checkbox"/>				
Run in-service courses	<input type="checkbox"/>				

Please provide any further comments on the role of the senior educator in professional development in the space below.

Q8. To what extent do you see the following characteristics or predispositions in your teachers overall? **(Please tick \surd one box on each line)**

	A great extent	some extent	very little	not at all
Have the ability to do the job	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Passionate about teaching	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Show professionalism	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Demonstrate a positive attitude to teaching	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Show dedication	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are always wanting to improve	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Need new skills	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have a desire for professional development	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Motivated	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q9. To what extent do you feel your school promotes continuing professional development and learning? **(Please tick \surd one circle on each line)**

Greatly	to some extent	not a great deal	not at all	not sure
<input type="radio"/>				

Please elaborate on your answer in the space below.

Section 3: Improving Professional Development

Q10. To what extent do you think the following measures will help to improve the present provision of continuing professional development and learning? **(Please tick one option in each row)**

	Very much	a fair amount	partially	very little	not at all
Provide middle Management (i.e. Deputy Rector, Senior Educator) with professional training	<input type="checkbox"/>				
In-house training delivered by the school's middle managers	<input type="checkbox"/>				
Provide the school with a budget for training	<input type="checkbox"/>				
Common free periods for teachers for sharing good practices, lesson study, observation etc	<input type="checkbox"/>				
Provide on-line or distance-learning professional development	<input type="checkbox"/>				
Employing master teachers at the school level	<input type="checkbox"/>				
the Zone having the responsibility to organize professional development for HoDs which will be cascaded to teachers	<input type="checkbox"/>				

Are there any other measures that would improve provision of professional development? (Please insert your views in the box below)

Q11. How much time do you spend on the following activities, in comparison to how much time you would like to spend on each? **(Please tick one option in each row)**

	Too little time	about right	too much time
Leadership generally	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Leadership of teaching and learning specifically	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Your own professional development	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Section 4: Good practices in your school

Q12. To what extent do the following practices currently exist in your school? **(Please tick one option in each row)**

	Very much	a fair amount	partially	very little	not at all
Mentoring	<input type="checkbox"/>				
Peer coaching	<input type="checkbox"/>				
Collaborative teaching	<input type="checkbox"/>				
Membership/affiliation to a group (e.g. Maths Society)	<input type="checkbox"/>				
Sharing of teaching strategies and skills	<input type="checkbox"/>				

Please provide details below of any other practices for improving the quality of teaching and learning in your school which you'd like to mention.

APPENDIX 3: Invitation letter (25.4.17)

Dear Principal,

My name is Prithviraj Peerthy, you may know me as a colleague who has been a Rector for over ten years in four schools across the islands. I am currently studying part-time for a doctorate at University College London, Institute of Education. I am writing to seek your participation in the following research project:

“Continuing professional development and quality of teaching: a case study of State Secondary Schools in Mauritius”.

The research commences with a survey of all State Secondary Schools and I'd be most grateful if you would complete the attached survey which should take no more than 10-15 minutes to complete.

I wish to find out what teaching skills you think teachers should acquire through professional development and how the government and the school can best support teachers in this respect.

All information collected from the survey will be kept strictly confidential and the names of schools and respondents will remain anonymous.

I do hope you will agree to participate by completing the questionnaire. I am very interested to know your views on this very important topic. I will be happy to send you a summary of my main findings once the research is completed. If you have any questions, please contact me on prithvirajpeerthy@yahoo.co.uk.

Please sign this form to indicate that you are willing to be part of the project.

Name.....

Signature..... Date

Best wishes

Prithviraj Peerthy

Rector, Bon Accueil State College

APPENDIX 4: Interview schedule (principals)

1. Give me some examples of **good practices** in your school icw teacher professional development.
2. What **competencies and skills** the teachers need to acquire further to improve the quality of teaching?
3. How can **these competencies and skills** be provided to the teachers? Who will do it? How can HODs help? How can the senior educator help? Are they able to provide training in your school?
4. How do you view **continuing professional development and learning**?
5. What **kinds of continuing professional development** will help teachers to become better at what they are doing now?
6. Why, according to you, will this make them better?
7. What **types of CPD** do teachers benefit in your school (or in Mauritius)?
8. Give me your views on the present forms of CPDL that **the QAID and the MOE** is providing to teachers?
9. What do you think of the **one-off workshop** provided by the MOE and QAID? Its advantages and disadvantages.
10. From your point of view how can the **present system of CPD** be improved in order to meet the needs of the teachers? Should it be integrated in the school timetable? Can middle management at school do it? Can they do it? Do they need additional training? Should we have recourse to experts in the field?
11. What can be done at the QAID and MOE level?
12. What can be done at the **zone level to provide CPD**?

APPENDIX 5: Participants

Participant Code	Name and Category of School type Regional(R) National (N)	Years of experience	Subject taught
PRINCIPAL 1	SSS 1 (R)	2	N/A
PRINCIPAL 2	SSS 2 (R)	5	N/A
PRINCIPAL 3	SSS 3 (N)	5	N/A
HoD 1	SSS 1 (R)	17	Physics
HoD 2	SSS 2 (R)	14	English
HoD 3	SSS 3 (N)	17	Physics
DIRECTOR 1	MOE	N/A	N/A
DIRECTOR 2	MOE	N/A	N/A
RESPONDENT A (FGI 1)	SSS 1 (R)	5	Travel and Tourism
RESPONDENT B (FGI 1)	SSS 1 (R)	12	Mathematics
RESPONDENT C (FGI 1)	SSS 1 (R)	1	Economics
RESPONDENT A (FGI 2)	SSS 2 (R)	17	Chemistry
RESPONDENT C (FGI 2)	SSS 2 (R)	17	French
RESPONDENT B (FGI 2)	SSS 2 (R)	10	Chemistry
RESPONDENT A (FGI 3)	SSS 3 (N)	17	Art and Design
RESPONDENT B (FGI 3)	SSS 3 (N)	17	DC DT
RESPONDENT C (FGI 3)	SSS 3 (N)	15	Computer science
QAID INSPECTORS	Not applicable	About 5 years	Not applicable

APPENDIX 6: World Bank consultant

Dear P.

Some Responses (from the World Bank Consultant)

What essential skills and competencies teachers must acquire to improve their teaching qualities?

1. A)

The problem faced by Mauritian teachers, especially in high schools is that they start off teaching unprepared. It is essential that the foundational knowledge and skills provided by initial teacher training is there first; PD is building upon this foundational knowledge- to build new knowledge and skills.

B)

Upon this weak foundation-which largely explains poor student performance at present – you have an ambitious reform agenda. Your present teacher cadre is not up to delivering reform objectives. PD is thus crucial.

In Mauritius it is very common by the MOE or the QAID to organize one-off workshops as of CPDL), what are your views with this form of CPDL?

2. High performing systems now focus on teacher professionalism, not one-off workshops which are 'Band-Aid solutions'. The shift is towards school-based PD, seeking to involve all teachers in the challenge of providing learning. The aim is to establish 'communities of learning' which teaches sharing, learning from each other. Strategies include (Japanese style) Lesson Study, action research etc.

What kinds of CPDL will help the teachers in State Secondary Schools (SSSs) in Mauritius improve their quality of teaching?

3. Those who provide support in teachers' learning are those with deep experience of the actual practice of teaching. Thus, experienced teachers – called Master Teachers in Singapore are best, not University Professors or Management Coaches.

Talking on the small islands and the work you have done in these places as a consultant how important is CPDL to these systems and why?

4. In Singapore, more attention is being paid to schools and teachers deciding what professional development is needed to meet school improvement goals, to decide on their providers e.g. British Council and to establish a Teachers Academy to spearhead teacher-owned and directed CPDL. Even teachers unions are roped in to contribute.

In Mauritius teachers are very keen to take advantage of CPDL but there are few opportunities available to them in what ways can that situation be addressed? What would be your suggestions?

5. No offence intended but in general Mauritian teachers are under skilled. Strengthen initial teacher training; enable beginning teachers to be coached and mentored by experienced teachers with a positive mind-set. Establish a Teacher Learning Growth Plan which establishes the knowledge, skill standards that beginning, novice and experienced teachers should aim towards. Provide each teacher with a training

entitlement, say 50 hours per year, paid for by the Ministry and allow teachers some distraction.

With the NYS policy, there is a program of CPDL which underpins that and in your view is that the most appropriate way of doing it?

6. Finally, a team of experienced rectors, inspectors and teachers are needed to establish the knowledge, skills, dispositions the new reform will require and to develop a plan to meet them.
7. Look at the HEAD Foundation's website www.headfoundation.org You will find there are some useful material on professional development in the various Workshop Reports.

I hope this helps...
Prof.

APPENDIX 7: Data display and coding

RESPONDENT ID	OPEN-ENDED QUESTIONS -RESPONSES	CODES
R1	They learn about techniques of teaching and class management as well as assessment which is very useful.	Improve teaching (teaching skills)
R2	Keep up with the new trend of teaching/ more use of technology in teaching and learning.	CPD/ teaching strategies
R3	Professional development with a hands on perspective provides the educator with new avenues of thinking and promotes reflective practice	Self-efficacy/reflective practitioner
R4	Teaching is a very dynamic vocation. Teachers need to keep abreast of new ways of doing things. Professional development will encourage teachers to adopt new ways of teaching	new teaching skills
R5	Exposure to new technologies (teaching tools) and teaching strategies that can be used to enhance teaching and learning. In depth knowledge of child psychology will help teachers relate to students , win their trust and respect. This will result in better teaching and learning.	Teaching skills Interpersonal skills
R6	Many teachers join service with little or no training	Need for PD
R7	Senior teachers need to constantly upgrade their skills . As for those straight from the university or one supply teacher, they must develop pedagogical skills and need to be more in touch with the real classroom situation. They are dealing with 21 st century learners and have to inculcate 21 st century skills.	Professional development Improving pedagogical skills
R8	Educators need to be exposed to teaching techniques of the digital age. Adopting new approaches to teaching and communicating with students, assisting them in foraging for reliable info from databases.	Peer coaching /pedagogical content knowledge
R9	It is important for the educators to constantly reflect upon their practice so that they can assess their own strengths and weaknesses and thereby amend on those for the betterment of their professional standards.	Reflective practitioner
R10	PD will give teachers more confidence in class. They will equip themselves with the latest tools techniques and trends in the education sector.	Building confidence- personal efficacy
R11	It depends on the subject taught. At times professional development does not weigh much against students' indicating to grasp and master a topic/aspect/chapter	
R12	Professional development provide Teachers with new techniques to enhance their teaching abilities, management of students with learning difficulties and assessment through various methods.	Improving teaching skills Evaluation and feedback
R13	Most of our teachers have not followed any professional development course or have forgotten what they learned in their pedagogy classes decades ago.	Need for training CPD

R14	In the case of new recruits induction course is a necessity. For more experienced teachers, refreshers training keep them to review their teaching strategies and share best practices .	Induction courses Teaching strategies Sharing of best practices
R15	Exposure to others Sharing	Sharing
R16	<i>Teachers will then participate to learn content or skill-based information that is intended to help them on topics ranging from instructional practice to class management.</i>	Content knowledge Class management
R17	They will have a critical approach and more motivation to improve with a sound theoretical basis. Continuous professional training will have more meaning, as it will be grounded on experience in the field.	Critical thinking Experiential learning
R18	PD will help teachers to go deeply into the subject matter , thus allowing learners a clear picture of the programme. Learners will also be exposed to new examinations techniques	content and teaching skills
R19	New approaches and strategies will enhance teaching especially while teaching the new generation of students.	Teaching skills
R20	PD programs provide opportunities for: <ul style="list-style-type: none"> • increased knowledge through research • update of teaching trends and methodology • practice of new skills and • utilisation of latest available material, research findings and technology 	improve content Teaching skills Use of research findings
R21	To be updated on innovative pedagogies and new findings on educational psychology	Instructional strategies
R22	when there is CPD, teachers will be aware of new educational theories, tools and techniques that are available which they can use in class for effective teaching.	Improve teaching skills
R23	Awareness of new skills/ self improvement	Self-efficacy
R25	level of commitment of educators has gone down over the years, many have become teachers by default; others lack motivation.	Lack of predisposition
R26	teachers should always be learning . There should be differentiated teaching. Teachers must know the aptitudes of each pupil. Teachers should background-social and economic- of each child.	CPD Student profile
R27	teaching requires certain skills , which, without PD, will be learnt through experience over a long period of time.	Coaching v/s experiential learning
R28	Educators do not experiment or tap their potential; too bookish	

R31	To keep abreast of new trends (pedagogy, technology, curriculum)/to enhance their knowledge to enhance teaching and learning/ to be better equipped , keep pace with rapid changes occurring.	Content knowledge Teaching skills New instructional strategies.
R32	<i>PD, which is of high quality, serves to deepen the content knowledge and pedagogical skills of teachers. It gives opportunities for reflection and thus help improve the quality of teaching.</i>	Improving pedagogical strategies Reflective practitioner
R33	The rapport between teacher and students is challenging and demanding due to changes in education.	Interpersonal skills
R34	they will be aware of various techniques available.	Improving teaching skills
R35	they will learn about new developments in the field; will be more motivated in their job; will want to practice what they learnt, can share their views and experiences with others. Teaching becomes more dynamic and not static.	Good practice Sharing of views
R36	Teachers must keep abreast of all changes and adapt accordingly. The teacher who is better prepared will find the job less difficult. It will improve the lifestyle of the educator and his family	Personal efficacy
R37	Need for training in the field to gain update on expertise of teaching- learning strategies and reinforce their mastery and skills	Teaching skills
R38	teachers to be appraised of new developments, new techniques and new challenges	Teaching skills
R39	teachers have hardly had any professional training about teaching	Need for training
R40	PD will help teachers to be up to date with all new developments and innovative teaching strategies, tools, aids and support.	New teaching skills
R41	<i>more engagement on the part of teachers; exposure to modern trends in education/ teaching and learning process; modern methods/ innovative practices; often after being recruited, teachers/ educators are left on their own and they continue using the same strategies, nor are they helped for their PD.</i>	Teaching skills
R42	with improved skills, they will deliver more efficiently	Teaching skills
R43	PD is focused on specific aspects of teaching; add to it peer teaching, presentations and discussion with sharing of good practices help.	Teaching skills Peer teaching Good practices
R44	Keeping pace with current trends in the education field certainly impact upon the teaching skills of the teacher as a reflective practitioner.	Teaching skills Reflective practitioner
R45	help teachers to adopt new techniques	Teaching skills

R48	enlarge existing vista of knowledge and content; by providing new technologies; enhance analytical skills and techniques; provide parameters and benchmarking in variety of knowledge and experimental areas; allow comparative simulation of pedagogical alternatives.	Improving skills
R49	It can help teachers keep abreast with updates on the latest teaching and learning strategies due to the shift in paradigm towards use of new technologies and ICT-mediated teaching and learning, provided there is greater provision for added motivation towards personal improvement for professional development to become continuous	Improving practice

APPENDIX 8: Invitation letter (Educators)

Dear Educator,

My name is Prithiviraj Peerthy, you may know me as a colleague who has been a Rector for over ten years in four schools across the islands. I am currently studying part-time for a doctorate at University College London, Institute of Education. I am writing to seek your participation in the following research project:

“Continuing professional development and quality of teaching: a case study of State Secondary Schools in Mauritius”.

The research commenced with a survey of all State Secondary Schools and I'd be most grateful if you would participate in the second phase. I would like to conduct a semi-structured interview and I am inviting you to take part. The interview will last for less than one hour.

I wish to find out what teaching skills you think teachers should acquire through professional development and how the government and the school can best support teachers in this respect.

All data collected will be kept strictly confidential and the names of schools and respondents will remain anonymous.

I do hope you will agree to participate by completing the form below. I am very interested to know your views on this very important topic. I will be happy to send you a summary of my main findings once the research is completed. If you have any questions, please contact me on prithivirajpeerthy@yahoo.co.uk.

Please sign this form to indicate that you are willing to be part of the project.

Name.....

Signature..... Date

Best wishes

Prithiviraj Peerthy

Rector, Bon Accueil State College

Appendix 9: Survey findings

Table 5. 1: Teaching skills

Teaching skills	Very good %	Good %	Satisfactory %	Poor %
Class management	2	53	43	2
Lesson planning	-	51	45	4
Using appropriate teaching strategies	-	18	73	8
Providing appropriate feedback to students after assessments	6	29	55	10
Using a range of questioning in class	-	31	57	12

(n= 49; non-responses = 0)

Table 5. 2: CPDL and quality teaching

Categories	Per cent
Very much	61
A fair amount	34
Partially	4
Very little	-
Not at all	-

(n= 49); non-responses=0)

Table 5. 3: Types of CPDL

Types of CPDL	Per cent
One-off workshops organised by QAID	84
One-off workshops organised by MOE	88
Site-based CPDL	15
Self-directed CPDL	63
Other	-

(n=49; non responses=0))

Table 5. 4: Types of CPDL in schools

Types of CPDL in schools	Very much %	A fair amount %	Partially %	Very little %	Not at all %
Mentoring	2	47	37	12	-
Peer coaching	4	25	43	25	2
Collaborative teaching	4	31	39	9	6
Membership to a group (e.g. Maths Society)	-	10	29	41	18
Sharing of teaching strategies and skills	2	22	47	27	-

(n=49; non-response=0)

Table 5. 5: One-day workshops and quality of teaching

Scale	Percentage
Very much	10
A fair amount	20
Partially	47
Very little	18
None at all	4

(n=49; non-response=0)

Table 5. 6: Staff and CPDL

Teachers	Very useful (%)	Useful (%)	Of little use (%)	Of no use at all (%)
New recruits	86	12	2	-
Supply teachers	74	20	6	-
Experienced educators	22	65	10	2
HoDs	31	59	8	2
Senior educators	27	51	18	1

(n=49; non-response =0)

Table 5. 7: Extent to which HoDs fulfill their duties

Duties of HoDs	Very much (%)	A fair amount (%)	Partially (%)	Very little (%)	Not at all (%)
a) Participate in the CPDL and learning of their teachers	4	37	25	35	-
b) Focus in improving the quality of teaching in their department	6	42	36	14	-
c) Involve in coaching	2	31	37	29	2
d) Act as mentors to newly recruited educators in their department	10	33	41	14	2
e) Encourage collaborative teaching	8	35	31	22	4
f) Monitor the implementation of classroom pedagogy	2	25	41	22	10
g) Assist the principal in ensuring that professional practice and good quality teaching are taking place	2	22	43	29	4
h) Plan, implement and monitor strategies for improvement in teaching standards in close connection with the syllabus	6	37	35	20	2

(n=48; non response=1)

Table 5. 8: Duties of senior educators as viewed by principals

Duties as per scheme of work of senior educator	Very much %	A fair amount %	Partially %	Very little %	Not at all %
Introduction of pedagogical programmes for quality enhancement in teacher performance	6	27	29	20	16
Organize in-service training courses	-	2	12	25	59
Run in-service courses	-	4	10	22	61

(n=48; non-response 1)

Table 5. 9: Provision of CPDL in schools

	Frequency	Per cent
Not sure	1	2
Not at all	1	2
Not a great deal	12	25
To some extent	28	57
Greatly	7	14
Total	49	100

(n=49; non response=0)

Table 5. 10: Measures to improve the present provision of CPDL

Measures	Very much %	A fair amount %	Partially %	Very little %	Not at all %
Provide middle Management (i.e. Deputy Rector, Senior Educator) with professional training	61	30	8	-	-
In-house training delivered by the school's middle managers	43	31	27	-	-
Provide the school with a budget for training	57	29	8	2	4
Common free periods for teachers for sharing good practices, lesson study, observation etc.	51	34	10	2	2
Provide on-line or distance-learning professional development	46	34	18	-	-
Employing master teachers at the school level	35	45	16	-	4
The Zone having the responsibility to organize professional development for HoDs which will be cascaded to teachers	53	22	16	6	2

(n=49; non response=5)