



Title: A pedagogically-informed model of Massive Open Online Courses (MOOCS) for Mauritian higher education

Name Sharvaani Devi Ramkissoon

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**Title of Thesis: A pedagogically-informed model of Massive Open Online Courses  
(MOOCs) for Mauritian Higher Education**

**By**

**Sharvaani Devi Ramkissoon**

**A thesis submitted to the University of Bedfordshire, in fulfilment of the requirements  
for the degree of PhD in Education**

**Name of University: University of Bedfordshire**

**Name of Research Institute: Institute for Research in Education**

**October 2017**

## **Author's Declaration**

I, Sharvaani Devi Ramkissoon, declare that this thesis and the work presented in it are my own and has been generated by me as the result of my own original research.

### **A pedagogically-informed model of Massive Open Online Courses (MOOCs) for Mauritian Higher Education**

I confirm that:

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## Abstract

The purpose of this research was to determine how MOOCs (Massive Open Online Courses) can be introduced and implemented in Higher Education institutions in Mauritius. The study explored the perspectives of students, teachers and educational leaders using an exploratory case study approach, and involved the implementation of short MOOC-based courses in three areas of higher education in Mauritius. While much of the existing literature on MOOCs has used quantitative data to explore patterns of enrolment and retention, this study explicitly focused on student experience, and used Garrison, Anderson and Archer's (2000) Community of Inquiry (COI) model to explore patterns of 'presence' and pedagogical preferences and needs of learners. In order to explore how these preferences, together with other contextual factors might affect the adoption of MOOCs in Mauritius, Venkatesh and Davis's (2000) Technology Acceptance Model<sup>2</sup> (TAM<sup>2</sup>) was used. The COI and TAM<sup>2</sup> models were used both as analytical frameworks, but also to develop a new composite model that also can function as a boundary object (Bowker and Star, 1999; Fox, 2011) enabling different stakeholders to understand each other's needs and expectations and communicate better with each other.

For Mauritian learners, teaching presence in online environments is of critical importance: this is reflected in different scenarios of MOOC implementation identified, and in a proposed staged model for MOOC adoption across the HE sector in Mauritius. This involves further pilots and preliminary research (stage 1), integration of MOOCs into practice (stage 2), customisation and development of MOOCs (stage 3) and a MOOC for Mauritius (stage 4), with each stage informing the implementation of subsequent stages as part of a broad action research framework. The original contributions made by the research to the knowledge base of its possible audiences include: providing models of practice for teachers and educational leaders; informing the educational leaders and policy makers about how MOOCs can be

successfully implemented in Mauritius; providing detailed case studies on MOOCs to the academic audience interested in MOOCs specifically; and proposing a new composite, pedagogically-informed, technology acceptance model to those academics who are interested in online pedagogy and technology acceptance. The results of this PhD research can also inform the introduction and effective implementation of MOOCs in other less-economically developed countries.

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# **Chapter 1: Introduction**

This study explores how current e-learning technologies, and in particular Massive Open Online Courses (MOOCs) can be useful for learners to access higher education in Mauritius. Mauritius is a small island in the Indian Ocean with no natural resources. Consequently, the only resource that the country can depend on to develop its economy is human resource. Therefore, I believe that finding ways to encourage Mauritian people from all social classes to develop their skills is important. MOOCs are essentially free online courses. Through my research, I wanted to see how the online pedagogy of MOOCs fits in how Mauritians learn, suggest a new or adapt the current pedagogy to suit Mauritians and recommend steps that policymakers can take to have a successful and effective implementation of MOOCs in Mauritius. In that, the Mauritians will be able to have another route to access learning that they require or want.

## **1.1 E-Learning, Virtual Learning Environments and MOOCs**

The development and adoption of MOOCs can be seen as one of the latest phases in the development of technology enhanced learning or e-learning. E-learning has become an increasingly important part of higher education and forms an integral part of the long term strategic plans for the success and financial viability of many higher education institutions, either as part of blended learning approaches supporting students attending institutions, or through entirely online provision.

Codone (2001, p. 1) defines e-learning as "...any type of learning delivered electronically. ...broadly, this can encompass learning products delivered by computer, intranet, internet, satellite or other remote technology". Although the development of the internet transformed e-learning, other forms of distance e learning using mail systems, television and digital content on CD-ROMs did exist prior to its development. Rheingold (1993) discusses these

and the impact of the emergence of the internet in education more widely. It was with the development of the World Wide Web and associated technologies such as browsers and online multimedia systems in the mid 1990's that e-Learning began to be more widely adopted.

Cross (2004) elaborates on the history of e-learning, from computer based training (CBT) in the 1980s's and training based on CD-ROM content, commenting that anything which had the slightest connection with the internet was termed 'e-learning'. It was with the need for improved tracking of student progress that learning management systems (LMS) came about, providing institutions with information such as how many students were enrolled, how many were participating and how many achieved. Blended learning has also been a key actor in e learning.

In my research, I define blended learning as containing both face to face and electronic learning. The degrees of face to face and electronic learning can vary. Blended learning is a tricky one to define (Friesen, 2012). The word blended itself implies mixing. So we know that there will be a mix of some elements. The tricky part is to decide what elements are being mixed. If we consider blended learning itself, it can mean blending different teaching methods (Clark, 2003 cited by Friesen, 2012). However, Graham (2006, cited by Friesen, 2012) added the word systems to blended learning to then state that a blended learning system is a combination of face to face and learning technologies. The two models, that Friesen (2012) suggested as being useful in higher education, encompass my definition of blended learning. I see the rotation model and the enriched-virtual model that he describes as being two ends of a spectrum for blended learning systems. On one hand, we have the rotation model, where the focus is the face to face sessions with the use of technologies to enrich the learning experiences of the students. On the other hand, the enriched-virtual model has the technology as the central point of instruction, with face to face sessions linking the learning journey of the students to make it successful as a process. I have taken

this idea of having varying degrees of using technologies and face to face interactions to describe my understanding of blended learning. In line with what I think blended learning is, the use of Virtual Learning Environments (VLE) becomes crucial to explain.

A significant institutional response to the availability of web technologies was the widespread adoption and development of VLE. Weller (2007) defines a VLE as being a platform where learners can use the different tools available to go through the content on the online course and achieve the targets required. With the emergence of Web 2.0 technologies, Anderson (2007) states, a new set of features was introduced which enhanced the effectiveness of VLE's. Anderson (2007, p. 7) mentions that Web 2.0 brought about "blogs, wikis, multimedia sharing services, content syndication, podcasting and content tagging services", and explains their functions, limitations and benefits for higher education institutions and their teachers and students.

Another important development that contributed to the development of VLE's and other online environments, as well as the pedagogical approaches they supported was improvement in internet connectivity: increased coverage, bandwidth, speed and reliability. These improvements have increased the ability of students to access online content, particularly that which requires synchronous activity (such as audio or video chat) or high-bandwidth multimedia content (such as video lectures and immersive content).

At the same time, higher education has been opened up to a wider range of participants and providers, some of which offer only e-learning. Lifelong-learning, self-training and portability of qualifications have become more significant. Global brands in higher education such as MIT and others have been keen to maintain their influence, with Open CourseWare at MIT being an important indicator of the way in which things have changed. Open courseware are course designed by MIT which are available to anyone who wants to study that course (Katz, 2010).

This is part of the background against Massive Open Online Courses (MOOCs) have emerged. The Literature Review will discuss MOOCs in more detail but a short outline will be provided here. MOOCs, as the name suggests, are offered to large numbers of students ('massive'); are 'open' (meaning that enrolment is not contingent on pre-requisites or entry requirements); and online. Initial models of large-scale, free, open courses (the emergence of MOOC is conventionally dated to 2008) have subsequently been joined by new business-driven models which try to reconcile the new patterns of engagement outlined above with guarantees of quality. The potential for MOOC development and deployment in developing educational systems has been less well studied, however. Although there is an optimistic rhetoric of global educational access enabled by MOOCs, there have been few studies of how they might be deployed and integrated into specific educational settings, and fewer still that explore teacher and student perspectives alongside those of educational providers.

The literature on MOOCs has informed the research topic in terms of the gaps that need to be addressed. Firstly, there is substantial research conducted on low completion rate (for example Daniel, 2012; Jordan, 2014; Sunar, White, Abdullah and Davis, 2016). However, there is less research on students' perspectives relating to the use of MOOCs. In that, pedagogy is not yet seen as a possible reason for low completion. Indeed, it is clear from Panchoo's (2015) argument that there is a need to look into the online pedagogy of MOOCs. Nonetheless, there is no discussion about contextualising the MOOC pedagogy to ensure its effective implementation. This PhD research shows how a mismatch in what the learners need online and what they experience leads to them not wanting to complete the MOOC. Furthermore, by exploring the view of students it contributes to the scarce, but important, qualitative research on MOOCs. Secondly, this PhD research suggests how different business models can be tested at different stages of MOOC implementation (chapter 8) to inform the choice of the model that will fit the context best. Additionally, the research adds to the second generation MOOC research which comes after the initial hype. Indeed, it critically analyses how MOOC can be implemented in Mauritius by identifying possible hurdles and



suggesting solutions based on empirical evidence. Finally, so far in literature, there is no research on the importance of multiple stakeholders in the successful implementation of MOOCs. The model resulting from the research enables the reader to see the implementation of MOOCs as a process involving many stakeholders who have to communicate with each other for MOOCs to be utilised effectively.

## **1.2 A MOOC for Mauritius?**

This thesis explores the potential for MOOC's to be implemented in the context of Mauritius, an island nation about 2,000 kilometres off the coast of south-east Africa, with a population of approximately 1.3 million. This population is characterised as multi-ethnic, multi-religious, multicultural and multilingual, in part a reflection of a history of colonial rule by the Dutch Republic, France and the United Kingdom, as well as its strategic position at the intersection of important maritime routes. After independence in 1968 and subsequently the declaration of a Republic in 1992, the economy of Mauritius continued to develop to become a middle-income diversified economy (Organisation for Economic Cooperation and Development, 2007). Currently, the main pillars of the Mauritian economy are textiles and tourism, although offshore services are also thriving, and the financial sector is growing. It is important to give a context about the use of language in Mauritius.

As a result of the colonisation periods, Mauritius has two official languages: English and French (Bissoonauth, 1998). It is to be noted that although the census of 2011 shows that most Mauritians speak Creole at home, it does not mean that they cannot speak English or French. While the English language is used for official documents, in education and at the workplace, formal interactions are also done in French. Indeed, Mauritius remains a multilingual society. Therefore, for the MOOCs suggested in this PhD research, there is no language issue because the targeted students are those who have been through the Mauritian Education System and have studied in English. However, if the implementer targets students who have not been in education or employment for a long time, there may

be language barriers which may be overcome via the blended approach suggested in chapter 8. When focusing on the Mauritian context with regards to courses available online, a review of existing e-learning in the country is essential.

E-learning is a sector that is growing in Mauritius both in secondary and tertiary institutions. Most secondary schools in Mauritius have a computer laboratory, especially those which offer computer science as a subject. There are even secondary schools offering courses online as discussed by Pudaruth, Moloo, Mantaye and Jannoo (2010). Also, the country has a number of VLEs being used. In terms of the educational sector, platforms are used mainly as resource and information centres such as the “First Educational Portal of Mauritius” and “Computer Science and Engineering Moodle Platform”, among others (Pudaruth et al, 2010, p. 4-5). The authors also mention the VLE developed by the University of Mauritius to deliver online courses. Such an existing online infrastructure will play a vital role in the implementation of the recommendations that are made in this thesis in chapter 8.

The thesis offers insights into educational technology development and pedagogical practice, specifically related to MOOCs, and in the particular context of Mauritius, by synthesising elements of two established models: Garrison and Anderson’s ‘Communities of Inquiry’ (2003) and developments of the Technology Acceptance Model (TAM) originally introduced by Venkatesh and Davis (2000). This synthesis is used both as an interpretative framework and to develop a set of recommendations to inform policy and practice in relation to the adoption of MOOCs in Mauritius. The overall objective of the thesis, which will be revisited in the light of the literature review and findings, is:

“To offer an evidence-based assessment of the potential of MOOCs in Mauritian Higher Education and to make recommendations about features that will address any challenges identified and contribute to their adoption, student enrolment, retention and positive learning experiences and outcomes.”

The originality of the thesis and its contribution to knowledge stems from the fact that few studies have been conducted exploring how MOOCs might be implemented in developing country contexts; from its focus on learner experience of using MOOCs; and from the synthesis of the two established models.

### **1.3 An Overview of the Thesis Structure**

The thesis presents, in Chapter 2, a review of several related areas of research literature: a discussion of the Mauritian context; the emerging literature on MOOCs; that relating to e-learning and pedagogies in general (within which Garrison and Anderson's COI model is located along with other frameworks); and literature on technology acceptance and adoption. This literature is then used to position the research and identify a series of research objectives and questions. The theoretical framework of the research, which is defined as predominantly qualitative, phenomenographic and interpretivist in character, is then presented (Chapter 3) together with a discussion of the two models (COI and TAM). This is then followed by a description and discussion of the mixed-methods, multi-phase research design that was developed (Chapter 4). Chapter 5 presents data collected in pilot and main studies, including an audit of MOOC platforms and student surveys and interviews. Chapter 6 offers interpretation of the data from the interviews with educational leaders and policymaker and the teachers. The chapters 5 and 6 identify themes and patterns related to the elements of the Community of Inquiry Model, and Technology Acceptance Model.

Chapter 7 presents a synthesis of the two models that, it is argued, functions as a boundary crossing object between different stakeholders in e-learning, and will help inform the development of any potential MOOC in Mauritian Higher Education. Chapter 8 suggests stages for the implementation of MOOCs. It also discusses the limitations of the research and opportunities for further research, while highlighting where there is currently inadequate and incomplete knowledge and where further research might be required to inform evidence-based decision making about e-learning strategies and pedagogical practice. The thesis concludes by elaborating on how the research objectives have been achieved and the

original contributions made by the research to knowledge on MOOCs, online pedagogy and technology acceptance. The last part of the conclusion chapter is a reflection on the research journey of the researcher and a final note on the research outcome.

The intention is that this thesis will contribute to the educational decision making process for students in the Higher Education Sector in Mauritius, as well as to broader debates about the development of e-learning technologies and the pedagogies with which they are associated. The design and conceptualisation of the study means that, unusually amongst studies of MOOCs, it considers teacher and learner perspectives alongside business models, and as such, the thesis will fulfil a 'boundary-crossing' function, enabling multiple stakeholders in e-learning to develop greater understanding of each other's concerns and of the potentials and challenges they see in these emerging technologies. This leads us to the research aim and objectives

#### **1.4 Research aim and objectives**

The research aim is to offer an evidence-based assessment of the potential of MOOCs in Mauritian Higher Education and to make recommendations about features that will address any challenges identified and contribute to their adoption, student enrolment, retention and positive learning experiences and outcomes. The research will therefore seek to achieve four key research objectives:

1. To explore the importance attached to indicators, (as defined by Garrison et al, 2000) by Mauritian HE (Higher Education) students
2. To explore the extent to which specific presence indicators contribute to attitudes towards and acceptance of e-learning environments including MOOCs
3. To review the extent to which current MOOCs allow specific presence indicators and technology acceptance factors to be implemented
4. To offer an evidence-based assessment of the potential of MOOCs in Mauritian HE and to make recommendations about features that will address any challenges identified and contribute to their adoption, student enrolment and positive learning experiences.

## **Chapter 2: Literature Review**

This chapter will review a number of literatures which, together, provide a framework for the study and the remainder of the thesis. Section 2.1 through 2.5 focus on technological developments; sections 2.6 and 2.7 are concerned with pedagogical models; and the remainder of the chapter with models of technology acceptance and contextual issues.

### **2.1 E-Learning in Higher Education**

In the current age, no sector is immune from the use of digital technologies. The Higher Education sector has seen a wide range of digital tools ranging from personal technologies to large-scale online platforms being used into enhance learners' learning experience (Shopova, 2012). However, it is important to remember that e-learning was not a sudden development in the provision of higher education, and what we see today is the latest stage in a process of development and adoption of new technologies and pedagogies that accompany them and labels such as 'distance learning', 'e-learning' and blended learning have evolved with the development of technologies intended to support and enhance learning.

#### **2.1.1 Distance Learning and E-Learning**

According to Willis (1994), distance learning involves teacher and the learner are separated by a distance (beyond that of a classroom), but this does not, of course require digital technologies: it is, therefore, important to differentiate between distance learning and e-learning. Distance learning predates the introduction of multimedia and originated through correspondence study carried out via postal services (Pandey, 2013). With the introduction of radio and television, distance learning evolved with lectures being delivered through these media, alongside paper-based activities and, in some cases, face-to-face meetings between teachers and students.

At the same time, computer based learning and training began to evolve, first using content delivered on tape, disk and then CD-Roms in the mid-1980's, and then using emerging network technologies (Cross, 2004). With the introduction of internet technologies and the World Wide Web in the 1990s, the term electronic learning or e-learning, came into common use. Codone (2001, p.1) defines e-learning as "...any type of learning delivered electronically ... broadly, this can encompass learning products delivered by computer, intranet, internet, satellite or other remote technology". So e-learning can be thought of as a development of distance learning but with the use of electronic hardware and software. Codone's (2001) broad definition embraces the use of different technologies as part of e-learning and thus is appropriate for the purpose of this research. The appearance of e-learning, and more particularly the World Wide Web, also led to development of the blended learning approaches that already combined radio and television, postal, and face-to-face teaching and learning.

### **2.1.2 Blended Learning**

Blended learning has been defined in many ways: mixing different pedagogies, blending job tasks online and more recently, combining e-learning with face to face sessions (Friesen, 2012). For the purpose of this research, blended learning is defined more narrowly as a mixture of face to face and e-learning experiences (Garrison and Vaughan, 2008). This definition restricts blended learning to mean the use of online tools combined with face-to-face sessions, and excludes classroom based teaching that might include non-networked (offline) electronic tools. The broader term 'technology-enhanced learning' has more recently been more widely adopted to address this.

### **2.1.3 Technology-Enhanced Learning**

Technology-Enhanced Learning or 'TEL' is a broad term which encompasses the use of technology in any shape or form to improve the learning experience of students (Kirkwood and Price, 2014). As Goodyear and Retalis (2010) point out:

“Technology” in its broadest sense can include both hardware - such as interactive whiteboards, smart tables, handheld technologies, tangible objects - and software - e.g. computer-supported collaborative learning systems, learning management systems, simulation modelling tools, online repositories of learning content and scientific data, educational games, web 2.0 social applications, 3D virtual reality, etc.” (2010, p. 8)

TEL can therefore include e-learning systems; blended learning approaches in which online work is complemented by face-to-face activities; classroom activities in which online resources are used; and learning activities in which learners use portable technologies to support, enhance, record or share their learning.

## 2.2 Virtual Learning Environments

Virtual Learning Environments (VLE) are digital platforms to enhance teaching and learning experiences using the internet (O’Leary and Ramsden, 2002) and can be defined as “software system[s] that combine a number of different tools that are used to systematically deliver content online and facilitate the learning experience around that content” (Weller, 2007, p. 5). As such they may be used solely to deliver ‘e-learning’ as defined in section 2.1.1; to support ‘blended learning’ of the kind described in section 2.1.2; or can be seen as platforms to support a wider range of ‘technology-enhanced learning’.

Unlike many other educational software applications, VLE’s are designed to be capable of supporting learning across different subjects and levels, offering learners a consistent interface throughout their time in higher education and enabling teachers to reuse content and learning activities. The dominance of a small number of VLE platforms means that this experience extends across institutions. There is a disadvantage to this consistency, namely that it may be difficult to support distinctively different pedagogical models.

The most widely used VLE in Higher Education worldwide is Blackboard (Bradford, Porciello, Balkon and Backus, 2007) which acquired what was then its main rival WebCT, developed at the University of British Columbia (Subramanian, Zainuddin, Alatawi, Javabdeh, Hussin, 2014), in 2006. Blackboard’s combination of learning environment tools, monitoring, assessment and feedback systems (Martin, 2008) and integration with other important tools such as Turnitin has allowed it to maintain a leading role in Higher Education institutions. Coopman (2009), however, critiques Blackboard for being too hierarchical, whereby the institution using the Blackboard platform has little say regarding how the resources are to be structured.

But with the appearance of the Open Source alternatives, Blackboard started to lose some of its appeal in the Higher Education Sector (Davis, Carmean and Wagner, 2009). Indeed,



the availability of open source platforms and developer communities meant that institutions could have more flexibility in terms of the costs of using the VLE and the extent to which the latter could be adapted to meet the needs of the institution and its learners.

Sakai is one such Open Source VLE platform, which emerged when a group of higher education institutions with the capacity to carry out development themselves and had developed institutional VLE platforms, which later came together in the Sakai Initiative (<https://sakaiproject.org/>). The aim of the Sakai Initiative has been to enable a 'service oriented approach' (Weller, 2007) based on open architectures. It has combined tools and components from multiple providers, in an integrated environment so that a 'single user experience' is thus created (Counterman, Golden, Gollub, Norton, Severance and Speelmon, 2004, p. 2). Sakai, in contrast to Moodle, is described as being 'pedagogically neutral' (Weller, 2007) in that it allows e-learning designers to combine elements according to the nature of learning activities and learner needs. This does, however, make additional demands on teachers and content developers, who have less clear frameworks to assist in the design of learning activities or sequences. One objective of this neutrality was to support a wider range of pedagogical models, including those which are used in research-intensive higher education (Carmichael and Jordan, 2009), although there is nothing to prevent it being used to support transmission models of learning. A study conducted by Dube and Scott (2014) indicated that some teachers in Zimbabwe used Sakai as an information transmission tool only, and highlighted the importance of teacher training if the potential for VLEs to support other pedagogical models is to be realised.

Foster and Cole (2005) and Weller (2007) highlight the fact that the other commonly used VLE, Moodle differs from other VLEs such as Blackboard and Sakai because, rather than providing a pedagogically neutral environment, its design has a basis in social constructivist pedagogy. It has a broad-based developer community; Foster and Cole (2005, p. 4-5) also mentions its "open source base and Moodle community". Moodle is also claimed to offer a

framework for the development of communities of practice that will provide learners with the sociocultural learning environment which they are used to in face to face sessions (Weller, 2007). Again there is little to prevent a course designer using Moodle and selecting tools and content to support a transmissive model of learning.

VLE's are also effectively authoring and designing environments in which teachers can develop materials, activities and learning sequences. This may be achieved by the simple sequencing or timing of the release of content, or may involve more sophisticated learning design tools such as LAMS (Learning Activity Management System) in which pathways through content are created by drawing a sequence of activities which lead to the outcomes to be achieved. LAMS, rather than setting out to provide an online space to be configured by learners, is centred around activities to enable learning (Weller, 2007). Learning sequences are created by drawing a sequence of activities which lead to the outcomes to be achieved. Due to the centrality of learning activities in the teaching and learning process on LAMS, teachers recognise its effectiveness in terms of ensuring involvement of students, and lessons and learning sequences on LAMS is said to be easier than in the much less structured environment of, for example, Sakai (Russell, Varga-Atkins and Roberts, 2005).

So far, we have seen how e-learning has developed throughout the years to then use VLEs as platforms. The VLEs have been improved in terms of the tools that were included in their development over the years. Some of the improvements mentioned are e-assessment systems; learning activity management systems; e-Labs; referrer systems (allowing academics to share resources); library systems going online, and more generic groupware systems being used in academic settings.

### **2.3 E-Learning 2.0 and VLEs**

The utility and effectiveness of VLEs were further enhanced with the tools brought about by Web 2.0. Anderson (2007, p. 7) describes how Web 2.0 brought about “blogs, wikis, multimedia sharing services, content syndication, podcasting and content tagging services”. The tools mentioned enhanced the ability of online platforms to construct learning and share information more rather than being based on transmission models of learning and training. Consequently, VLEs began to incorporate these kinds of features into their environments, so Blackboard, Moodle and Sakai all have chat, wiki, peer-to-peer communication, and personal profile tools.

As we will see these are the kinds of tools that were central to the original ‘connectivist MOOCs’ but they also reflect a more general move towards the creation of e-learning in terms of learning communities rather than the acquisition of knowledge or skills.

### **2.4 Open Courseware and Open Educational Resources**

The concept of ‘openness’ in teaching and learning has been a common theme over the years. In the late 1990s, the Massachusetts Institute of Technology (MIT) introduced Open Courseware (OCW). The idea was to open their course content to the world: Kirkpatrick states that:

“OCW is envisioned as a way to narrow the digital divide, to help educators in developing countries to ramp up their curricula, and to assist students and self-learners who could not afford to attend or meet the entrance requirements for an MIT education” (2006, p. 53).

The key purpose of OCW was to have Open Educational Resources (OER) which were open to access and reusable anytime and anywhere as per the openness of the licenses (Martinez, 2014). The ‘openness’ is seen as offering teachers more resources and learners

opportunities to increase their chances of getting into higher education. However, it can be argued that OCW was probably of greater benefit for teachers wishing to develop learning online learners than directly for learners. The incentive for students was the self-directed learning that they would gain, but there was no online interaction or assessment and hence no certification (Martinez, 2014).

Martinez (2014) points out that, users started wanting more from OCW. While OCW had teaching resources that “..reside in the public domain or have been released under an intellectual property license that permits their free use or re-purposing by others” (Atkin, Brown and Hammond, 2007, p. 4), they were not sufficient to fulfil the growing demand of the users in terms of dynamism and interaction that they wanted (Martinez, 2014).

This provides one way of understanding the development of MOOCs, as using the established technologies from VLEs, combined with the peer learning and community building tools of Web 2.0, together with the commitment to openness that had been tested with initiatives such as OCW. These, in combination with the learner assessment and validation and accreditation that was demanded by potential users, provide rationale and some pointers as to the directions in which e-learning, through MOOCs might develop.

## 2.5 Massive Open Online Courses

According to Mackness, Mack and Williams (2010), the MOOC endeavour started in an idealistic way with Siemens's (2008) cMOOC, *CK008: Connectivism and Connective Knowledge*. This tried to create independence of learning among learners whereby they would not be tied to a specific university course. He used a more social constructivist approach but additionally claimed that the cMOOC is a demonstration of a revolutionary theory of e-learning: 'connectivism' which was defined as constructing learning via networks that are created among the learners online using tools that are available to them (Siemens, 2004). Connectivism will be discussed later in this chapter, but first it is important to recognise the variations within the range of online platforms and courses that are described as MOOCs.

### 2.5.1 Definition and Types of MOOCs

Many authors have defined MOOCs although these descriptions have in common the fact that they are free and open to enrol upon, in contrast to most institutional VLE's; and are scalable to large numbers (Voss, 2013; OpenupEd, 2015). McAuley, Stewart, Siemens and Cormier (2010) describe MOOCs as having free resources and a knowledgeable teacher guiding learning through social networking. Recent reviews have attempted to trace the development of different kinds of MOOCs.

Pilli and Admiraal (2016) classify the types of MOOCs depending on their degree of their openness and massiveness. In the first group they identify, the online courses are less open and do not have many participants. Examples given are Small Private Online Courses (SPOCs) where the number of outside participants is limited, groupMOOCs which emphasise on collaborating in small groups, and task based MOOCs which focus on learners completing set tasks.

A second group still involves comparatively small scale provision but the courses are more open. In this category, cMOOCs appear where learning is completely dependent on how the learners communicate with each other and the learning that passes through the connections. However some of the other types of MOOCs described by Pilli and Admiraal (2016) in this quadrant still do not pass the tests of being completely open and massive for me, for example the number of students who can enrol on BOOCs (Big Open Online Courses) or LOOCs (Little Open Online Courses) is limited.

The third group described by Pilli and Admiraal (2016) is less straightforward. The online courses are massive because the number of students who can enrol is not limited. However, the courses are less open in terms of “registration fees, course duration, customised content and course design, including assessment” (Pilli and Admiraal, 2016, p. 231). One example of such a course is Kaplan’s use of MOOCs for the delivery of ACCA (Association of Chartered Certified Accountants) qualifications. The last quadrant contains large scale and more open MOOCs. Thus the MOOCs which are currently common fall under this particular category.

Czerniewicz, Deacon, Fife, Small and Walji (2015, p.5) also discuss “emergent forms of MOOC-type course” and discuss Open Boundary Course (OBC) (when fee paying students and outsiders study alongside each other), Small Private Online Course (SPOC) which might use MOOC tools, Massive Online Courses (MOC) (which are not open) and ‘wrapped MOOCs’ where the MOOC is part of a more traditional course where students are fee paying.

A more general way of differentiating MOOCs on the basis of their underlying pedagogical model is to separate cMOOCs and xMOOCs (Levy, 2014). While cMOOCs focus on the social construction of learning as envisaged by Siemens, xMOOCs typically follow a more linear structure for online delivery. At the time that this study was begun, the distinction between cMOOCs and xMOOCs was the main way in which MOOC platforms were

distinguished; and a comparison of cMOOCs and xMOOCs was used to understand the characteristics required by Mauritian learners. The distinctions identified by Czerniewicz et al (2015) and Pilli and Admiraal (2016) have emerged subsequently and are revisited in the final discussion chapter of this thesis.

Based on the literature on cMOOCs and xMOOCs, their key features can be illustrated as follows:

<b>cMOOC</b>	<b>xMOOC</b>
Is based on connectivism (Siemens, 2008)	Is more commercial (Sanchez-Gordon, Calle-Jimenez, Luján-Mora, 2015)
Focuses on constructing learning socially via interactions (Levy, 2014).	Has a more linear structure for online delivery (Levy, 2014)
Based on the above, the model of learning is more that of social interaction (Hayes, 2015).	Here the transmission model better describes its model of learning (Hayes, 2015).
Has "...explicit principles of connectivism, autonomy, diversity, openness and interactivity" (Pilli and Admiraal, 2016, p. 228)	Has a structure based on criteria drawn as necessary to achieve the learning outcomes (Ebben and Murphy, 2014)
Is centred around the learner (Pilli and Admiraal, 2016). Therefore the onus of creating learning is on the learners.	Is focused around one teacher who is central for the achievement of the course (Sanchez-Gordon, Calle-Jimenez, Luján-Mora, 2015).
Is based on the assumption that the learner must be able to work with the tools available to reflect on the resources	Has tools and resources, such as videos and reading materials, that the learners have to go through to construct learning (Kop, Fournier, & Mak, 2011)



provided, create and share knowledge (Kop, 2011)	
Is where the teacher acts as another learner (Pilli and Admiraal, 2016)	Is where the teacher is responsible for providing the resources and assumes the role of an instructor (Pilli and Admiraal, 2016)
Has a group of academics behind creating it (Sanchez-Gordon, Calle-Jimenez, Luján-Mora, 2015)	Usually has one or more institutions from the higher education sector behind its creation (Sanchez-Gordon, Calle-Jimenez, Luján-Mora, 2015)
Has no formal assessment. Feedback is given by other knowledgeable learners (Pilli and Admiraal, 2016).	Has assessment tools such as quizzes and assignments. Peer review is often used as a form of assessment (Pilli and Admiraal, 2016)

**Table 2.1: Comparison of features for cMOOCs and xMOOCs**

MOOCs are delivered on several platforms, with the key ones being on Udacity, EdX and Coursera. These platforms are key due to the fact that they were among the first ones to launch MOOCs (Renz, Staubitz, Meinel, 2014).

### **2.5.2 Critical Perspectives on MOOCs**

The emerging literature on MOOCs identifies a number of significant challenges and areas for development and research. The first of these is enrolment and retention: Daniel (2012, p. 6) mentions “non-starts, dropouts, non-completers and cheats” as the main issues facing MOOC, and argues that issues around plagiarism and assessment are made more serious by issues of scale. Jordan’s (2014) analysis on the percentage of students who complete MOOCs when enrolled also confirms how few people reach the completion of the online courses. However, Agarwala (2013) argues that despite the low rates of completion, the numbers are still greater than a conventional campus-based course.

A second issue that has been identified is that of learner experience and the extent to which this is individualised within a ‘massive’ online environment. Sunar, White, Abdullah and Davis (2016) discuss how the particular patterns of interactions of learners on a MOOC can sustain their engagement on the course and ultimately increase completion rate. They propose analysing the behaviours of MOOC learners on social interactions to predict possible drop outs. Sunar et al (2016) believe that by analysing the participation of learners on MOOCs, predicting their future behaviour in terms of their completion is possible. Another model that aims to predict behaviour of learners online is that of Huin, Bergneaud, Caron, Codina and Disson (2016) who produced a learner centred model that aims to increase completion rate and decrease drop out rates. The model has three components namely intention, commitment and behaviour. According to them, the strong link among the intention, commitment and behaviour of MOOC participants can determine the differing profiles of the learners and then allow the design of MOOCs to offer more individualised learning experience. They then suggest that by removing the massiveness of MOOCs by individualising learning there can be an improvement in completion rates.

A third area of critique relates to the richness of individual learning experiences. Armstrong (2012) states that MOOCs does not deliver to its promise of developing conceptual learning

He points out that “There is one weekly problem set designed to measure algorithmic rather than conceptual learning”(Armstrong, 2012, p. 2). In that, he is saying that learning is recognised to happen as per the grades obtained on weekly tests and quizzes and assignments to be submitted. As such there is no evidence of higher level learning happening. Similarly, Knox (2014, p.165) mentions that MOOCs’ pedagogy is generally “...instructionist and constructivist...” because they tend to have a series of videos and resources that the learners have to go through to then complete the relevant tasks. It can then be seen that MOOCs are accused of a lack of pedagogical richness and individualisation. However, Knox (2014) also suggests that higher level learning can happen if the course contents are created by the learners via interactions, based on some guidelines given by the teacher rather than having the standardised course content that current MOOCs generally have.

The standardisation of content means that MOOCs are not culturally appropriate because they do not reflect the cultural context within which they are delivered. Standardising of MOOC content is the easiest way to broadcast the course internationally. However, as Lane and Kinser (2012, p.1), say “a multinational university can’t simply be a broadcasting service to recipients in other countries; it must engage with and learn from other cultures”.

It can be seen that current MOOCs, are in general more in line with e-learning or possibly blended learning, and less oriented towards the broader TEL model, although, as Czerniewicz et al (2015) identify, hybrid models such as the wrapped MOOCs, are appearing.

The above analysis of learning generated on MOOCs indicates the need to theorise such learning, and the patterns of their development.

## 2.6 Pedagogies of E-learning

### 2.6.1 Salmon's Stage Model of Online Participation

Constructing learning is a crucial ingredient to Salmon's (2002) model of e-learning.

According to Salmon (2002), the learners progress by constructing knowledge both about e-learning and about the subject content. She states that the e-learning begins when the learners access the platform and then familiarise themselves with the tools and meet other participants. After that, they move to information exchange and discussions which enable construction of learning through social interaction and finally they develop the ability to learn more independently and reflect on their learning. This can be illustrated as follows:

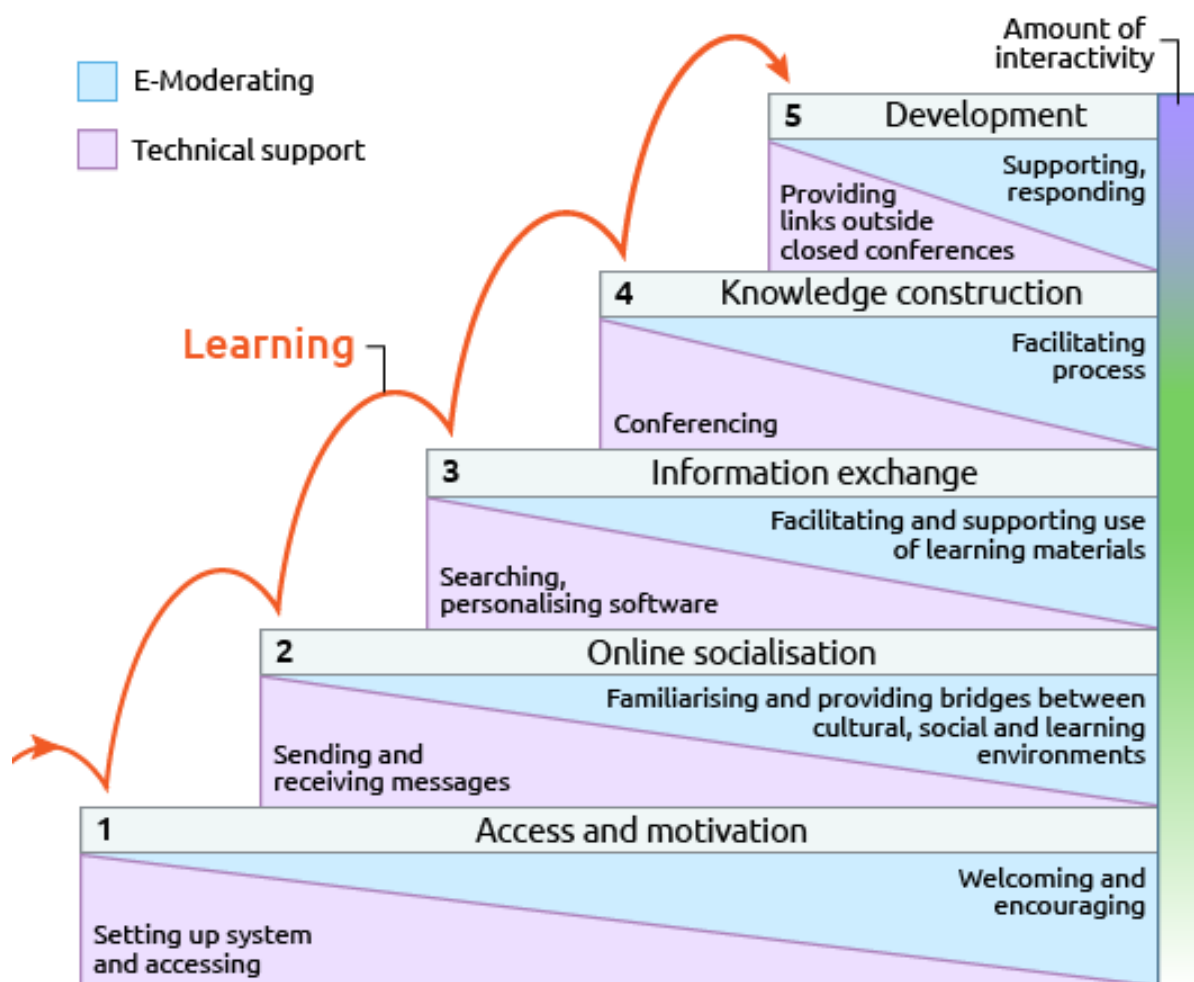


Figure 2.1: Salmon's 5 stage model (Salmon, 2003, p. 29)

Hughes, Ventura and Dando (2004) discuss how the model is underlined by the theories of learning of Piaget, Vygotsky and Schon. Salmon's model has proved useful for online tutors (Barker, 2002; Bennett and Marsh, 2002) and in understanding how online learners can be supported by the online tutors (Thorpe, 2002). Lisewski & Joyce (2003, p.56) describe Salmon's 5 stage model as reflecting the "dominant discourse" of e-learning at the time it was proposed. However, the model also has its limitations.

Salmon's model is quite specifically concerned with the facilitation of online communities (Moule, 2007) and this can create limitations in terms of investigating how the effectiveness of other online tools, environments or models of technology integrate into learning. Indeed Lisewski and Joyce (2003) reported the failure of an e-moderating training course due to the rigidity of the 5 stages model which limited the institution's ability to support learners of varying styles of learning. However, the model remains effective and influential in guiding teachers in their support of online learners, particularly for first-time users.

Such support is reported as important for the success of MOOCs by Davis, FitzGerald, Khandia, Ingham, Smith and Ashby (2014) who cite Higher Education Academy guidance from a 2014 event entitled "Changing the Learning Landscape: From OERs to MOOCs", where it was argued that if institutions wanted MOOCs to succeed, they needed to engage academic staff more in the facilitation of the online courses. Salmon's 5 stages model would be helpful in this respect because the model indicates how the teachers can guide and support new online learners until the completion of the MOOCs.

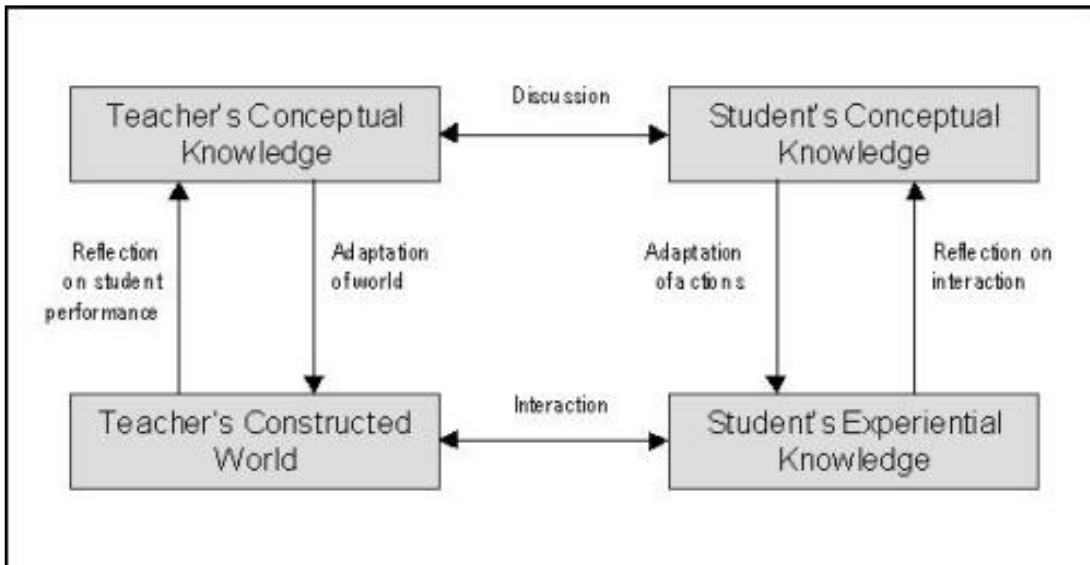
So, although Salmon's model can be useful for a MOOC implementation, it is not sufficient. If it were to be used as the basis of an implementation plan for a new MOOC, it would focus more on "teacher" roles within the MOOC. However, learning within MOOCs also involves a range of resources (videos, reading materials, independent discussions, tasks at the end of

each session) and in cMOOCs, in learners operating across the boundaries of the MOOC from the beginning.

Because it is open, the variety of learners (with their learning preferences) who enrol is high and Salmon's model may not cater for all these learners. Then, because a MOOC is massive, the high level of teacher guidance and mediation recommended by Salmon may not be possible. As Davis, FitzGerald, Khandia, Ingham, Smith and Ashby (2014) state, the model used as a framework for developing a MOOC depends on its purpose: for MOOCs which are primarily concerned with enrolment, retention and completion, Salmons' model may have some value, but if the purpose of a MOOC was to enable learners to construct learning among themselves, then Salmon's model have less relevance.

### **2.6.2 Laurillard's Conversational Model and Engestrom's Activity Theory**

Laurillard's conversational model (1993) locates the conversation at the centre of learning through interactions and shared meanings and has been very influential in the design of e-learning activities and environments and has informed the design and development of learning frameworks to increase the level of engagement within a learning environment with the use of technology (Field and Kent, 2006; Mayes and Freitas, 2004; Mai, Neo and Lim, 2013). The importance of interaction is highlighted in a conversational model of e-Learning. According to Laurillard (1993), learning is constructed by the interaction between the teacher and the student: this is illustrated in Figure 2.2. The role of the teacher is, therefore, focused on ensuring that dialogue is continuous. Thus effective feedback is the key to the teacher-student teaching and learning cycle.



**Figure 2.2: Laurillard's Conversational model (1993)**

Using the conversational model to design the pedagogy of MOOCs would not be effective. As Goodyear (2002) purports, the conversational model restricts the view on providing mass higher education. Furthermore, Mayes and de Freitas (2004) mention that there may not be sufficient activities on the online course to enable the conversational model to be effective. The model requires a high level of feedback from the teacher (Laurillard, 1993) and on a MOOC, where there is one teacher for many students, such level of feedback may not be possible. Additionally, the model excludes other tools that are present on the online platform. To consider this multiplicity of other tools, Engestrom's (1993) activity theory may be used to construct a pedagogical model of MOOCs.

Engestrom (1993) draws on Vygotskyian ideas about the central role of teacher-learner interactions and the notion of the 'tool' or mediating artefact. By extending Vygotsky's ideas into a more complex social or 'situated' framing of learning, Engestrom shows how different tools may play a role in enabling or constraining learning, and may reinforce or resolve tensions in 'activity systems'. The use of artefacts to mediate the process of learning in e-learning environments has been evaluated by many researchers. Scanlon and Issroff (2005) mention the use of Activity Theory to determine the level of learning that was generated in

higher education due to learning technologies. Liaw, Huang and Chen (2007) use Activity Theory to suggest that the technological tools on e-learning environments enable learners to think at a higher level. Zurita and Nussbaum (2007) state that the use of technology increases the participation of learners in improving their mathematical skills. CHAT (Cultural-Historical Activity Theory) is then seen to consider the role of the tools to mediate the activity of learning construction between the teacher and the learner. It takes into account the relationships between teachers, learners and tools within a broader 'cultural' setting.

In a comparison of CHAT with Laurillard's Conversational Model, the addition of mediating artefacts or tools is significant. However, although CHAT considers the teacher, learner and tools, it is not sufficient to build a pedagogical model for MOOCs as it largely ignores the interaction among learners, whom it sees as part of the context of learning. The definition of 'community' under CHAT has to do with the social contexts of the teachers and students (Wilson, 2014). In some online environments at least (including cMOOCs) the desired outcome is that online learners build a community of their own, that contributes to their ongoing achievement of learning (Sadera, Robertson, Song and Midon, 2009). So apart from the acquisition of knowledge via tools, activities and teachers, the pedagogical model for MOOCs has to include how learning is achieved via processes of social participation and shared knowledge construction.



### 2.6.3 Sfard's Metaphors of Learning

Sfard's (1998) highly influential metaphorical mapping of models of learning has implications for the analysis and design of learning environments, and understanding the learning activities that they support. In her model, Sfard distinguishes two broad metaphors for learning: the Acquisition Metaphor and Participation Metaphor. According to Sfard (1998), Acquisition Metaphors (AM) of learning have been dominant in education, and even when we are learning via social construction, we still are trying to 'acquire' knowledge: our goal is to achieve certain learning outcomes. According to the Participation Metaphor (PM), however, the aim is to continue to form part of a community of learning such as those described by Wenger's model of 'communities of practice' (Wenger, 1998) and participate in the continuous learning process of the community. Thus there is "no halting signal" to learning (Sfard, 1998, p. 6).

It is interesting to see that Sfard's model depicts a significant development in the role of the teacher. As Smith and Blake (2006) discuss, the role of the teacher has evolved from being the knowledge giver to the facilitator. In that, the passive acquirer role of the student, at the time when the teacher was only a knowledge giver, is similar to Sfard's (1998) acquisition metaphor. Sfard's model has obvious appeal in the analysis of online environments because it can characterise their nature in terms of the role of teachers and learners, and the kinds of activities they promote and support: transmission or acquisition of knowledge, or participation in a learning community. Online training is obviously guided by the AM, while social media environments might better support the PM. Broadly, Siemen's notion of the cMOOC is closer to Sfard's PM, as the aims include forming part of the community of learning and participating in its continuous learning process; while xMOOCs are more inclined towards the AM rather than PM because the tools facilitate acquisition of knowledge rather than building social online networks.

Sfard's model is relevant but not sufficient to guide the development of a pedagogical model for MOOCs. It can be used to assess the orientation towards AM and PM in a learning context, such as within a MOOC (Swan, Day and Bogle, 2015). It may help us conceptualise the role of the teacher as an online instructor, mediator or tutor (AM) or as a co-creator of a learning community (PM). However, Sfard's intention was to provide a 'meta model' so we need to consider how to unpick the ways in which AM and PM operate at low level. Following from the PM of Sfard's model, it can be seen that construction of learning through participation among the learners is an important way of thinking about learning. The learners would then form a network sharing and creating knowledge and practice. It is therefore worthwhile to consider models of explicitly 'networked' learning.

#### **2.6.4 Networked Learning and Connectivism**

The notion of learning network is mentioned by Wellman (2001). His analysis of the move from individual groups of people to social networks demonstrates the possibility of learning by connecting people online. They then take the role of nodes on learning networks, through which construction of learning happens. With the arrival of cMOOCs, the process of creating networks through which learning is constructed, was given the name "connectivism".

Siemens (2008) argues that there is something intrinsically different about e-learning in cMOOCs – hence his coining of the 'connectivism' term. He claims to introduce a theory more fit for e-learning and argues that the cognitivist, behaviourist and constructivist theories (all of which align with Sfard's AM) are not sufficient for e-learning. However, similarly to Salmon (2003) and Wellman (2001), he also talks about connecting nodes to create learning, which then leads to the belief that although the term connectivism may be new, the underlying theory itself is not. Indeed, Kerr (2006) describes connectivism as being part of the existing learning theories with new ways of constructing learning using the tools on MOOCs. He states that "...connectivism misrepresents the current state of established

alternative learning theories such as constructivism, behaviourism and cognitivism, so this basis for a new theory is also dubious” (Kerr, 2006).

Siemens (2008) argues that that the nodes to be connected are not only from person to person. He discusses about how the online learners have to be able to connect relevant information together to create learning. In that, it is a new way of interpreting network learning. Then, cMOOCs are MOOCs delivered on a learning environment based on the idea that learners will create learning by connecting nodes of information and this is done with the help of the online community as well as at an individual level. Siemens (2008, p.7) suggests that for this shift to take place, changes in the following conditions would have to be followed: Infrastructure; Merging with existing fields; Changing views of cognition; Popularization; and Processes of learning, knowledge, and education. The success of the whole concept of connectivism lies on the hope that heutagogy (Blaschke, 2012) prevails. A heutagogic learning environment consists of learners who are self-dependent and who know how to learn.

A successful connectivist learning environment may not be immediately achievable in practice. Firstly, not all online learners are heutagogic. Just as we find in face to face sessions, or on an online course, there will be learners of varying learning abilities and skills. If Salmon’s (2002) 5 stage model is considered, then we have a group of learners going through the stages: however, not all of them will go at the same pace. The total time that each student will take to finish the course will depend on the time spent on each of the stages. The time spent on each stage will be affected by many factors such as the learners’ IT skills (Sanders, 2005), ability to work independently and other commitments that they may have.

Before, for example, “changing views on cognition” (to use Siemen’s term) in Mauritius, the current views of Mauritians need to be known. If the successful implementation of

approaches which see the teacher as facilitator or co-learner (as in Sfard's Participation Metaphor) is to be achieved, attitudes towards the role of the teacher need to be established.

If the implementation of a new technology such as a MOOC is to be successful, it is important then, to understand current practices, beliefs and preferences amongst the users of those technologies. As a consequence of the above, in order to implement an effective MOOC in Mauritius (or anywhere else), it is important to consider what the pedagogical needs and preferences of the learners might be. Jones (2011, p.104) states that "A central question for the design of learning spaces in Higher Education is how these learning environments, infused with networked and digital technologies are being inhabited by students." Therefore, the model of pedagogy used to inform the implementation of MOOCs in Mauritius has to reflect what will work for Mauritian learners.

## 2.7 Conceptualising Presence in Online Environments

Garrison and Anderson (2003), in a widely cited and influential framework for analysis of online environments mention three elements for effective educational experience. What this model, which they describe as the 'Community of Inquiry' (COI) model does is to recognise:

- That learning takes place in complex social environments, in which (as Sfard suggests, learning may take place that involves both acquisition *and* participation)
- That within these environments, there may be multiple representations of expertise and knowledge, some of which may be identified as 'tools' or 'content' but that learners may interact with these in different ways (following Engestrom, without the necessary involvement of the teacher as a mediator)
- That engagement in a new community involves social interaction and the establishment of norms and rules (as in Salmon's stage model)
- That different learning environments may reflect combinations of 'presences' of different kinds, from highly teacher-directed, to highly content-rich, to primarily social environments.

Garrison and Anderson (2003) identify three key presences:

- Social Presence (SP)
- Cognitive Presence (CP)
- Teaching Presence (TP)

Garrison and Anderson's work dates from over a decade ago, and as such their definitions and examples of what these presences might involve reflect the learning technologies of that period, but the general model that they offer remains relevant and was selected as a useful framing for analysis of MOOCs, particularly since the issue of teacher role and presence online has been of such central importance in relation to MOOC development and success.

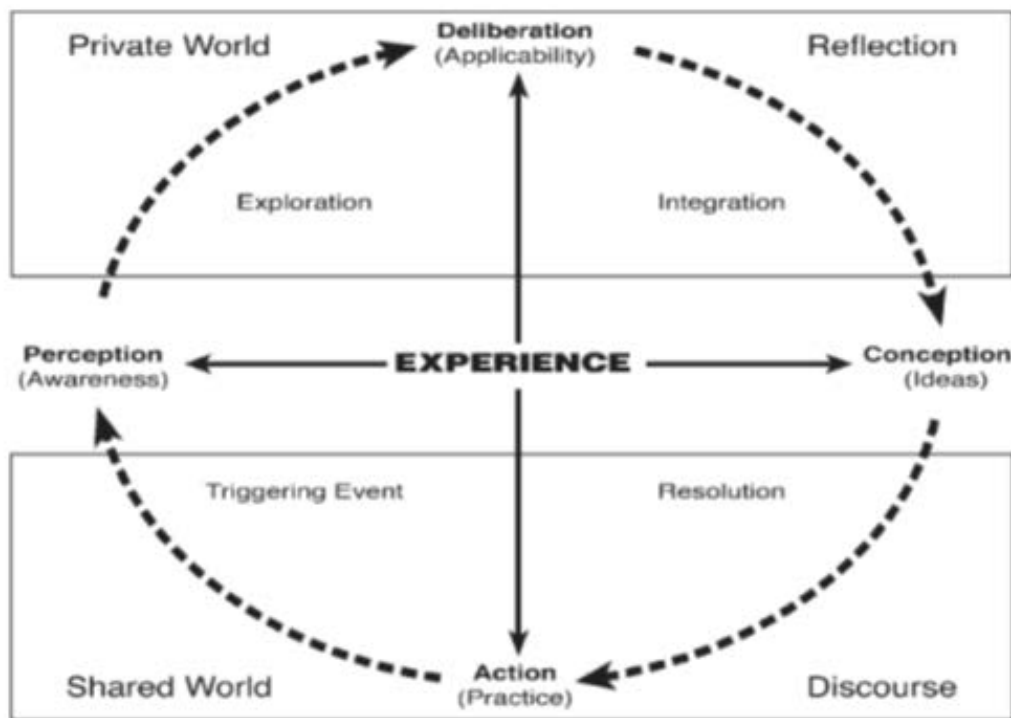
### **2.7.1 Presences in Communities of Inquiry**

Garrison, Anderson and Archer (2000) first proposed the idea of the Community of Inquiry (COI) as a means of understanding online communities and their effectiveness in supporting learning which depends on the effectiveness of the interactions among elements that they identified, which they described as three presences namely “cognitive”, “social” and “teaching” presences. Firstly, they define cognitive presence (CP) as “the extent to which the participants in any particular configuration of a community of inquiry are able to construct meaning through sustained communication” (Garrison et al, 2000, p. 89); cognitive presence includes the consideration of how the learners are able to construct learning using the technology available to them. The second element required for effective educational learning experience is social presence (SP), “ability of the community of inquiry participants to project themselves socially and emotionally, in all aspects of their personality, through the communication media that they use” (Garrison et al, 2000, p. 94). Finally, teaching presence (TP) is described as included two elements: designing the course and how it is to be delivered and assessed, and the direct instruction and facilitating the delivery. They specify that the role of facilitator can be shared and also that teacher presence is important for effective social presence and cognitive presence to take place.

In subsequent work by Garrison and Anderson (2003), the interaction between these is explored further and teaching presence is defined as the role of the teacher in the: “design, facilitation and management of the cognitive and social processes from an educational point of view” (Garrison and Anderson, 2003, p. 55). The role of social interaction in development of cognitive presence is developed to mean “the degree to which the participants are able to construct and confirm meaning by using thought and dialogue in a learning community” (Garrison and Anderson, 2003, p. 55).

Garrison and Arbaugh’s (2007) descriptions of the presences are more detailed in terms of what is required to for the presences to contribute to the educational experience. Again,

they point out that social presence is crucial for cognitive presence to be realised. However they specify that establishing social presence alone is not sufficient and that the social presence has to be oriented towards learning, linking the COI model to one of ‘practical inquiry’ based on Dewey (1933).



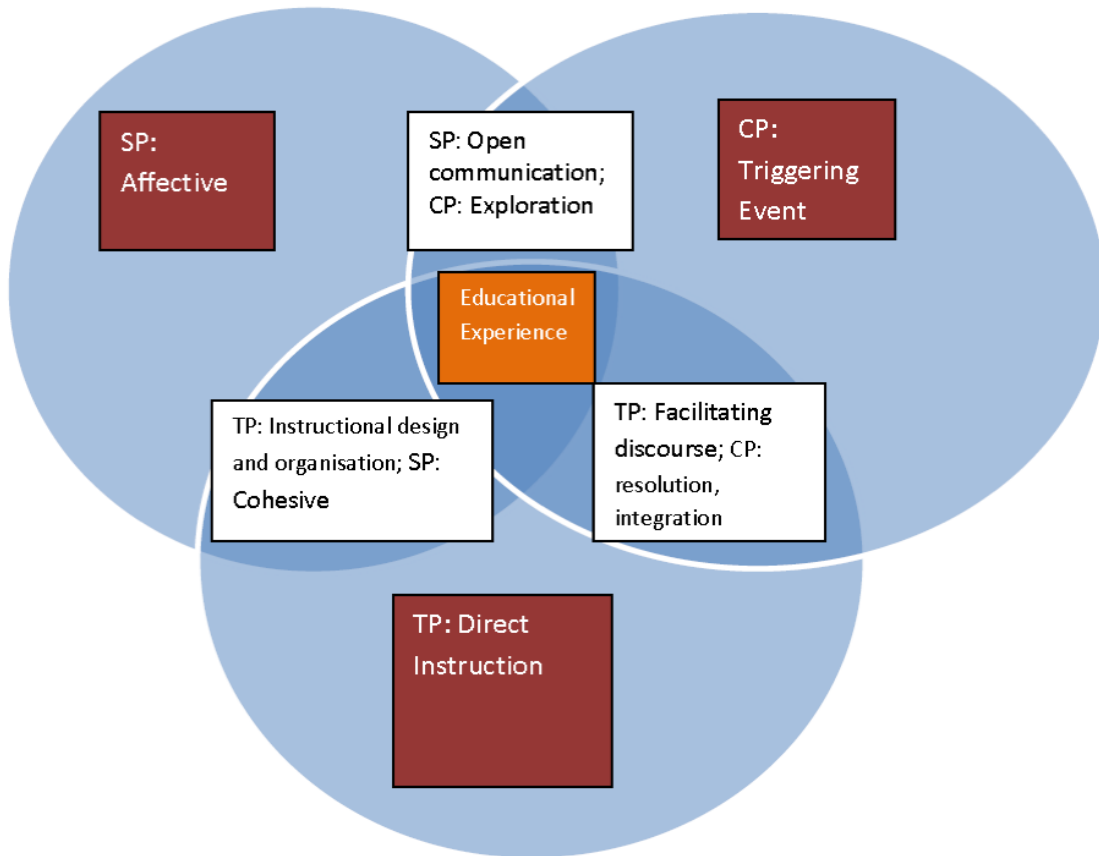
**Figure 2.3: Practical Inquiry Model (Garrison and Arbaugh, 2007, p. 161, based on Dewey’s (1933) concept of practical inquiry)**

Garrison and Arbaugh (2007) analyse the concept of cognitive presence in more depth and suggest that cognitive presence is the most difficult presence to develop in online environments. They come to the conclusion that on many of the learning environments, students cannot go beyond “exploration” and “integration” (as shown in Figure 2.3 above) and that cognitive presence is dependent to a large extent on social presence and teaching presence. Furthermore, the role, of the teacher in terms of designing the course and preventing the discourse to go off topic, is also said to be paramount for effective cognitive presence to take place.

Garrison and Arbaugh (2007) also describe teaching presence as per Garrison et al (2000), and again they shed more light on what teaching presence is. They do recognise that teaching presence implies the design of the course, facilitation and direct instruction, but they investigate into how each element of the teaching presence has an impact on educational experiences of the learners. They point out how learners may sometimes confuse direct instruction with facilitation and state that “Facilitation supports dialogue with minimal shaping of the discussion. Discourse, on the other hand, is disciplined inquiry that requires a knowledgeable teacher who must manage the progression of the discussion in a collaborative constructive manner (i.e., direction)” (Garrison and Arbaugh, 2007, p. 165).

From the above, it can be seen that Garrison and Arbaugh (2007) still consider the definitions of presences as per Garrison et al (2000) but they investigate how the presences can be made more effective, how they interact with each other and why sometimes they may not contribute sufficiently to the effectiveness of the educational experience. The COI as explained by Garrison et al (2000) and later further explored by Garrison and Anderson (2003) and Garrison and Arbaugh (2007) can be illustrated as follows:





**Figure 2.4: Community of Inquiry (adapted from Garrison et al, 2000; Garrison and Anderson, 2003; and Garrison and Arbaugh, 2007, p. 62)**

Jezegou (2010) offers a critical assessment of the COI model, and criticises the concept of ‘community of Inquiry’, stating that the authors do not provide a strong theoretical framework for the different elements that they mention as essential for effective e-learning. She critiques the over broad notion of ‘community’ and suggests that groups can range from informal (where people formed a group voluntarily, due to a common interest, with no one being particularly in control) to formal (where the activities and structure are in full control of a more experienced person). She argues that a community of inquiry is a particular kind of pragmatic response, where a group of people are interdependent and exchange views in order to construct learning.

Jezeqou (2010) also suggests that, in order to participate in this process, while Garrison and Anderson (2003) mention the need for the participants to be self-directed, motivation and self-regulation are required for effective self-direction. Jezeqou's (2010) further criticisms of COI involve the synchronicity of the tasks online and the boundaries of the presences. She, indeed, discusses how the authors focus more on asynchronous tasks, whereas, by the time of her work, tools such as video conferencing which allow for synchronous communication had become more common.

Finally Jezeqou (2010) states how it is difficult to determine the boundaries for each presence, citing the work of Manca, Persico, Pozzi and Sarti (2006) where the authors suggest that most of the research carried out focus on one of the presences, rather than recognising overlaps and hybrids. This development of the original COI model has informed the design of this study, which explores all three kinds of presence and their interrelationships.

The Community of Inquiry Model is an appropriate framing for this research as it is well grounded in the research literature: as McKerlich and Anderson (2007) mention, the categories of COI are based on "Dewey's (1933) practical inquiry, Lipman's community of inquiry and Garrison's (1991) model of critical thinking" (McKerlich and Anderson, 2007, p. 36). But what makes it particularly useful is that it provides a heuristic model on the basis of which the implementation of MOOCs can be carried out. However, the indicators of presence that are identified are simply examples, and may be different as per researchers' and developers' own needs and cultural context. In that respect, COI provides the framework that can provide the categories within which a MOOC pedagogical model to suit Mauritian learners can be developed.

### 2.7.2 Presences in MOOCs

Like any online environment, MOOC platforms and the courses within them will vary in the extent to which presences can be represented within them. Whether the course indeed demonstrates these presences depend on the extent to which the tools are used. A number of authors have elaborated on 'presences' on MOOCs both in a general sense, to talk specifically about the role of the teacher, and in terms of social presence, cognitive presence and teaching presence.

Research on presences on MOOCs so far includes attempting to measure social, teaching and cognitive presences. Elouazizi (2014) measured the cognitive presence achieved by learners on MOOCs while Bayne and Ross (2014) talk about the role of teachers on MOOCs, how the teachers have less presence on cMOOCs and more on xMOOCs.

Kilgore and Lowenthal (2015) talk about a MOOC designed to demonstrate how to maximise learning from a MOOC. The MOOC was called the Human Element MOOC and used the three categories of the COI to explain how by mastering each of the presences, an effective educational experience can be achieved. Watson, Watson, Loizzo and Richardson (2016) assess how the teachers are triggering attitudinal changes on a MOOC via COI's presences. Morrison (2016) discusses the use of Facebook as a tool to increase social presence on MOOCs.

Following from Jezegou (2010)'s concern that researchers have tended to focus on one presence only, an important contribution has been made by Koseoglu and Koutropoulos (2016) who speaks of a "hybrid presence" in MOOCs. Koseoglu and Koutropoulos (2016) state that for a MOOC to be successful in terms of educational effectiveness, teaching presence has to change. Firstly the teacher must give control to the learners for them to then be facilitators. Secondly, the teachers should also participate in the activities as learners. We see here that they are suggesting fluidity in who is a teacher and who is a learner. They also

advocate that for the above to be effective, the teachers must listen to the voice of their learners. Teaching presence will then change into what they then call “hybrid teaching presence” (Koseoglu and Koutropoulos, 2016).

To date, however, there is no investigation or significant discussion about **learner perspectives** on the value of different patterns of presence in MOOCs and how such presences might affect their acceptance of MOOCs. This represents a key gap in the research literature that the current study seeks to address.

In this section of this literature review, a range of pedagogical models and frameworks have been reviewed, with the discussion leading to the identification of Garrison and Anderson’s ‘Community of Inquiry’ model (2003), as developed by the work of Jezegou (2010) and others as a means of exploring how MOOCs might be designed, developed and evaluated. A gap has been identified in relation to learner perspectives on the ‘presences’. However, as the broad objective of this study is to inform wider implementation of MOOCs, an analysis of user perceptions of their experience couched solely in terms of pedagogy will tell only part of the story.

It is necessary also to understand broader patterns of technology acceptance and adoption; so the next section reviews literature on emergent technologies and models developed to better understand their acceptance.

## 2.8 Technology Emergence, Acceptance and Adoption

Understanding pedagogical preferences and focussing on the issue of 'presence' is still not adequate if we are to understand and contribute to debate about how to implement MOOCs. Other, broader, social, economic and technological factors may also determine the success and long-term impact of technologies, particular when these are emergent and highly innovative.

According to Veletsianos (2010, 2016) for a technology to be characterised as 'emerging', it has to still be in a state of evolution and, following from this not being fully researched and hence understood. Thus if a technology is new, it does not necessarily imply that it is emerging. Some educational technologies are technologically robust, but, as yet their potential has yet to be fully or reliably assessed. Halaweh (2013) and Rotolo, Hicks and Martin (2015) also mention uncertainty and ambiguity as contributing to the emergent nature of a technology. So a technology, which is still being researched because academics or other potential users still have not completely understood its potential, will be an emerging one. At the same time, there must be sufficient promising potential, which, however, has not been completely achieved, for interest to be maintained (Veletsianos, 2016).

Rotolo, Hicks and Martins (2015) identify emergent technologies as having varying degrees of five elements that they identified from a review of literature namely: "radical novelty, relatively fast growth, coherence, prominent impact, and uncertainty and ambiguity" (Rotolo et al, 2015, p. 1840). MOOCs fulfil all of these criteria to some extent. While they are not new technologies, MOOCs involve novel ways of using existing technologies in novel combinations. Therefore their novelty is not from new tools that they include but rather the patterns of engagement and interaction that the tools encourage. MOOCs have been fast growing and their development is coherent, in that it is driven by a number of major developers and has a clear market, in comparison with other emergent technologies the development of which has been less predictable. MOOCs also have potentially significant

impact on access to and participation in learning. At the same time, MOOCs are still emergent and their social impact is still uncertain and ambiguous, which leads us to MOOCs fulfilling another element mentioned by Rotolo et al (2015).

Rotolo et al (2015) also explain that emergent technologies may be uncertain and ambiguous, and this is particularly important in this research study because of the uncertainties about the appropriateness of MOOCs for a Mauritian context. Because MOOCs are still developing, this research will seek to explore this uncertainty and ambiguity and to contribute to the knowledge relating to how MOOCs can benefit countries such as Mauritius. Halaweh (2013) also argues that the use of emerging technologies, and the assessment of whether they have potential, is often led by the countries where they were created, so this research is also novel in that it is taking an emergent technology, MOOCs, into a developing educational context with the intention of exploring the ambiguities and uncertainties that this presents.

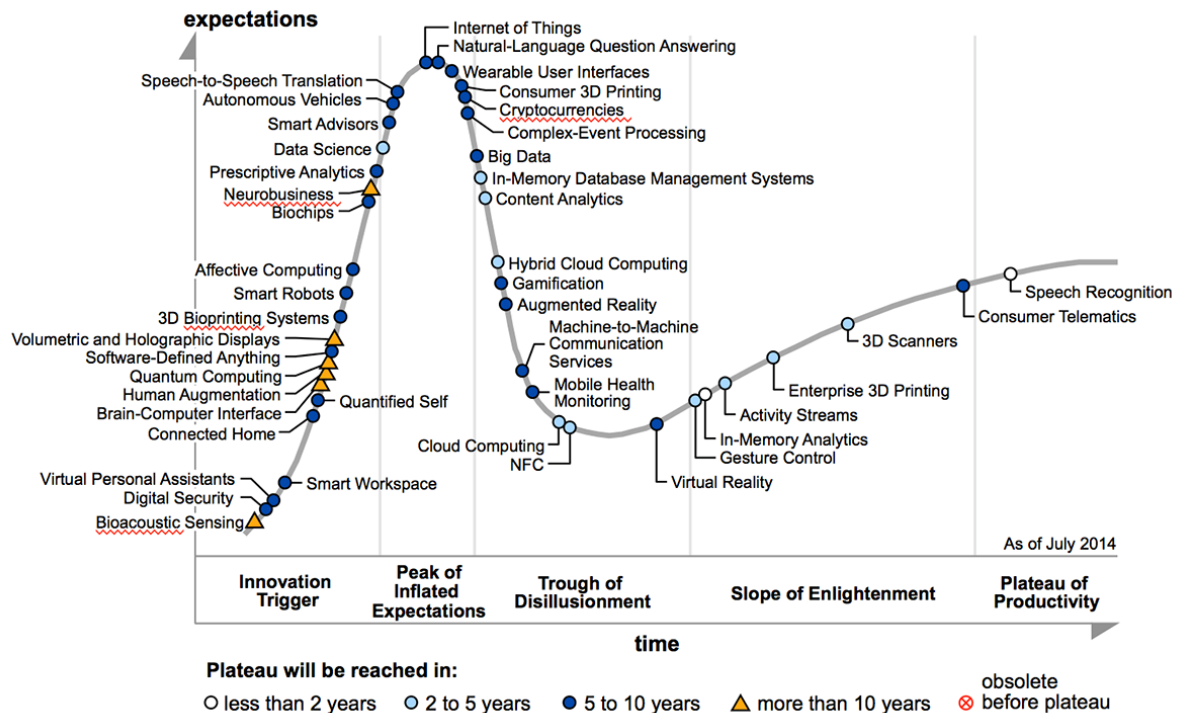
### **2.8.1 Hype Cycles**

There is a danger that the effectiveness of emergent technologies is overstated due to an initial 'hype' driven in part by media and marketing. When a technology is introduced, there is an element of doubt in terms of whether its success is due to its newness. One account of how this doubt is overcome is the hype cycle (Fenn and Raskino, 2008). Hype cycle accounts for the variation in the attention and enthusiasm that an innovation receives and reflects the journey of a technology, for example when introduced. The hype cycle is divided into five key stages: "Innovation Trigger", "Peak of Inflated Expectations", "Trough of Disillusionment", "Slope of Enlightenment", and "Plateau of Productivity" (Fenn and Raskino, 2008).

In the first stage, the potential of a new technology is noticed and receives media attention, even though there may be few, or even no, examples of actual use of the technology. In the

second stage, public knowledge provides examples of how successful the new technology is and any critique or stories of failure are given only limited attention. Technologies that reach this stage are considered to be revolutionary: this is where the peak of hype is reached. In the third stage failure stories become more known and trials do not succeed, but enthusiasts may strongly advocate and even possibly fund the development of the technology. These early adopters and other investors support the technology which leads to the fourth stage where the benefits of the technology start to emerge with more reliable pilot studies and new and newer versions of the technology start being produced. Mainstream adopters begin to then support the new technology. Finally in the fifth stage, the technology is perceived as viable by the whole industry and is accepted as being credible. However, it is important to note that technologies may fail and drop out of sight at any of these stages.

It is possible to plot individual technologies' progress along the cycle, and also over time, to map the 'speed' at which they are progressing through its stages, as shown in Figure 2.5 (Fenn, Raskino and Burton, 2013)



**Figure 2.5: Hype Cycle with technologies (Fenn, Raskino and Burton, 2013, p. 6)**

Applying the hype cycle model to MOOCs is instructive but problematic. It is possible to trace the development of MOOCs as a whole in terms of the cycle although Epelboin (2015) mentions the view that MOOCs are disappearing from the hype cycle before reaching the plateau of productivity. However, MOOCs are considerably contributing to the international reputation of institutions, and as Yuan and Powell (2013) point out, they provide institutions the opportunity to increase access to Higher Education. Furthermore, MOOCs have led research to focus on enhancing e-learning pedagogy to a large extent as seen in section 2.6 of this chapter, and have reinvigorated debate about the nature of e-learning at a time when VLEs had themselves become very well established.

It is certainly possible to point to examples of MOOCs being identified as being on the “innovation trigger” and “peak of inflated expectations” when they were introduced: Lombardi (2013) for example described them as a ‘tsunami’ in education. However, the “trough of disillusionment” has also been evident: there have been critical arguments against MOOCs



citing low completion rates (Daniel, 2012), their inability to support conceptual learning (Armstrong, 2012) and the ability of the institutions to cover the costs of providing MOOCs (Liyanagunawardena, Lundqvist and Williams, 2015).

However, MOOCs can now be seen on the slope of enlightenment because solutions are being researched and implemented for the barriers to MOOCs' success to be overcome (Hill, 2013a; Yuan, Powell and Oliver, 2014; Witthaus, dos Santos, Childs, Tannhäuser, Conole, Nkuyubwatsi, Punie, 2016). It is MOOCs' ability to enhance access to higher education that is enabling MOOCs to continue to develop rapidly in response to the demands of their users and it could be argued that in some settings they have rapidly reached their 'plateau of productivity' (Hicken, 2017).

However, much of the 'hype' has been concerned with MOOCs in very general terms, and it is important to note that many of the elements of MOOCs and the tools on which they are based are already well-established and individually would be firmly at stage 5 of the cycle. Indeed, each one of these tools would have had its own hype cycle meaning that MOOCs are perhaps better thought of as a combination of multiple hype cycles, some of which have already settled. At the same time, it is important to note that the shapes of the hype cycles of different technological tools would not necessarily be the same. This is because some technologies may be rapidly seen to be useful and hence enter the "slope of enlightenment" quicker. On the other hand, other technologies may have a steeper "trough of disillusionment" due to aspects such as lack of funds or need. Thus complex and composite technologies such as VLE's and MOOCs will themselves be constantly evolving as their component parts advance along their own hype cycles.

The established tools on a MOOC such as online messaging or emails became widely used and avoided the 'trough of disillusionment' due to technical developments such as user interfaces and standardisation of transfer protocols (Partridge, 2008). Online video has had

a more uneven development with initial enthusiasm in the late 1990's being effected by issues around bandwidth, quality and funding models (Santos, Rocha, Rezende, and Loureiro, 2007). The appearance of Youtube in 2005 against a background of much improved network infrastructure and the initial investment that its founders obtained from a venture capital firm and later from Google (which bought Youtube in 2006) meant that online video is now firmly established both in general and as a component of MOOCs.

Other patterns of development have involved changes in functionality of technological components: a good example is the online (asynchronous) discussion forum, which have existed in some form since the appearance of the internet. While not extensively 'hyped', online discussion forums have been able to remain a key internet technology because of the various uses that they fulfil in business, educational and entertainment; and because of their evolution from text-based systems to the multimedia discussion spaces of current social networks and collaborative workspaces, which in turn can be built into MOOCs.

At the same time, some of the components of MOOCs are much more novel: "activity stream analysis", for example is at the "slope of enlightenment" stage, according to the Gartner model shown above. Although it stems from social media where it is used to determine the activity levels of individuals, it is now being used in business settings and in online educational platforms as part of the more general development of 'big data' and learning analytics. Govaertz, Cao, Vozniuk, Holzer, Garbi Zutin, San Cristobal Ruiz (2013) discuss how learning analytics, combined with data 'dashboards' are being used on online courses such as MOOCs to determine what learners do, to analyse patterns of interaction , and to explore reasons for the retention and drop-out of learners.

The application of the concept of 'hype cycle' to MOOCs is, therefore, challenging. What it does contribute to this study is an awareness that the novelty of MOOCs, and the media coverage of their role in education, may have an impact on organisations and individuals

who may be affected by over-enthusiasm and unrealistic expectations. In addition, it highlights a need to not simply explore attitudes towards MOOCs as a whole, but instead to explore the perceived values of the features they offer and the patterns of interaction they enable.

### **2.8.2 Diffusion of Innovation**

The idea of 'hype cycle' provides an expert (and media) perspective on technologies but sees users of technologies as passive. A more active user perspective is provided using Diffusion of Innovation Theory (Rogers, 1962). Diffusion of Innovation Theory (DIT) explains how an innovation is adopted by the public. There are those who are the first to adopt, that is the 'Innovators' who are followed by 'Early Adopters' who use the innovation fairly early. The majority of the people would be the 'Early Majority' or 'Late Majority'. The Late Majority will tend to adopt the innovation after others have tried it and it is established: in terms of 'hype cycle', they will adopt technologies when they have already 'plateaued'. 'Laggards' are quite rigidly attached to existing practices and technologies and may not adopt a new innovation at all.

The limitation of DIT is that it is most appropriate for mass technologies which 'diffuse' through populations: while this makes it a possible way of analysing internet use, smart-

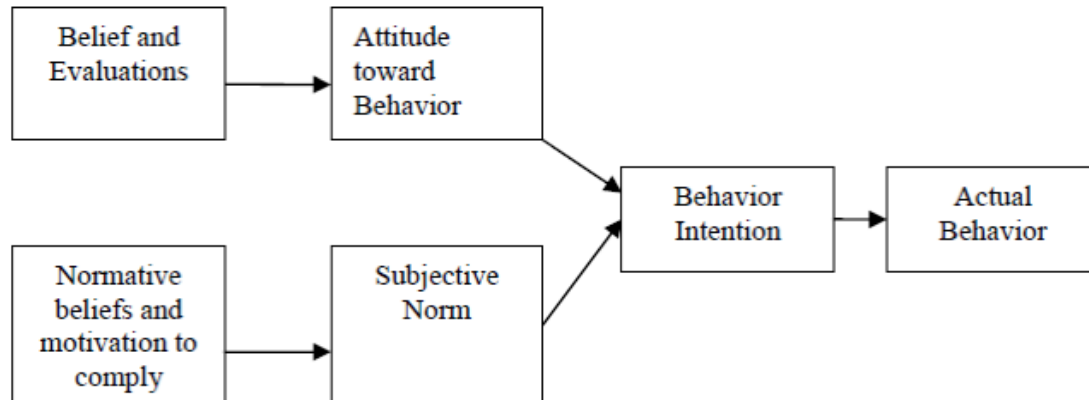
phones or social media, it is a less good match for MOOCs where institutional and organisational aspects, as well as their complexity makes adoption less simple than a process of buying a device or enrolling in an online service.

Although there many individuals may have enrolled in MOOCs, this does not mean that they have fully adopted them (as 'Hype Cycle' models would suggest). As discussed above MOOCs are dynamic, complex and emergent and as Wolfe (1994) points out, DIT does not cater for the changing nature of some innovations. Lyytinen and Damsgaard (2001) discuss how institutions' choice of accepting complex technologies such as EDI (Electronic Data Interchange) depends on a range of factors; they would have to look at the time and effort required, conduct cost-benefit analyses, and assess what their competitors are doing. Similarly, when institutions are considering MOOCs, their decision to adopt it would include business decisions. This suggests that some theory of reasoned action, which can account for the more complex reasons behind the acceptance and adoption of technologies, is required. Such explanations, more appropriate for the adoption of MOOCs, are offered by Technology Acceptance Models.

### **2.8.3 Technology Acceptance Models**

Technology Acceptance Models form part of a line of development of different models explaining the behaviours of people towards technology. TAM bears resemblances to more general Theory of Reasoned Action (TRA) (Fishbein and Ajzen, 1975) and developments of TRA such as Theory of Planned Behaviour (TPB) Ajzen (1991). TRA is a common starting point in discussions of models explaining behaviours towards using a technology. The model describes how the actual behaviour of a user is determined by his/her intention to behave. The intention to behave is influenced by the attitude towards the behaviour and subjective norm. While attitude towards the behaviour is affected by the belief and evaluations of the individual, the subjective norm is related to the normative beliefs and motivation to comply.

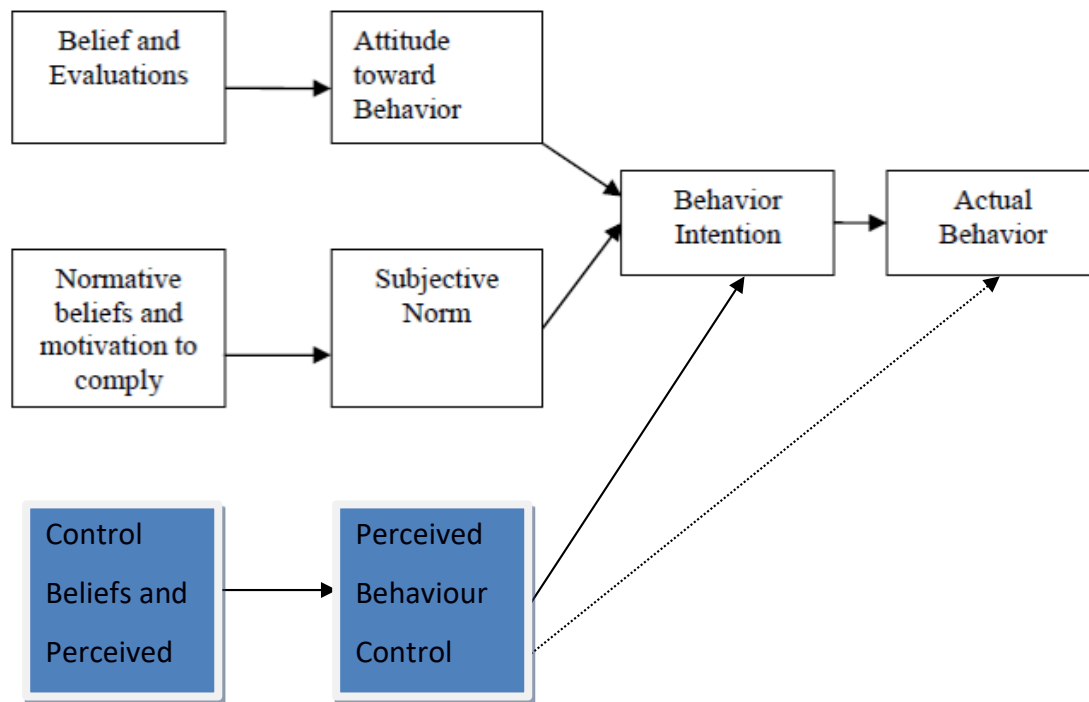
This can be illustrated as follows:



**Figure 2.6: Theory of Reasoned Action (Fishbein and Ajzen, 1975, p. 216)**

TRA has been used by many researchers to build their own theory or model on behaviour towards new technology, tool or innovation. The key criticisms of TRA are that it is too general (Davis, Bagozzi, Warshaw, 1989) and that it assumes that an individual has full control over his/her behaviour (Kurland, 1995). As Davis et al (1989) point out, the generality of the model does not account for a number of factors that affect the above mentioned behaviour. One such factor will then be systematic constraints, in concurrence with Kurland's (1995) findings regarding other aspects ignored by TRA. In an attempt to improve TRA by addressing the limitations, Ajzen (1991) creates the Theory of Planned Behaviour (TPB).

TPB is then an extension of TRA and accounts for situations where the individual has no choice with regards to using the new tool. Therefore there are two elements added to the TRA to form the TBA namely the control beliefs and perceived facilitation which influence the perceived behaviour control. The combination can be illustrated as follows:



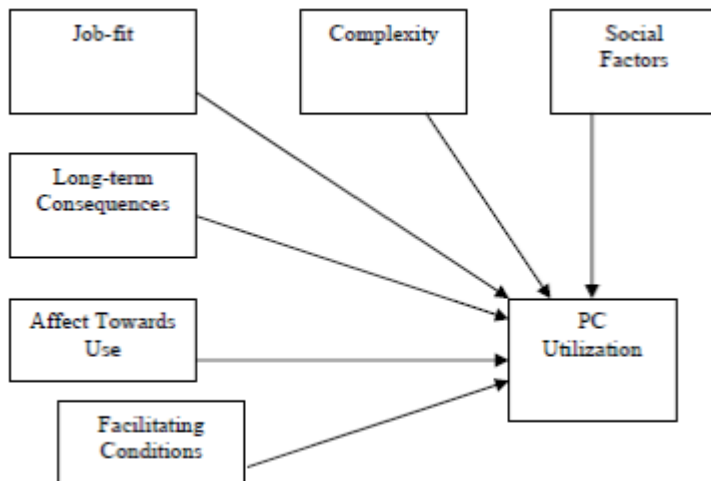
**Figure 2.7: The Theory of Planned Behaviour (Ajzen, 1991, p. 182)**

Two important criticisms about TPB are mentioned by Egmond and Bruel (2007). Firstly they discuss about how the human behaviour is complex and cannot be explained using the components included in TPB. They identify social and moral factors which interestingly are also mentioned in other models created and which are discussed in later parts of this section. They further state how the users' thoughts may be affected by emotional bonds that they create with certain goods. It is then clear that the model is still simplistic.

#### **2.8.4 The Model of PC Utilisation and Technology Acceptance Model (TAM)**

A number of theories and models are specific to the adoption and acceptance of technologies specifically. Thompson, Higgins and Howell (1991) adapt Triandis' theory of attitudes and behaviour to account for patterns of personal computer use. Triandis (1977) takes into consideration the affective elements of a decision to be made about a behaviour. He mentions that an individual decides how to behave towards a tool by considering "...what

people would like to do (attitudes), what they think they should do (social norms), what they have usually done (habits), and by the expected consequences of their behavior” (Thompson et al., 1991, p. 126). Thompson et al (1991), in fact simplifies Triandis’s (1977) theory to identify six key factors affecting PC utilisation. This can be illustrated as follows:

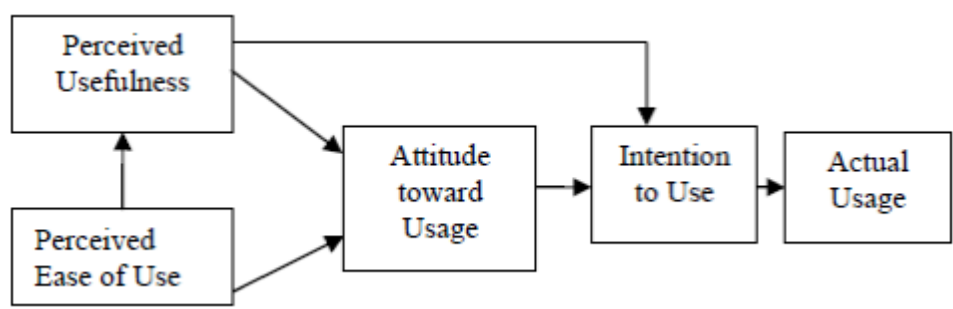


**Figure 2.8: The Model of PC Utilisation (Thompson et al., 1991, p.125)**

It can be seen that the model considers both practical and affective and social aspects. We therefore have how well the tool is useful for the individual’s job purposes (job-fit), how useful it will be in the long term (long term consequences), how easy it is to use (complexity) and help that is received to use it (facilitating conditions). On the other hand there are social and affective factors which are “individual’s internalization of the reference group’s subjective culture, and specific interpersonal agreements that the individual has made with others, in specific social situations” and “feelings of joy, elation, or pleasure, or depression, disgust, displeasure, or hate associated by an individual with a particular act” respectively (Thompson et al., 1991, p. 126-127).

While TRA and TBA do not consider social, emotional and moral factors, the model of PC Utilisation attempts to account for these factors. The Model of PC Utilisation also has an

element in terms of the complexity of the tool being used, and this is a key element in the next theoretical framework to be considered, TAM, or the Technology Acceptance Model. The simplest TAM model, which was originally designed to explore the acceptance of email systems (Davis, 1989), can be illustrated as follows:



**Figure 2.9: Technology Acceptance Model (Davis, 1989, p. 320)**

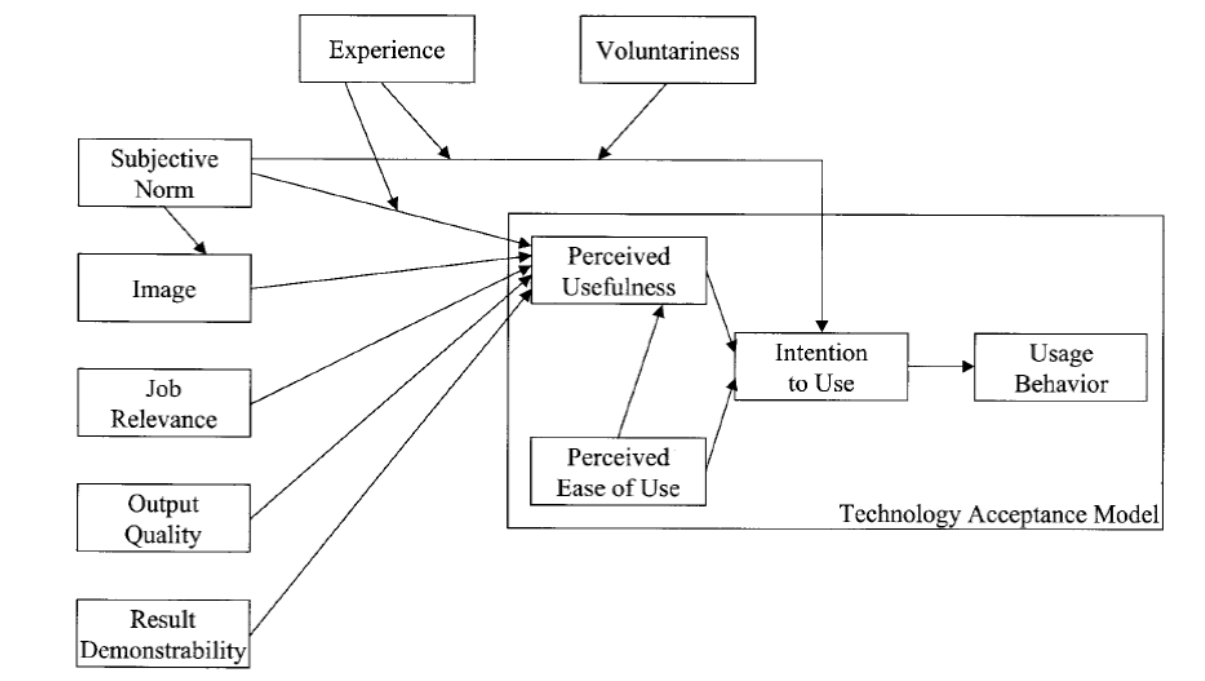
TAM's two key components are perceived ease of use and perceived usefulness. Perceived ease of use is how the extent to which the user thinks that the tool is easy to use given their existing levels of familiarity and expertise; the notion of perceived usefulness is based on TRA's expectancy-value model and therefore is how the user expects the tool to be useful for his/her job. Again, we see a lack of consideration for social and emotional factors. The need to further develop TAM was recognised and has been addressed in different ways. This accounts for hybrid models which combine TAM with other theoretical frameworks such as Taylor and Todd (1995b) who combine TAM with TPB; Wixom and Todd (2005) who combine TAM and User Satisfaction models; Moore and Benbasat (1996), who integrate Innovation Diffusion Theory (IDT) and TAM in attempting to explain acceptance of technology; and Shih (2004) who extends TAM to generate a Model of Internet Utilisation Behaviour.



### **2.8.5 Developments of TAM**

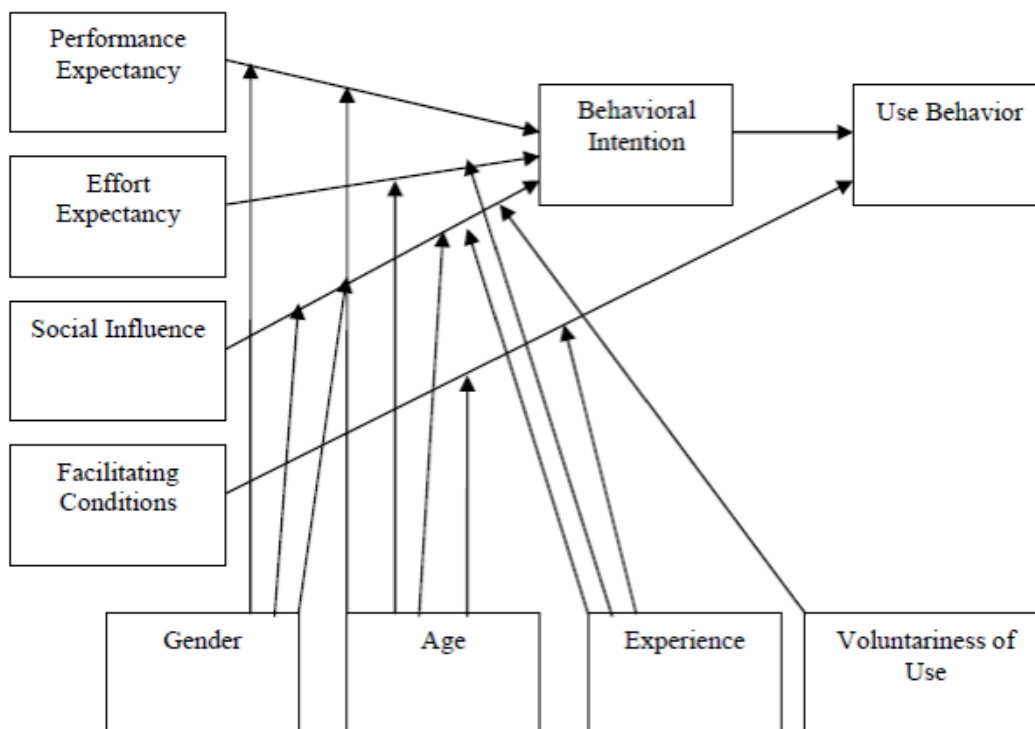
A significant development comes with the application of Bandura's (1995) Social Cognitive Theory to technology acceptance, whereby social, cognitive and other factors come into the mix of aspects that influence behaviours towards technology. It also introduces the notion that the influences are not unidirectional. Social Cognitive Theory (SCT) can be seen as the umbrella under which TAM extensions have been developed. As mentioned before, SCT includes social, cognitive and other factors as aspects that influence behaviours towards technology, and the interactions between by the person, his/her behaviour and the environment.

Venkatesh and Davis, (2000) propose TAM2, which extends the original TAM model there by integrating concepts from other theoretical models (TRA, TPB, SCT) such as subjective norm, image, job relevance, output quality and result demonstrability as affecting perceived usefulness. Perceived ease of use is also seen to influence perceived usefulness. Subjective norm additionally influences image and has a direct impact on intention to use. The model also includes experience and voluntariness. While experience influences the user's subjective norm that impacts on his/her perceived ease of use and that impacts on the user's intention to use, voluntariness affects his/her subjective norm that impacts on his/her intention to use.



**Figure 2.10: Technology Acceptance Model 2 (TAM2) (Venkatesh and Davis, 2000, p. 188)**

Further work to generate a hybrid model of technology acceptance led to the development by Venkatesh, Morris, Davis and Davis's (2003) of a Unified Theory of Acceptance and Use of Technology (UTAUT).



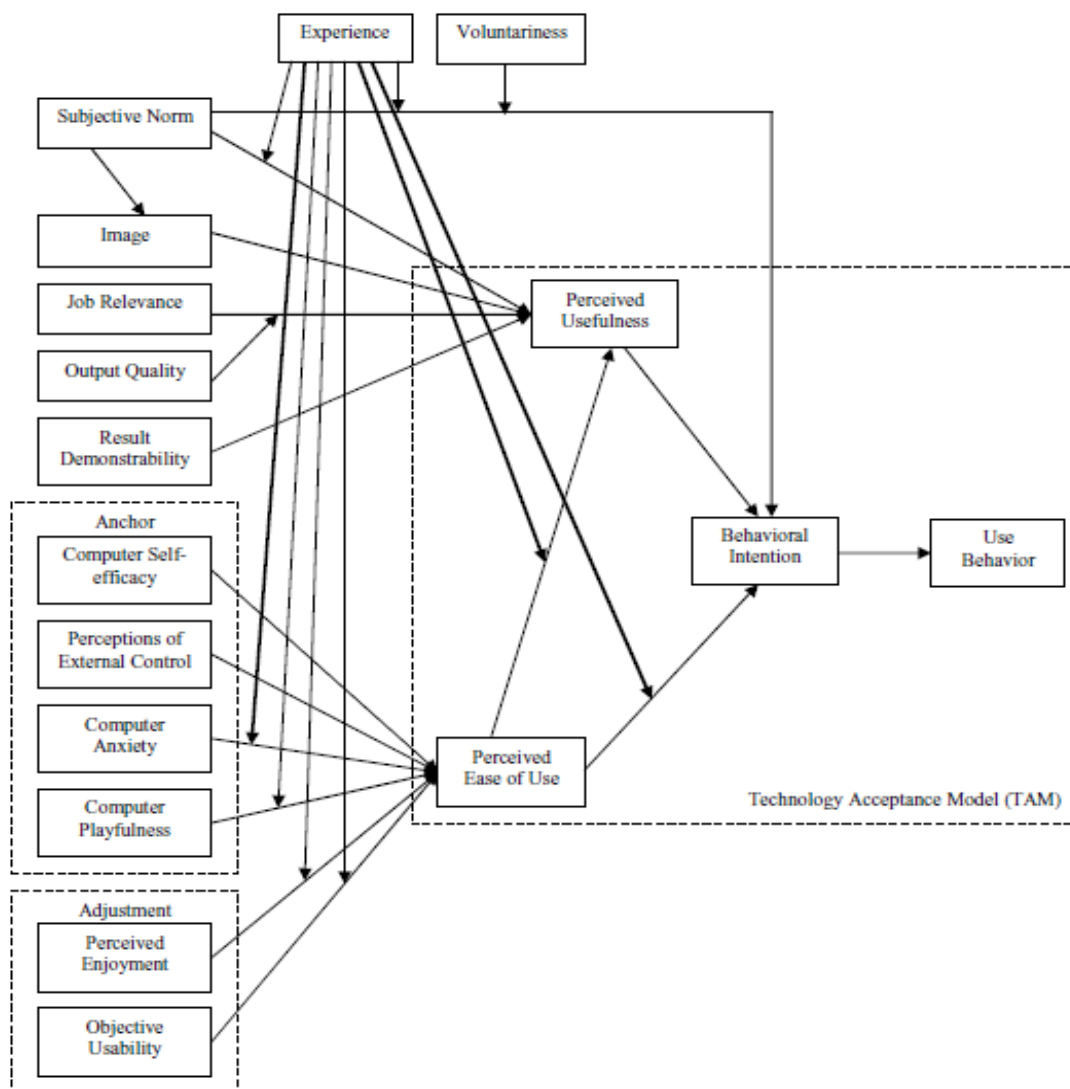
**Figure 2.11: The Unified Theory of Acceptance and Use of Technology (UTAUT)**  
**(Venkatesh et al., 2003, p. 447)**

The UTAUT is a combination of the elements from TAM, Motivational Model (developed by Davis and Warshaw in 1992 to explain how users are extrinsically motivated by external factors and intrinsically motivated by internal factors to use a tool), TPB, the Model of PC Utilisation, IDT and SCT (Al-Mamary, Al-Nashmi, Hassan, and Shamsuddin, 2016). The UTAUT's key components are performance expectancy, effort expectancy, social influence and facilitating conditions. Performance expectancy is the extent to which the tool enhances the job performance of the user (Venkatesh et al, 2003) and the behaviour of the user without influencing his/her intention to behave.

Another hybrid model was attempted by Shih (2004) who combines TAM with an information behaviour model which explains how people search for information on the Web for specific

purposes (Choo, Detlor and Turnbull, 1998). We then have a third extension of the TAM carried out by Venkatesh and Bala (2008) called TAM3.

While in TAM2, the focus was more on perceived usefulness, in TAM3, Venkatesh and Bala (2008) extend TAM2 by adding the determinants of perceived ease of use as shown in Figure 2.12).



**Figure 2.12: Technology Acceptance Model 3 (TAM3) (Venkatesh and Bala, 2008, p.280)**

### **2.8.6 Application of TAM Models**

More recent research on TAM involves its extensions to investigate how particular groups of people accept a new technology, and so emphasis has been placed on identifying social and cultural inputs into the models. Use of the models has guided research both into students' acceptance of e-learning (Park, 2009) and blended learning (Hsieh, Lu and Lee, 2014) and teachers' use of technologies such as Learning Management Systems (Fathema, Shannon and Ross, 2015). Juhary (2014) also investigates Learning Management Systems (LMS), but from the point of view of students. In some very recent work, MOOCs have been investigated using TAM. Jae Hun Sa, Lee, Kang, Gim and Kim (2016) use TAM to understand the acceptance of MOOCs, and Tao and Liu (2016) discuss the contribution of MOOCs to teachers' attitude towards technology use in learning. Decman (2015) looks at the acceptance of MOOCs in a situation where the users are required to use a MOOC. It is also important to point out that, as May, Mort, Williams, Mair and Gask (2003) mention, policy makers may find technologies to be solutions to structural problems. However, as the authors found out in their assessment of the new technology called 'telehealthcare', the new tool may not be useful for the actual users. From what May et al (2003) discussed, the points of view of both the policy makers and the actual users seem to be needed if one wants to ensure the effective implementation of a technology.

In Park's (2009) work, the author, following Bandura, shows how self-efficacy and subjective norms are essential elements in accepting e-learning for users, as well as demonstrating the validity of TAM2 constructs in explaining the behaviour of users towards technology. The validation of TAM is also demonstrated by Hsieh, Lu and Lee (2014) who conduct a number of analyses which also validate TAM as a useful tool to better understand the attitude and behaviour of users towards blended learning. Tove (2014) combines TAM and the Principal Agency Theory (PAT) to show how motivated leaders and managers (the 'principals') are an important contextual factor as they ask teachers (the agents) to carry out actions and implement change. He uses this hybrid model to explain the behaviour of teachers towards

technology. It can therefore, be seen that the teachers' perspective is being considered by Tove (2014). Decman (2015) uses the Unified Theory of Acceptance and Use of Technology (UTAUT) in the context of a mandatory virtual learning environment and shows how a person is influenced by the society and how they are expected to perform will affect their intention to use a particular technology. Decman (2015) concludes that young students in particular are enthusiastic about the use of new technology if their performance is expected to increase as a result of that use.

Jae Hun Sa, Lee, Kang, Gim and Kim (2016) and Tao and Liu (2016) evaluate the factors that would affect MOOC's use. While Jae Hun Sa et al (2016) conclude that perceived ease of use and perceived usefulness do impact on the users' acceptance of MOOCs, Tao and Liu (2016) highlight the importance of teachers experience in enabling them to accept MOOCs. Both researches are based on TAM, similar to the other works discussed above. However, the acceptance of technologies has also been tested using models other than TAM.

### **2.8.7 Combining TAM and Pedagogical Models**

While there have been many attempts to develop models to explain technology acceptance either by including more factors and elements, or by creating hybrids, no single model explores pedagogical practices or patterns online presence as potential factors in determining whether a technology is accepted. Models are either very specific and take little notice of social and cultural factors (as with the original TAM applications); or they are very broad and attempt to include a range of contributory factors, but at the expense of specific local features and conditions. Teacher and learner attitudes or prior experience are factors in some TAM models, but not the ways in which these are translated into practice.

What this research is concerned with is the question of how the kinds of pedagogical interactions and experiences described by the Communities of Inquiry model contribute to

willingness to use an emergent technology, specifically MOOCs. My research therefore attempts to combine pedagogical model with a model of technology acceptance. While COI helps to analyse what happens on an online course, it does not answer my research questions which also relate to acceptance of MOOC as a new technology by individuals or organisations. The original TAM models do not account for social and other similar factors, while UTAUT and TAM3 on the other hand are overly complex for the purposes of my project; TAM2, however, has been well validated and applied to technology acceptance in different cultural settings.

While they are models with different scope, there are points of intersection between TAM2 and COI. TAM2's concept of 'Image' has similarities with COI's Social Presence and TAM2's 'result demonstrability' links with the idea in COI's Cognitive Presence of 'Resolution' because it helps to identify demonstrable results for the task being handled. The notion of 'Ease of Use' that is so central to TAM models may be influenced both by the design of the environment (one aspect of the COI idea of Teaching Presence) as well as the level of support that is provided either by other users (Social Presence) or instructors (Teaching Presence).

## **2.9 Technology Acceptance, Business Models and MOOCs**

This research study is not simply concerned with the adoption by individual teachers or learners of a new technology, MOOCs. Instead, it is also concerned with the factors that might support the introduction of MOOCs in the context of Mauritian Higher Education, so it is important that institutional, organisational and sector-wide perspectives are considered. As technologies which might be adopted as part of university strategy, the 'reasoned actions' that have to be thought about are not just those of teachers and learners but also university leaders. What this means is that the TAM2 model can be thought of a way of informing and understanding attitudes and decisions of educational leaders and policy makers, with the pedagogical aspects as one of the contributory factors in their decision making.

Issues that have already been discussed such as the level of learning, low success rates, drop-out rates, reliability of assessment, and the large numbers of learners involved in MOOCs therefore become part of technology acceptance as part of broader business planning. Issues around the individualisation of MOOC content to reduce drop-out rates (as proposed by Huin, Bergheaud, Codina and Disson, 2016), and their costs, will have a bearing these decisions, particularly if the aim is to respond to the needs of Mauritian learners.

If MOOCs are to be used to enable potential learners to access higher education as part of a broader commitment to life-long learning, it is important to consider both those who have not finished high school and require additional support, and older people who may access MOOCs to fill skills gaps: Liyanagunawardena and Williams (2016) discuss the extent to which the older generation is already participating in MOOCs. Although their research is more about how MOOCs can help reduce the isolation level of the older population, the need to consider the varied audience for MOOCs is critical and the pedagogy of the MOOCs might have to be adapted to suit their learning needs. What is appropriate pedagogical design and



what patterns of 'presence' might need to be supported may be key evidence in well-informed policy decisions.

At the same time, a main threat to the sustainability of MOOCs, however, has been identified as being their low revenue generating capability (Daniel, 2012). Despite the importance of 'hype', as we have discussed, the sustainability of a new technology largely depends on its revenue generating power. Although the ideal and original motivators for the creation of MOOC's was for learning to be open and easily accessible, for them to be accepted by organisations, they should have a viable financial basis. Discussions about a business model for MOOCs are consistently current in the MOOC world and there are different business models that are developed for sustainability purposes.

One possible business model for MOOCs is certification (Daniel, 2012). Certification, however, seems paradoxical since universities offering the MOOC (which is free) may not want to offer certification to the MOOC learners as this may decrease the value of the learning obtained on similar courses by high tuition fee paying on-campus learners. This may account for MOOC providers moving away from Higher Education to professional development (Hill, 2013a). Therefore as mentioned by Yuan, Powell and Olivier (2014), to use MOOCs to get a marketing edge, HE institutions will have to develop credit and award bearing modules with the required support for the learners involved, and with the associated costs.

A second business model is "Freemium to Premium". This is when the course is freely offered; however, if a learner wants additional (Premium) products or services, such as assignments and assessments, or for having human tutorials, they need to pay a fee. Such a model has been adapted in other online services, and is based on the idea that as people use free products the demand for the premium product increases. Furthermore, in terms of MOOC platforms, xMOOC providers also have a Freemium to Premium system which is

done by partnering with elite universities to provide free courses. Then there are partnerships with other universities to embed these free courses in their fee paying ones in exchange for payment for using the content of the free courses. Therefore these institutions can reduce their costs of providing for a course while being confident that the content provided is of a high quality. The cost of providing the free course is covered via certification, licensing course materials, tuition fees or credit based courses (Yuan, Powell and Olivier, 2014; Witthaus, dos Santos, Childs, Tannhäuser, Conole, Nkuyubwatsi, Punie, 2016). Additionally, MOOC providers receive a fee every time a user buys products or services through the websites of the commercial providers which sponsor the courses. As Liyanagunawardena, Lundqvist and Williams (2015) mention, this model is used by Coursera which offers a verified certificate after completion to students who pay a fee at the start of the course. Liyanagunawardena, Lundqvist and Williams (2015) also discuss initiative such as tuition fee grants and sponsorships from potential employers as parts of a possible business model, which might be an appropriate model in development country contexts and is therefore relevant to my interest in implementing MOOCs in Mauritius.

While for Freemium to Premium models, there is one institution involved, another business model involving more than one institution involves "unbundling" and "rebundling" of courses (Yuan, Powell and Olivier, 2014). Unbundling is when the activities of the university are not entirely carried out by that institution. Instead, while the institution retains certain key responsibilities such as content and accreditation; while assessment may be carried out by a partner; and the delivery, marketing and recruitment can be done by another. Mauritian institutions, for example, could use the rebundling process by contextualising the free courses within their curriculum to award their certificates. Also, the platforms can also be sold to other companies to use the contents for their own training courses.

The challenge to these business models is that they may be in opposition to the factors that motivate learners and stakeholders to participate in MOOCs (White, Davis, Dickens, Leon,

Sanchez-Vera, 2014). White et al (2014) have also looked into the motivation of higher education institutions to have MOOCs. They found that the institutions who realise the change in the landscape of education due to e-learning and then due to MOOCs forces them to investigate the MOOC phenomenon. For them the motivation comes from how they have to react to any change that MOOCs might generate so as not to lose their markets. White et al (2014) predict that in the near future universities will create MOOCs as a way to enhance rather than replace the education that they provide. Looking even more widely, Lin's (2013) PEST (political, economical, social and technological factors) analysis indicates how MOOCs can be of interest nationally. For this reason, the Mauritian policy agenda forms an important aspect of this research. Acceptance of MOOCs depends not only on Mauritian teacher and learners but on other stakeholders who have the ability to specify and implement the MOOCs that the Mauritian learners require.

## **2.10 Literature leading to research aim and objectives**

The aim of the research is to develop a model of pedagogy to ensure the smooth implementation of MOOCs in Mauritius. Among the models reviewed, COI was seen to be a good basis to develop the pedagogical model for the implementation of MOOCs in Mauritius. The pedagogy is for the learners. Therefore, it is important to determine what they think about MOOC in terms of the pedagogy present on it. Consequently, the first research objective is to explore the importance attached to indicators, (as defined by Garrison et al, 2000) by Mauritian HE (Higher Education) students. However, COI would not provide the information needed in terms of how Mauritian learners can accept MOOC as a new technology. Consequently, a technology acceptance model (TAM2) is used to explore the extent to which specific presence indicators contribute to attitudes towards and acceptance of e-learning environments including MOOCs. Once, the needs and expectations of the Mauritian learners are determined in terms of presence and technology acceptance indicators, the research reviews the extent to which current MOOCs allow specific presence

indicators and technology acceptance factors to be implemented. Then based on the data analysis, the research offers an evidence-based assessment of the potential of MOOCs in Mauritian HE and to make recommendations about features that will address any challenges identified and contribute to their adoption, student enrolment and positive learning experiences.

To be able to achieve the above mentioned research objectives, data is collected and analysed using a technical audit of MOOC features, interviews conducted with Mauritian learners an educational leaders and a policy maker and questionnaires to Mauritian learners to determine whether their COI needs are met by current MOOCs. A tool, which can assess the extent to which courses can be converted into MOOCs, is also developed. The tools used to achieve each research objective are elaborated upon in the methodology chapter. Before that, the philosophical stance of the research is justified.

## Chapter 3: Philosophical Stance

As outlined at the end of chapter 2, the research aim and its objectives:

“To offer an evidence-based assessment of the potential of MOOCs in Mauritian Higher Education and to make recommendations about features that will address any challenges identified and contribute to their adoption, student enrolment, retention and positive learning experiences and outcomes.” The research objectives are:

1. To explore the importance attached to indicators, (as defined by Garrison et al, 2000) by Mauritian HE (Higher Education) students
2. To explore the extent to which specific presence indicators contribute to attitudes towards and acceptance of e-learning environments including MOOCs
3. To review the extent to which current MOOCs allow specific presence indicators and technology acceptance factors to be implemented
4. To offer an evidence-based assessment of the potential of MOOCs in Mauritian HE and to make recommendations about features that will address any challenges identified and contribute to their adoption, student enrolment and positive learning experiences.

As the literature review has shown, most research on MOOCs to date has been concerned with their global aspects (Armstrong,2012), and has focused on key indicators such as enrolment and retention (Daniel, 2012; Agarwala, 2013; Jordan, 2014) and macroeconomic aspects of MOOC implementation (Lin, 2013).

Furthermore, while other research has focused on specific stakeholders including instructional designers (Breslow, Pritchard, DeBoer, Stump, Ho and Seaton, 2013), teachers (Bayne and Ross, 2014; Mackness et al, 2010), students (Bayne and Ross, 2014; Knox, 2014) or institutional business leaders (Hill, 2013a; Yuan, Powell and Olivier, 2014) there

have been relatively few detailed case studies that consider all of these perspectives in an institutional and cultural context. In addition this study will use established frameworks for the study of e-learning (COI) and emergent technologies (specifically TAM2) to study MOOCs, locating them against broader patterns of increasing distance and e-learning and the changing pedagogical developments and learner experiences that they have brought about.

The dominant research paradigm for the study of MOOCs has, therefore, been a realist one using learning analytics approaches to study large student cohorts, with a secondary, critical strand of research exemplified by the work of Bayne and Knox, that interrogates some of the assumptions behind the design and uptake of MOOCs. This study is unusual then, in that it uses a phenomenographic, interpretivist approach that explores multiple perspectives, and focuses on pedagogical preferences and practices.

This chapter positions the study as relativist, interpretivist, phenomenographical, and using mixed methods, although qualitative approaches are most important.

### **3.1 Nominalistic and relativist ontology**

This research has a nominalistic and relativist ontological basis. If epistemology is concerned with the type of knowledge that the research is looking for and values, then ontology defines the view of reality that is encapsulated in the research project. It is about what is considered to be existent, how do the components exist, how they can be categorised and critically how they are “knowable”. According to Cohen, Manion and Morrison (2007) the two ontological extremes are realism and nominalism. While realists believe that a reality exists independent of the mind, a nominalist position considers reality to be dependent on consciousness. While the MOOC itself may exist as a set of digital tools and course content (thus giving a notion of ontological realism), for this research the ‘reality’ that is of interest is the perceptions, expectations and experiences of the different stakeholders. Therefore the reality we are exploring comes from the consciousness of these stakeholders and will not exist independently; also, groups of stakeholders, and individuals within those groups will have different expectations and experiences.

Furthermore, the fact that the term ‘MOOC’ has been so contested, and that the questions which have framed the literature review, have included ‘what is a MOOC?’, ‘is this a MOOC?’, ‘what kind of MOOC is this?’, also point towards a nominalist, rather than a realist position. So do the research questions, which focus on preferences, experiences and factors contributing to positive attitudes and adoption of MOOCs. We now move to the justification of the interpretivist paradigm of the current research study.

### **3.2 Research in an Interpretivist Paradigm**

Most research is identifiable with a particular paradigm, which, according to Guba (1990) provides a consistent underpinning for its ontological, epistemological and methodological perspectives. Similarly, Weaver and Olson's (2006, p. 460) state that "paradigms are patterns of beliefs and practices that regulate inquiry within a discipline by providing lenses, frames and processes through which investigation is accomplished". The justification of my research is based on Crotty's (1998) view on understanding the research process. Crotty (1998) identifies epistemology as the starting point justifying the philosophical stance of a research project. My research is justified as having an interpretivist epistemological position.

Following the argument made by Crotty (1998) that the development of a theoretical framework starts from the questions that one is asking and the knowledge that they implicitly or explicitly value, the research objective and questions outlined above suggest a broadly interpretivist epistemological position that values the varied and subjective experiences of MOOC users. Indeed the research is trying to find information on the kinds of interaction and support that the Mauritian learners feel they need on a MOOC and the implications for the introduction of MOOCs in Mauritius.

Interpretivism, with its concern to better understand the human condition (Taylor and Medina, 2013), bases its claims on trustworthiness and authenticity, in contrast to positivism's concerns with validity, reliability and objectivity (Guba and Lincoln, 1989).

The trustworthiness of the research is ensured through its credibility, dependability, transferability and confirmability (Guba and Lincoln, 1989). Firstly it is credible because it has robust approaches to sampling, data collection and analysis and is carried out by a researcher with knowledge of both technological and pedagogical aspects, and of local cultural norms. Secondly it has dependability due to its clear processes, transparent analysis approaches and strong empirical basis.



Furthermore, credibility and dependability are ensured through working extensively with the data and verifying interpretations of the data with the participants. The dependability of the data is also seen by the fact that they are collected using questions which are open-ended and consequently can better reflect the thoughts and experiences of the respondents. In terms of transferability, while the aim is not to generalise, the approaches could be used elsewhere and the findings generated will have relevance beyond the scope of the study itself (this would be described as external validity in a realist research design). Additionally, the results of the context of the research can be compared to similar contexts. Finally, my research has confirmability in that the findings could be corroborated by looking at original data and this is presented alongside the analysis (e.g. transcripts, data sets). My research therefore can be seen to address the criteria for trustworthiness.

The second category mentioned by Guba and Lincoln (1989) is that of authenticity, which they suggest is ensured through being fair, educative, catalytic and tactical (Guba and Lincoln, 1989). Firstly, the participants are treated and represented in a fair manner. They, like the researcher, will be able to reflect on their learning, their expectations of digital technologies and broader issues of social context from the research, and benefit from identifying the issues that relate to it, thus making the research educative. I finally ensure the authenticity of my research because it is catalytic and tactical since the participants are then given the opportunity of finding solutions to the issues that they discover. While not based on an 'action research' (Lewin, 1946) approach, the research seeks to develop insights and understandings that can then contribute to improved teaching and learning and to broader development of the education system and economy of Mauritius.

The research is exploratory both because, as the literature review has demonstrated, MOOCs are emergent and their educational potential is not fully understood; in fact in the course of the study the MOOC landscape evolved rapidly. Just as importantly, the Mauritian educational context is poorly understood and the role of MOOCs in developing country

contexts has been comparatively neglected. Empirical studies are rare, despite the extensive 'hype' about the global significance of MOOCs.

This is reflected in the research design, which evolved in the light of pilot findings; the requirements of participants; and the development of MOOCs. As such it seeks understanding rather than theory testing; explores rather than evaluates; and differs from much current literature on MOOCs by collecting data from different perspectives from experiences of different stakeholders. What also emerged in the course of the study (as will be discussed in later chapters) was that, despite the fact that many of the stakeholders and participants had some understanding of MOOCs, their background and their potential in educational settings, this was rather superficial. This made it necessary to use open-ended and exploratory approaches. These were seen as the most appropriate, although alternative approaches were considered.

### **3.3 Alternative Approaches**

A number of alternative approaches were considered as follows.

#### **3.3.1 Positivist Approaches**

Crotty (1998) states that positivism seeks to be objective, and hence it would be ontologically realist. It would have been possible to undertake a research using a positivist approach, following that taken by other research conducted on MOOCs, which has been more concerned with issues of enrolment, interaction and retention: for example, Shea, Li and Pickett (2006) and Shea, Pickett and Pelz (2003) conducted research which mainly used quantitative methods of data collection and analysis. More recent examples of quantitative research on MOOCs are Jordan's (2014) assessment of the enrolment and completion rates and Matkin's (2015) evaluation of what can be done with the data obtained from MOOC research.

When first coined by August Comte, the term positivism was said to be able to make predictions on the basis of observed events (Audi, 1995). As such, the possibility of

generalisation of a research results becomes important under positivism. Although positivist approaches have evolved, terms such as generalisation, testability, observable and non-observable criteria are still used in post-positivism (McKelvey, 2003). MOOCs in general and MOOCs in developing country contexts are not yet sufficiently established to allow the kinds of experimentation and theory testing that positivist, scientific methods involve (Taylor and Medina, 2013). Matkin (2015) describes how MOOC researchers are developing hypotheses to better understand different aspects of MOOCs such as completion rates. However, this is based on working with existing data generated from MOOCs themselves, and therefore quantitative analysis is possible, particularly when the possible outcomes can easily be measured (as is the case with enrolments, retention, completion of courses and time spent online, for example). In this study students have little experience of using MOOCs and the sample sizes are small. Consequently if the MOOCs were to be researched in the Mauritian context from a positivist perspective, any data generated from their use would be of questionable validity.

More importantly, while some patterns of MOOC use could be observed or measured through collection of scientific data, the ways in which they are experienced can only be identified through qualitative exploration of the views and experiences of the users of the MOOCs. In other words, we can put many tools online, but their effectiveness of providing effective educational experiences can be understood only through exploration of the perspectives of their users. This fits in the definition of qualitative and interpretive research in the sense that we are looking for in depth information to capture what the Mauritian learners and other stakeholders feel in terms of MOOCs and analysing any emergent data from the research, as opposed to testing hypotheses (Hoepfl, 1997; Ospina and Wagner, 2004; Palys and Atchinson, 2012).

Since the focus of this PhD is the experiences and expectations of MOOCs it is more exploratory and concerned with theory formation, and not theory testing. However, the

outcomes of this study might contribute to future experimental tests or trials by establishing the validated criteria and outcome measures.

### **3.3.2 Post-Modernist Approaches**

A very different approach that might have been taken would be to have drawn on post-modernist theories and to focus more on how the rhetoric around MOOCs which were discussed in Chapter 2 has developed and been applied, and on how teacher and student identity are constructed. There are some elements of a post-modern, critical approach in this study as it is attempting to go beyond popular ideas about MOOCs and trying to see from the perspectives of Mauritian stakeholders how they feel about MOOCs and how they want their MOOC experience to be. The idea of 'presence' is also, as described in Chapter 2, open to critical interrogation.

What this study does that is different from many accounts of MOOCs is that it will explore the point of view of the users, in their own respective contexts, rather than trying to define an ideal type of user. Post modernist approaches encourage critiquing the established structures set for a particular idea (Crotty, 1998). Indeed the idea under critique here is that MOOCs, as they stand, with its current tools and teaching, social and cognitive presences, are appropriate for all learners from all around the world. This follows the argument made by Bayne and Ross (2014) who describe the need to have MOOCs which are relevant at a "micro level" (p. 8) rather than devising online courses that would supposedly be appropriate for all types of learners. Knox (2014) also identifies the importance of accounting for different types of audiences for MOOCs. At the same time, the aim of this study is to inform the implementation of MOOCs, so there is also a concern to link these subjective experiences to policy concerns; there are post-modern and critical aspects to it, but the study is better thought of as a broader exploratory and interpretive one.

### **3.4 Interpretivist Research Traditions**

The study is, then, predominantly interpretivist, although it draws on post-modernist critical approaches, and, as we shall see, it combines methods, including some quantitative approaches 'in a qualitative way' (Mason, 2006).

Within interpretivism, there are different traditions and approaches, of which a phenomenological and phenomenographical one is the interpretivist route being taken.

#### **3.4.1 Interpretivism and phenomenology**

Phenomenology, along with symbolic interactionism and hermenutics, represent major traditions in interpretivism (Crotty, 1998). Phenomenology involves reflective analysis of experiences (Moustakas, 1994) and is widely used in research where the goals are to understand the meanings of human experiences (Creswell, 1998).

Starting again from the study's research questions, it is phenomenology that is the most appropriate framing as it is "...a study of people's subjective and everyday experiences" (Crotty, 1998, p. 83). This research involves the use of methods that allow participants to voice their genuine experiences with regards to MOOCs. However it has to be robust enough to inform technical implementations, staff and policy decisions. The study fulfils the four concepts of phenomenology identified by Crotty (1998) as follows:

- Firstly, there is the process of bracketing whereby the ideas that are preconceived with regards to MOOCs do not affect the analysis of the data.
- Secondly, there is intuition where the understanding of the phenomenon (which in this case is the MOOC experience) is entirely based on the experience of the stakeholders.
- Thirdly, the analysis is done in a thematic manner whereby there is coding and categorising to make sense of the data.
- Finally the phenomenon, which is the MOOC, is described from the point of view of

the stakeholders.

The other two interpretative traditions mentioned by Crotty (1998) namely symbolic interactionism and hermeneutics are of less relevance to this research project.

### **3.4.2 Symbolic Interactionism**

Symbolic interaction is based on the assumption that knowledge depends on the social interactions within a culture (Blumer, 1969). The notion of culture is very important for this research about MOOCs for Mauritian students because it is assumed that how the learners perceive MOOCs will depend on their social context. Although there are aspects of symbolic interactionism, it is not the best route of interpretivism for my MOOC research because these aspects are not the focus of the study. Indeed the research does have Goffman's (1959) dramaturgical approach whereby the students, teachers and other stakeholders have definite roles and the research does try to interpret the stakeholders' views of these roles. However, it focuses on the implementation of MOOCs and not the study of the roles mentioned above. An aspect to be considered at this point is that according to Crotty (1998) symbolic interactionism has also given rise to Grounded Theory (Glaser and Strauss, 1967). This involves data collected being analysed in careful steps to identify patterns which form categories. It would have been possible to explore the experience of teachers and learners in a MOOC using grounded theory approaches, and grounded theory is well-established as a means of developing understandings of poorly-theorised areas. However, as discussed in Chapter 2, it is debatable whether the experience of users of MOOCs is so distinctive as to require entirely new theory development.

Although it is true that information is emerging from the data collected and themes are being identified through careful analysis of the data, the data are analysed using the broad aspects of the above two models as categories within which the analysis is done: this is thematic analysis, rather than grounded theory. Such use of the models is appropriate because they

help contextualise the data by providing categories to frame questions as well as to analyse the responses obtained.

### **3.4.3 Hermeneutics**

Hermeneutics emerged through attempts to interpret biblical texts (Crotty, 1998) and involves developing an understanding of the meanings behind the texts written and the underlying tones (Schleiermacher, 1998). It has been brought to modern context by Friedrich Ast and Friedrich Schleiermacher (cited in Ormiston and Schrift, 1990) who advance the meaning of the term hermeneutics to embrace explanations relating to human understanding a whole and not only texts. The idea of 'tone' is potentially useful, however, as it reminds us that statements from participants need to be considered in terms of tones, expression and culture. In agreement with Dilthey's views (cited by Crotty, 1998), the ways that the Mauritian learners respond and what they say are influenced by their own experience and that of their culture, and attitudes and prejudices reflect broader culture. Thus the responses of the Mauritian learners have the possibility of being influenced by the Mauritian culture in terms of what being a student and being a teacher entail.

Although I need to be able to be sensitive to what the interviewees mean with regards to tones and expressions, this is not sufficient to describe the research as being hermeneutic. Being hermeneutic implies the centrality of text while my research is about the attitudes, preferences and experiences of the participants. As this study is seeking to explore MOOCs from different user and stakeholder perspectives, a phenomenological approach is more appropriate.

### 3.5 Phenomenography and Case Study

So far, this chapter has justified the subjective, interpretative and relativist position taken by the researcher. Although it critically approaches MOOCs and hence draws on post-modernist elements, the research is mainly interpretivist and phenomenological. Within this, rather than trying to seek out common features or 'essences' as some phenomenological approaches do, it draws on phenomenographical approaches that seek to explore the variety of experiences, of a common phenomenon, of multiple individuals or groups, and recognises that they may experience this in different ways (Larsson and Holmstrom, 2007).

As mentioned by Larsson and Holmstrom (2007), phenomenographic researches generally use interviews as a method of data collection. Since phenomenography is about understanding how a phenomenon is experienced by different people (Marton and Booth, 1997) semi-structured interviews are appropriate because they capture the thoughts and experiences of the varied participants. The participants of my research, namely students, educational leaders, a policy maker and teachers, may see the phenomenon of MOOC from different perspectives, and consequently, different interview questions are used based on the participants being interviewed.

Phenomenography is about interpreting the variations of experiences of a phenomenon (Marton and Booth, 1997). The respondents are in fact expressing their varying experiences of MOOC (the phenomenon). The experiences of the students are categorised into themes which are based on pre-existing models COI and TAM2 with the teacher, social and cognitive presences and elements of TAM. However the way that the Mauritian learners experience the MOOCs is seen at two levels in phenomenography (Orgill, 2002). Firstly, there is the external horizon that is the MOOC seen as a standalone phenomenon and not in the context of being delivered to Mauritian learners. Secondly the experience will be viewed internally that is the MOOC in relation with its internal components. Additionally, phenomenography implies non-dualism, that is the subject and object are not independent.



In the case of the Mauritian learners' experience on MOOCs they depend on the MOOCs' structure, content and delivery and the MOOCs should be as per the learners targeted. It is also important to note that in line with the phenomenographic aspect of the research, it does not involve the researcher point of view: rather it is about what the respondents think, feel and experience.

The questions asked and the lines of enquiry pursued are phenomenographic in nature because they are pragmatic and flexible, and aim to determine the experiences of different people of the same phenomenon (Marton, 1988, p. 179). Therefore they recognise objective realities but also the importance of multiple perspectives and experiences. Because the research is taking place in the context of Mauritian Higher Education Sector, and it is concerned with the role of MOOCs in that specific context, it has limited claims to generalisability. It can be thought of as a phenomenographic case study, exploring a particular 'case' from multiple perspectives and drawing on different research methods.

Nisbet and Watt (1984, p. 72, cited by Cohen et al, 2007, p. 253), define a case study as "a specific instance that is frequently designed to illustrate a more general principle". However, my case study is "intrinsic" rather than "illustrative" (Stake, 1995) and represents a particular empirical unit (Ragin and Becker, 1992). Although Yin (2003) suggests that many researchers believe case studies to be exploratory (that is used at an early stage of a research, for example at the pilot phase), he argues that any research strategy can be "exploratory, descriptive or explanatory" (Yin, 2003, p. 3).

My research is therefore carried out as a case study where the case is that of Mauritian learners in the Higher Education sector in Mauritius. It is important, however, to define the boundaries of the case. As mentioned by Yin (2003), a case study should have boundaries or limitations that help in its description, although Stake (1995) argues that the boundaries may emerge in the course of an enquiry, as researchers become more aware of what is important.

The case studied for my research is bound by the structures of the educational system of Mauritius and the culture within which it exists. Nonetheless, at the same time, this research involves finding a way through the case in a more naturalistic way, as described by Stake (1995), and as Stake would suggest, indeed involves constructing the case rather than working with a predetermined idea of what it is. The case that emerges is embedded within the Higher Education sector of Mauritius (which provides an initial notion of what its boundaries might be) because the research aims at demonstrating how MOOCs can be adapted to particular groups of users. MOOCs currently offer a very generalized global model of education (although as was discussed in Chapter 2, the definition of what is or is not a MOOC has been problematic) and there is a tendency for such broadly-scoped technologies to fall into Woolgar's (1990) trap of catering for an idealised notion of 'the user'. However, different groups of users would have different needs, perceptions and expectations on MOOCs.

As Yin (2003) mentions, culture is another aspect of the context that defines a case study. As many authors have discussed, culture has significant impact on educational practice and experience, for example Zehr's (2010) findings on Hawaiian cultural influences on their education, Mohatt and Erickson's (1981) review of the cultural differences in teaching styles in an Odawa school, which links people's feelings and thoughts (influenced by culture) to how they act. Luckin and Weatherby (2012, p.6) use the ecology of resources model to explain how the context of a learner affects his/her e-learning experience. They purport that for an effective e-learning experience to be created, it is important to determine what resources are available within and outside of the e-learning community for a particular set of learners. Then the resources and the relationships among them can be used for the development of tools and activities to suit that particular set of online learners. Thus this research is a case study which takes account of cultural context; but it is specific, and bounded by the Mauritian Higher Education system. It is not an attempt to provide a case study of all learners in Mauritius, nor is it exploring cultural factors beyond the educational

system. This also aligns with the use of models such as TAM2, discussed in Chapter 2, which identify cultural influences on processes, rather than trying to model the whole of a culture.

This PhD research enables naturalistic generalisation (Stake, 1995) where the reader would determine similarities between his/her case to my case and decide upon the extent of generalisation. The case used for the research is not illustrative of what other developing countries definitely need. So, using the findings to state what would happen in other nations is not the purpose of this research. At the same time, the inability to generalise could have arisen due to over interpretation (Cohen et al, 2007) which would be the result of the case of Mauritius being too specific and unusual. However, even though the case is unusual, there are other small nations who are at a similar state of economic development, who can use the findings of this research. According to Nilmadhub (2017, p.1), some countries that are comparable to Mauritius are “Madagascar, Seychelles, Comoros, South Africa, Singapore, Cyprus and Estonia”, with Singapore and South Africa being how Mauritius aspires to be. Consequently, a naturalistic case study best describes how this PhD research is conducted.

A chronological case study approach (another possibility that was considered for the research design) would have been appropriate if the study was charting the introduction of the MOOC in Mauritius. As Yin (2003) suggests, a chronological case study enables the determination of a clear timeline in terms of the development of a phenomenon. However, my research aims at understanding the phenomenon from different perspectives and not through time. An exploratory phenomenographic case study approach is appropriate, involving mixed methods (Richardson, 1999) , a technical audit, interviews and the survey method. The nature of my case study, and the methods used within it, is explained in the next chapter.

### **3.6 The Role of Models in Interpretivist Research**

Chapter 2 discussed a range of models and presented the case for the use of the Communities of Inquiry model of e-learning environments and the Technology Acceptance Model (TAM2). Models are common in scientific traditions of research: Hartmann and Frigg (2006) explain that models are used for representation of a phenomenon or data, and this is one of the roles that they play in this study, presenting data about complex and evolving phenomena.

They also provide a framework for data collection and data analysis. In this study, the models provide outlines for survey tools and interview protocols, as well as the broad themes that allow the initial analysis of data collected.

Models in phenomenographic research allow the synthesis of data collected from different participants with varied perspectives and using different methods: COI and TAM2 are applied to interpret data collected from multiple methods and are bases to better understand what different stakeholders in Mauritius think about the phenomenon of MOOCs in higher education. They supply a repertoire of concepts and themes to help in the exploration of diverse experiences and complex cultural, pedagogical and technological factors. In short they give 'structure' to the phenomenographic case study.

At the same time, models are tentative and can be adapted and developed. The charting of the histories of COI and TAM2 show how they have been adapted in response to new findings, theoretical critique or their inadequacy to explain phenomena. Models also provide a means of communicating complex phenomena and patterns, and this is an issue that will be revisited later in this thesis.

# **Chapter 4: Methodology**

## **4.1 Introduction**

As Chapter 3 has explained, this project was exploratory and interpretative in its approach, which in turn shaped the mixed-methods research design and informed choices and design of research methods and tools. This chapter demonstrates how a range of methods, appropriate to the research questions and approach, were developed and combined. It also discusses the samples of participants involved in the research. The data analysis methods are then discussed together with ethical aspects.

## **4.2 Research Design**

The research design was developed in the course of the project, as did the sampling strategies used. These are now discussed.

### **4.2.1 Design of the Research**

The research took place in four main phases. Early data collection and analysis (Phase 1 Pilot) led to shifts in the emphasis of the project and changes in methods, so therefore form part of this chapter. Subsequent phases (2a, 2b and 3) were more concerned with the collection and analysis of the more substantive data and consequently are discussed in later chapters. Phases 2a and 2b involved students participating in a short MOOC as part of the courses on which they were enrolled, and so these are described as 'interventions'. However these took place within an exploratory rather than an experimental framework.

These phases can be represented as follows:

Phase	Sample	Methods	Analytical Framework	Time Frame
Phase 1: Pilot 1	6 self-enrolled courses	MOOC audit	COI	Jan 2014-Feb 2014
	30 UG students	Student Survey	COI with emphasis on TP	Jan 2014-Feb 2014
	4 (of the 30)	Student Interview	COI with emphasis on TP	Jan 2014-Feb 2014
Phase 2a: Pilot 2	22 UG Tourism Students	MOOC intervention	N/A	Feb 2014-March 2014
	6 UG Tourism Students	Student Interview	COI	Feb 2014-March 2014
	22 UG Tourism Students	Student Audit	COI	Feb 2014-March 2014
	2 HE Leaders	Preliminary Interview	COI/TAM	Feb 2014-March 2014

Phase 2b: Main Data Collection	40 UG Education and Management Students	MOOC intervention (2 courses)	N/A	Jan 2015-April 2015
	62 UG Tourism, Education and Management Students	Student Interview  Student Audit	COI and TAM	Jan 2015-April 2015
Phase 3: Main Data Collection	3 Teachers	Reflective Interviews       Tool to determine the extent to which a course can be converted into a MOOC	COI and emergent themes   N/A	Jan 2015-April 2015   Jan 2015-April 2015
	3 HE Leaders and 1 Policy Maker	Full Interviews	TAM and Context	Jan 2015-April 2015

**Table 4.1: Phases of the Research with Samples and Methods Used**

The phases of the research can be related to the research objectives of the project as shown in table 4.2. As the research design evolved, data collected in particular phases informed thinking about multiple research objectives, but this table shows the most important ways in which phases and objectives were related.

<b>Phase</b>	<b>Methods</b>	<b>Research Objective</b>
1 (Pilot 1)	MOOC audit Student Survey Student Interview	RO 1: To explore the importance attached to indicators, (as defined by Garrison et al, 2000) by Mauritian HE students.  The focus was teaching presence indicators.  This pilot stage indicated the need to include all presence indicators as seen in section 4.3.2.
2a (Pilot 2)	MOOC intervention Student Interview Student Audit Preliminary Interview with policy maker	RO 1: To explore the importance attached to indicators, (as defined by Garrison et al, 2000) by Mauritian HE students  RO 2: To explore the extent to which specific presence indicators contribute to attitudes towards and acceptance of e-learning environments including MOOCs
2b (Main Data Collection)	MOOC intervention (2 courses) Student Interview Student Audit	RO 1: To explore the importance attached to indicators, (as defined by Garrison et al, 2000) by Mauritian HE students  RO 2: To explore the extent to which specific presence indicators contribute to attitudes



		<p>towards and acceptance of e-learning environments including MOOCs</p> <p>RO 3: To review the extent to which current MOOCs allow specific presence indicators and technology acceptance factors to be implemented</p>
3 (Main Data Collection)	<p>Reflective Interviews</p> <p>- Teachers</p> <p>Tool to determine the extent to which a course can be converted into a MOOC- Teachers</p> <p>Full Interviews – policy maker and educational leaders</p>	<p>RO 4: To offer an evidence-based assessment of the potential of MOOCs in Mauritian HE and to make recommendations about features that will address any challenges identified and contribute to their adoption, student enrolment and positive learning experiences.</p>

**Table 4.2: Link between Research Phases and Research Objectives**

#### 4.2.2 Sampling Strategies

The sampling strategy used in the project aligns with its objectives, its commitment to explore a variety of participant experiences, and its exploratory nature. My research is justified as being a qualitative one in previous chapters and as such its sampling strategy also follows a qualitative approach. The purpose of a sampling strategy is to provide information about the topic and hence achieve the research objectives. It is important to note that the word “sample” is sometimes misunderstood in qualitative research (Neuman, 2013) because it is often associated with quantitative research where generalisability of samples is

crucial. Whilst in quantitative research, samples are selected on the basis of characteristics that are present both in the sampling units and the population, in qualitative research, samples are selected to shed light on complex social situations. Therefore, the sampling categories for qualitative research are more about “giving valuable information or new aspects” (Neuman, 2013, p. 247). A non-probabilistic sampling strategy is appropriate because the concern is less with generalisability than with how information from samples can contribute towards understanding what the population wants (Neuman, 2013). As mentioned before, only naturalistic generalisation is sought where readers can identify similarities between this study and their case.

Sampling was purposive in that specific target groups and individuals were identified with a particular purpose in mind (Trochim, 2000) which is to explore how to introduce and implement MOOCs in Mauritius. Purposive sampling was appropriate for this research because the participants who are involved are those from whom relevant data can be collected: more specifically the Mauritian learners and their teachers have a characteristic which is useful for my research, namely studying or teaching the first year of a degree programme (Bryman, 2012). The educational leaders and policy maker were approached as they were people able to address the primary objective and the research questions of the project.

The target groups amongst the students were new undergraduates who were, for the most part, starting higher education after completing their school education, and the subjects chosen represented popular and economically important course choices amongst Mauritian students. They were also involved in learning in MOOCs for the first time, although most had experience of learning online in other contexts.

There was additionally an element of ‘convenience’ sampling in that personal connections were used; additionally, the participation of teachers and therefore of the students that they taught depended on whether the teachers could identify suitable opportunities to implement

MOOCs as part of the Phase 2a and 2b interventions, and whether appropriate courses were available that matched course content closely.

Sample size in the Phase 1 pilot was based on the need to obtain the minimum number of students to allow research instruments to be tested and descriptive statistics calculated, hence  $n=30$ . With the shift in emphasis of the project toward qualitative methods (Phase 2a-2b) the sample sizes were natural units – the size of the classes of students who were enrolled on each course (20-22).

The educational leaders and policy maker represented a small but purposive sample of key people who have a say in the decision making process of educational policies in Mauritius, and whose opinions might have an impact on the implementation of MOOCs in Mauritius. Initial contacts with two of these individuals led to introductions, initial discussions and then to interviews with other two individuals.

The four interviews with educational leader / policymaker participants were with the following individuals whose role and 'purpose' in the project sample is summarised here:

<b>Participant</b>	<b>Role</b>	<b>Rationale for Inclusion</b>
M: An official from a distance learning institution	A lecturer and researcher in a distance learning institution.	Contributes to the making of decisions relating to distance learning; was the first person to introduce MOOCs to Mauritius through a blended learning approach.
YB: Vice Chancellor (VC) of a university in Mauritius	The VC's role is to manage the strategic direction that the university is to take.	Contributes insights in terms of the potential use of MOOCs for educational institutions in Mauritius. If his university includes MOOCs in their curriculum, their usefulness will become more popular.
HB: Director of a Higher Education institution	The Director of the educational institution has a similar role to the VC.	Like YB, could also provide data that can help decide whether educational institutions and learners in Mauritius can benefit from MOOCs. HB is also often consulted about decisions in the educational sector of Mauritius.
DH: Senior role in the Ministry of Education	The interviewee is a cabinet member.	Has a say in any educational policy that is to be decided upon in Mauritius. Therefore provides national policy perspective and wider overview of role of education in relation to other policy issues.

**Table 4.3: Educational Leaders and Policymaker Interview Participants**

### **4.2.3 Ethical Framework**

The research project was undertaken in accordance with the British Educational Research Association (BERA) ethical guidelines (BERA, 2011). The most common ethical concerns are “informed consent, right to privacy and protection from harm ... physical, emotional or any other kind” (Fontana and Frey, 2008, p. 142); these ethical concerns were appropriate although the degree to which they needed to be considered varied with the different groups of participants according to their level of involvement and the potential impact of the research for them (Warren and Karner, 2005).

Firstly, informed consent required that the participants needed to know about the research – that is, to be fully informed about its aims and purposes and any potential impact that it may have on the participants. All participants of my research were consequently given a brief describing the purpose of the research and setting out what their involvement would involve. Then they were able to decide whether they agreed to participate in the research or not, based on the information given to them. Student participants in Phases 2a and 2b of the project were required to use the MOOC as this was part of the course on which they were enrolled. However, participation in the accompanying research activities (surveys and interviews) was optional.

The participants also had to be confident that they were the ones to decide whether their identities were to be revealed or not (Hammersley and Atkinson, 1983). This was particularly important for participating students who might be concerned that anything they said about the MOOC could be communicated to their teachers who were also guiding them on the MOOC and for the remainder of the courses. As a consequence they could have felt that this could adversely affect their grades. As a result their responses to surveys and interviews were anonymized and only generalised and aggregated comments were communicated to teachers. The consent form made it clear that no identities would be disclosed (Fontana and Frey, 2008).

Adverse effect on grades was a consideration which is closely related to the third major ethical issue which was the requirement to protect the participants from harm (Warren and Karner, 2005). As well as concerns (on the part of the student participants) that teacher might discriminate against students who were seen to be uncooperative, there was an additional risk that participation in the MOOC itself might disadvantage students, for example in final course examinations. These risks were reduced by a number of strategies (described in greater detail later in this chapter):

- the selection of high quality MOOC content from reputable academic sources, carefully matched to course requirements;
- the involvement of teachers as observers of student use of the MOOCs;
- the implementation of post-tests immediately after the students had completed the MOOC-based sections of their courses, so that teachers could put additional support in place and address any learning issues or misconceptions that might have arisen.

Ethical approval was obtained from the Research Ethics Committee of the Institute for Research in Education (IRED) of the University of Bedfordshire prior to the collection of the data (Appendix 11). The application was assessed by senior academics and their approval of the proposal was reported to the University Research Ethics Committee (UREC).

### 4.3 Phase 1 Pilot Studies and their Findings

A number of phase 1 studies were undertaken between Jan 2014 to Feb 2014. These consisted of an audit of a number of existing MOOCs in terms of how they matched the Community of Inquiry model; a student survey; and a series of initial interviews with students.

#### 4.3.1 MOOC Audit

The platforms analysed were EdX, Udacity and Coursera which at the time of the audit were the three major MOOC platforms in terms of enrolments globally and coverage by both research accounts and in popular media. The researcher enrolled onto two courses in each platform and carried out an audit of features and support for the presence indicators listed by Garrison and Anderson (2003, p. 51). The topics were as follows:

<b>Platform</b>	<b>Key</b>	<b>Course</b>
EdX	EdX1	Computer science for beginners
EdX	EdX2	Writing case studies: science of delivery
Coursera	Coursera1	Malicious Software and its Underground Economy: Two Sides to Every Story
Coursera	Coursera2	English Common Law: Structure and Principles
Udacity	Udacity1	Introduction to Psychology: The Science of Thought and Behavior
Udacity	Udacity2	Intro to Statistics: Making Decisions Based on Data

**Table 4.4: Courses Audited**

The purpose of this audit was threefold:

- To more critically assess the claims made by MOOC providers as to the levels of presence and interactions offered
- To better inform the selection of MOOC platforms for the study and for the Mauritian context more generally
- To test how adequate the Communities of Inquiry model might be as a means of analysing the teaching and learning and patterns of presence within MOOCs.

There was variation between the courses according to which of the features of the MOOC were used and how course designers had structured content. Using the inventory of COI indicators and scoring each sub-indicator within these from 1-3 (1 = low, 3 = high) on each course it was possible to obtain an approximate value for each of the platforms against the broader COI indicators.

A score of 1 represented little or no evidence of this feature or pattern of interaction within the course; a 2 that it was used occasionally, or by only some participants; and a 3 that it was an obvious and consistent feature of the course environment. The values are nominal and there was attempt to carry out quantitative analysis on the basis of subjective experience of a limited number of courses.

Illustrations of the scores can be seen via some examples. On the first course of EdX, the social presence indicator called “respect for others” is marked as 2 because on the discussion forum, the students respected each other’s opinions. However, there was not enough healthy criticisms being carried out and this is why it is not marked 3. On the second course on EdX, however, the students were talking about their own opinions and would barely acknowledge those of their peers. We can then see that the cognitive presence indicator named “exchanges of information and knowledge” was rated 1 for both courses on EdX because on both courses there was no exchange of knowledge as such. An example for teacher presence would be how the teacher initiated a discussion but then didn’t



intervene in it on the courses on Udacity. Then the teacher presence indicators such as “Identify areas of agreement & disagreement” scored 1 on Udacity courses. However the same courses scored high on cognitive presence indicators under “triggering events”.

The outcomes of this audit are summarised in Tables 4.5 to 4.6 below.

COI Sub-indicators and Indicators	Platform and Course					
	EdX1	EdX2	Coursera1	Coursera2	Udacity1	Udacity2
Expression of emotion	1	1	2	2	3	2
Sense of humour	1	1	2	2	3	3
Use of Personal anecdotes	2	1	2	2	3	3
<b>Affective</b>	<b>1</b>		<b>2</b>		<b>3</b>	
Maintaining main thread of discussion	1	2	2	2	3	3
Respect of others	2	1	2	3	3	1
Explicit reference to others' opinions	1	1	3	2	3	3
Expression of agreement	1	1	2	2	3	3
<b>Open Communication</b>	<b>1</b>		<b>2</b>		<b>3</b>	

Address by first names	2	1	3	2	3	2
Address group using inclusive expressions	1	1	2	2	3	3
Use of salutations	2	1	3	2	3	3
<b>Cohesion</b>	<b>1</b>		<b>2</b>		<b>3</b>	

***Table 4.5: Social Presence Indicators***

Overall, while there was some variation according to the specifics of the course, it appeared that Udacity best supported social presence indicators.

COI Sub-indicators and Indicators	Platform and Course					
	EdX1	EdX2	Coursera1	Coursera2	Udacity1	Udacity2
Emergence of problem to solve	2	3	2	1	1	1
voicing of convergences and divergences	2	3	3	2	1	1
<b>Triggering Events</b>	<b>2-3</b>		<b>2-3</b>		<b>1</b>	
exchanges of inform- ation and knowledge	1	1	2	2	3	3
Suggestions	1	1	3	2	3	3
Brainstorming	1	1	2	2	3	3
Confrontation of points of view	1	2	2	2	3	3
<b>Exploration</b>	<b>1</b>		<b>2</b>		<b>3</b>	
Mutual adjustments	3	3	3	2	1	1
Convergence of points of view	3	3	2	2	1	1
Summary of solutions	3	2	3	2	2	1

<b>Integration</b>	<b>3</b>		<b>2</b>		<b>1</b>	
Application and testing of solutions	3	3	2	2	1	1
Discussion of solutions	3	3	3	3	3	1
<b>Resolution</b>	<b>3</b>		<b>2-3</b>		<b>variable</b>	

**Table 4.6: Cognitive Presence Indicators**

In the audit of cognitive presence indicators, there were clear differences in the ways in which the platforms and the courses within them supported learning. EdX was much more highly directive with clear learning outcomes and a concern with the application of newly acquired knowledge. On the other hand, Udacity's more flexible approach promoted a high level of discussion but the summary of learning outcomes and their application varied between the two courses audited; in effect the role of the course designers and facilitators were much more important in ensuring that these were achieved. Overall there was more variation between the courses even on the same platform.

COI Sub-indicators and Indicators	Platform and Course					
	EdX1	EdX2	Coursera1	Coursera2	Udacity1	Udacity2
Setting curriculum	3	3	3	3	1	1
Designing methods	3	3	3	3	2	1
Establishing time parameters	3	3	3	2	2	1
Using the medium effectively	3	3	3	2	1	2
Establishing netiquette	3	3	3	2	1	1
<b>Design and Organisation</b>	<b>3</b>		<b>2-3</b>		<b>1-2</b>	
Identify areas of agreement & disagreement	3	3	3	2	1	1
Seeking consensus and understanding	3	2	2	2	1	1
Encouraging, acknowledging and reinforcing	3	3	3	2	2	1

Setting the climate for learning	3	3	3	2	1	1
Drawing in participants & prompting discussion	3	3	3	2	2	1
Assessing the efficacy of the process	3	2	2	1	1	1
<b>Facilitating Discourse</b>	<b>3</b>		<b>2-3</b>		<b>1-2</b>	
presenting content and questions	3	3	3	2	2	1
focusing the discussion on specific issues	3	3	2	2	1	1
summarising discussion	3	3	2	2	1	1
confirming understanding	3	3	2	2	1	1
diagnosing misperceptions	3	3	2	2	1	1

injecting knowledge from diverse sources	3	3	2	2	1	1
responding to technical concerns	-	-	-	-	-	-
<b>Direct Instruction</b>	<b>3</b>		<b>2</b>		<b>1</b>	

**Table 4.7: Teaching Presence Indicators**

Taking these teaching indicators together with the social and cognitive presence indicators the experience of the researcher suggested that EdX seemed to be the platform most oriented towards direct instruction and organisation and offered learners highly structured learning and support throughout their course including the use of video content and structured reading materials. EdX also involved teachers evaluating the students' discussions and then providing them with feedback and direction. Weekly summaries and analyses of the discussions were provided and course content also directed the learners towards additional information to aid skills development.

The courses delivered through Udacity also used videos to give instructions and video recorded discussions, but the teachers did not guide the participants in terms of achieving learning. Discussion tools were widely used but the role of the online instructors, in terms of developing the analytical and conceptual skills of the learners, was not found. The courses offered through Coursera were also weaker in facilitating discourse and direct instruction. Although the teachers answered questions and gave feedback, there was no evidence of pulling participants towards higher order thinking.

Cognitive presence indicators appeared stronger on EdX than Udacity, but this was in part due to the different pedagogical models underlying the courses. On Udacity, cognitive presence arose mainly because of the network created among the learners through which

discussions were carried out. This network was characterised by open communication and a high degree of cohesiveness among the learners, and the learners were encouraged to explore and bring content from their own online networks. In comparison, on EdX the cognitive presence was strong primarily because of the high level of facilitation by the teachers, and independent exploration was less evident. On EdX, the teachers were much more involved and guided the learners, for example, in discussions, and as a result social presence indicators such as interactions between learners were much less common. In the Udacity courses, the network created by the participants contributed to higher levels of social presence. For both social and cognitive presence indicators, again Coursera fell between EdX and Udacity with more similarities with EdX.

In summary, Udacity is closer to the cMOOC ideal as envisaged by Siemens and his colleagues, but seems to leave more work for both teachers and learners to do in community-building, networking and exploration, while the directive nature of EdX makes it more suitable for structured training in well-understood topic areas where the role of the teacher is to summarise, provide feedback and direct learners towards specified learning outcomes.

#### **4.3.2 Student Survey**

At this stage in the project, the expectation was already that teaching presence would prove to be of central importance, and a small-scale survey was conducted to explore this with a group of 30 Mauritian first year undergraduate students at the beginning of their courses of study. The 30 Mauritian learners were part of a lecture session on a Law unit. The Law unit was a module in two of the courses under the Faculty of Law and Management. The intention at this point was to develop a more extensive data collection instrument for use with larger student populations.

The Teaching Presence indicators and sub-indicators from Garrison and Anderson (2003) were presented as Likert scale items using 10 point scales and students were asked to



indicate how important they felt these were to their learning in online environments. Initial analysis indicated that teacher provision of course overview and feedback, and communication about deadlines were most significant (means of >7 with n=30). Scores from the 'Instructional Design' and 'Direct Instruction' indicator list rated more highly than those concerned with community building, in contrast to Shea et al's (2006) findings in a much larger study (1067 students across 32 different colleges in the USA) that showed that it was the community-building features to which students attached greatest value.

Set of Indicators	n	Mean
Instructional Design (TP indicators 1-5)	30	6.28
Facilitation of Discourse (TP indicators 6-11)	30	5.88
Direct Instruction (TP indicators 12-18)	30	6.13

**Table 4.8: Teaching Presence Indicators Rated by Undergraduate Students**

However, mean scores for all items had mean scores of 5.5 or greater, and some responses were judged to be unreliable (all teacher activities rated as 10), or with all scores either 10 or 5, on a 10-point scale. One interpretation of this is that the 10 scores could be read as 'agree' and the 5 scores as 'don't know' or 'no strong opinion'.

This raised a concern about the design of the survey, but also highlighted that the students were in many cases so enthusiastic about engagement in higher education and the use of new technologies in learning, that their responses might be unreliable expectations but without necessarily having experience of e-learning or MOOCs. The fact that the data collected from the pilot survey was not normalised (Miles and Huberman, 1994) was confirmed by a more detailed analysis. A Shapiro-Wilk test of normality was conducted and demonstrated that the data was not normalised as a p value of <0.05 was obtained.

### **4.3.3 Student Interviews**

A group of four first year undergraduate students were interviewed using a semi-structured interview based on the teaching presence indicators and sub-indicators. The purpose of this interview was, again, to attempt to validate the COI model, as well as to explore further the issues arising from the survey described in section 4.3.2.

In relation to instructional design issues (TP subindicators 1-5), students identified the importance of clear course outlines, means of participation, expectations and deadlines from the very start of courses. Clear, motivating input from teachers at this stage was critically important. When it came to facilitation of discourse (TP subindicators 6-11), students were positive about the experience of working together and independently, but they stated that the role of the teacher was to coordinate discussions and “keep learners on the right track” although remaining “on task” was seen as a learner responsibility. The students considered TP indicator 9, which relates to the teacher role in encouraging the exploration of new concepts to be important, but, again, making sure that learning outcomes were met was more important. Similar issues emerged from the students’ views on direct instruction (TP subindicators 12-18). The kind of feedback (TP subindicator 15) that was preferred was individual rather than to a group, and this had an important motivational role. Teachers were described as “validators” of knowledge, and the view was that the role of the teacher was not to provide technical support (TP subindicator 18), as a good handbook online would address any issues that might arise.

The interviews, then, indicated some of the reasons for the rankings of survey items given by the participants. Furthermore, they exposed a tendency for the students participating to be very outcome oriented. Indeed, they were very keen to stick to the topics that were relevant to the subject and sufficient to pass, thus showing an indication that they do not necessarily want to learn a topic deeply and would not be adverse to surface learning (Biggs, 1987) as

long as they achieve the expected learning outcomes. While they were enthusiastic about the use of e-learning environments, they were also concerned that people did not want to waste their time, so issues such as online etiquette were considered to be important, and they considered many of the teaching presence indicators not only to be pedagogical strategies but motivational ones, encouraging students to get involved, maintain interest and keep outcomes in mind.

#### **4.4 Reflections on Phase 1 Pilot Study Findings**

The results of these early enquiries led to significant rethinking of the project design, a shift in the combination of research methods to be used, and a reconsideration of the participants who might need to be involved. Specifically:

- The results of the student survey suggested that asking participants with limited experience of e-learning, let alone MOOCs, about their preferences in this area might be of limited value. Running a larger survey might simply have gathered increased numbers of equally problematic data.
- Student interviews provided much greater insight than the survey data, leading to the decision to develop interviews and apply them more widely to larger samples, rather than just using them to validate survey responses.
- Considering only teaching presence, rather than considering it holistically, narrowed the scope and value of the COI model (one of the concerns raised by Jezegou (2010)). This led to a broadening of the scope of student interviews and schemes for analysis.
- There needed to be a better conceptualisation of how individuals assessed the value of technology, leading to the exploration of TAM models.
- A broader understanding of the educational policy context and institutional factors needed to be developed, in order to understand how teacher and student perspectives might fit into a broader picture.

## **4.5 Phase 2a and Phase 2b Intervention and Data Collection**

### **4.5.1 Structuring the Questions for Mauritian Learners**

The questions for the semi structured interviews with the Mauritian learners are designed on the basis of COI and TAM2 categories because the latter are the themes used for analysing the interviews. Furthermore, after their online course experience, the Mauritian learners complete questionnaires about whether they felt the presences that they require on the MOOC. The questions for both the interviews and the survey with the Mauritian learners were designed to explore Social Presence, Cognitive Presence and Teaching Presence as set out in the COI model; and Perceived Usefulness (PU) and Perceived Ease of Use (PEU) as defined in the TAM2 model. The COI model already had inventories of items which contributed to the different types of presence; questions about PU and PEU were more open-ended, with codes being derived from the interview and questionnaire data provided by the participants.

### **4.5.2 Identification and Recruitment of Participants**

The intervention phases of the project focussed on three subject areas taught at the University: first year courses in Tourism, Management and Education. The opportunity to work with students in the Faculty of Education was enabled by a key member of staff who already had experience in using MOOCs as part of a blended approach to teaching. Education also represents a key area for development within Mauritius because when the students complete their compulsory education, which is up to GCSEs, the students' access to Higher Education is often limited due to factors such as lack of finance, skills and options. Mohadeb (2003) mentions how the students who do not access Higher Education are those who could not achieve the required grades and these learners are usually from the lower income bracket. In that, we see how the lack of finance prevents the students to achieve the

skill levels required to access the degrees in the Higher Education institutions which are mostly academic.

Other courses were identified within the Faculty of Management which, according to the Tertiary Education Commission (2015, p. 23) delivers the most popular degrees in terms of university enrolment amongst Mauritian students. Again, this aligns with national priorities. In a report published in 2014, The World Trade Organisation reported the sectors that contributed more to the national GDP and the sectors mentioned, including agriculture, finance and tourism, are clearly aligned with many of the courses offered under the Faculty of Management.

To choose the specific programmes to be the focus of the project, three main criteria were used:

- Firstly, the numbers of students enrolled: this was important not only because of the need for adequate sample sizes of students, but also in order to relate findings to institutional and national priorities;
- Secondly, the presence of foundational modules within the programmes that would benefit from a currently available but high-quality MOOC from a respected provider and which had content that matched the current course syllabus;
- Thirdly, willingness on the part of teachers to participate in the study and to implement a MOOC for a limited period within their courses. Initially, teachers on five degree programmes (Tourism, International Business, Accounting, Management, and Law and Management) were approached on the basis of the first two criteria: the teachers who expressed willingness and agreed to participate in my research were those involved in teaching undergraduate courses in Tourism and Management. The others stated that they would not have the time to do so due to their workload.

Further discussion with teachers established how the MOOCs would be implemented, be presented to students, and what potential benefits might be for their students. It was agreed that for a set period of four weeks, the MOOC would form part of the modules as follows:

<b>Phase</b>	<b>Subject</b>	<b>Existing Module</b>	<b>MOOC Source, Content and Platform</b>	<b>Face to Face Topic taught in Parallel to MOOC</b>
2a	Tourism	Economics for Tourism & Hospitality Managers	MITx: The Power of Macroeconomics: Economic Principles in the Real World (Coursera)	'Economics for Tourism & Hospitality Managers'
2b	Management	Economics for Managers	MITx: The Power of Macroeconomics: Economic Principles in the Real World (Coursera)	'Microeconomics' component as part of the 'Economics for Managers'
2b	Education	ICT in Teaching	University of California Irvine Implementation and Evaluation of	'Communication in Teaching'

			Educational Technology (EdX)	
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**Table 4.9: Matching MOOC Content to Existing Modules**

As agreed in our discussions, the teachers presented the use of a MOOC to the students as an activity that they would do as part of an existing module, but as a separate activity, rather than in a ‘blended learning’ model. The MOOCs used are open and delivered on a large scale (Pilli and Admiraal, 2016). However, at the same time, the MOOCs are delivered around existing traditional courses, thus fitting the description of wrapped MOOCs (Czerniewicz, Deacon, Fife, Small and Walji, 2015).

Therefore the MOOCs would run in parallel with the face to face sessions. As seen in table 4.9, at the same time that the MOOCs were running, the Management and Tourism teachers taught the ‘Microeconomics’ component as part of the ‘Economics for Managers’ and ‘Economics for Tourism & Hospitality Managers’ modules and the Education teacher taught ‘Communication in Teaching’ face to face. Therefore the MOOC is seen to be an addition to what is being taught face to face.

Teachers agreed to carry out a pre- and post-test of knowledge with the students before and after they completed the MOOC, both to assess student learning and to identify any areas that they would need to address. However, the students were assured that the pre-test and post-test results would not affect their course grades. Teachers requested to be enrolled on the MOOCs in order to review content and syllabus coverage, and as participants. They also agreed to act as observers on the MOOCs and to assist in evaluation activities after the MOOC and the post-test.

Through negotiation with the teachers, it was decided that the students would be involved in the MOOCs for a period of four weeks. This represented a compromise between the needs of the students to become confident in the MOOC environment, have meaningful learning experiences, and to provide well-informed reflections on their experience; while at the same time reducing any risks to their learning outcomes. Teachers in Tourism and Management were concerned that content introduced later in the MOOC on 'The Power of Macroeconomics: Economic Principles' was too detailed and that the first 4 weeks would be sufficient for the students enrolled in the more general modules.

In the same way the teacher of Education identified that the students enrolled in the 'ICT in Teaching' module would not need to go into the evaluation of the Educational Technology in detail at this stage in their studies. Once the scope and limitations of the MOOC had been identified, and the length for which the students would be asked to participate on them agreed, the extent to which the teachers themselves would be involved in the MOOCs was discussed.

It was agreed that while the teachers would join and monitor the MOOCs, they would not attempt to adapt or supplement the existing MOOC content. While this was a cause of some concern, the teachers were willing to remain less involved on the grounds that the MOOCs were time-limited and because of the quality of the content. More generally, the teachers were willing to engage with the project and were keen to try out a MOOC as this might be a practice that they might adopt more widely in their teaching. One teacher said that using a MOOC would indicate the use of an innovative teaching method and would contribute to their own continuous professional development. Teachers were concerned about how the students would react to using a MOOC and having additional assessments. This led to careful planning of how to present this course design to the students.

It is important to point out that, as seen in table 4.1, the Mauritian learners studying Tourism participated in the research first (Phase 2a). As a result of analysing the data obtained from



interviewing them, the design of the student interview questions was confirmed. The interviews with the Mauritian learners studying Education and Management then followed.

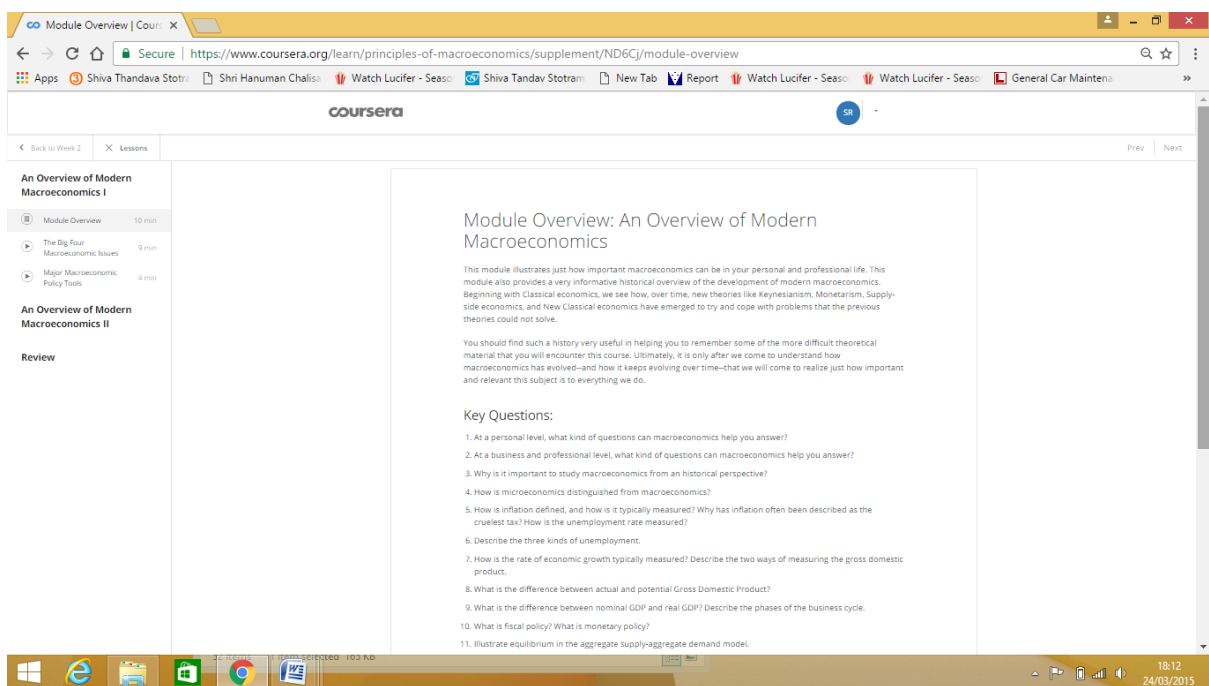
#### **4.5.3 Presenting the MOOCs to Students**

The teachers and I agreed that they have to clarify how the MOOC would be embedded in the delivery of the topic being taught at the time. We planned that the teachers would start with stating that a part of the topic was to be taught online. They then would give a brief overview of the platform to be used. We also agreed that they could show a video of a MOOC for the learners to know what to expect. The students were further told that they would do two tests: one prior to the online part to check what they know and then one after to evaluate their learning and identify gaps to be addressed. The teachers were asked to make sure to specify that the tests would not affect their final grades and that they should enjoy the online course, free of any fear of not understanding. The teachers agreed and they then ensured the students that any gap in learning will be addressed in a subsequent face to face session. After the MOOCs were presented to the students, I received an interesting feedback from the teachers.

The feedback was interesting because it lined up with the results of the first pilot study that I did. My first pilot was on teaching presence and I gave 30 Mauritian learners (from a different institution) a questionnaire where they would rank the indicators. At that time, I thought that my results were not useful because the students showed a high level of enthusiasm to the MOOC and I thought that the data were not telling me anything that would be useful other than I should use another data collection tool. However, when presenting the MOOCs to the Mauritian learners for the purpose of my main study, the same level of enthusiasm was reported. I can see here that the high interest in using a new technology is a point to be considered when implementing MOOCs in Mauritius.

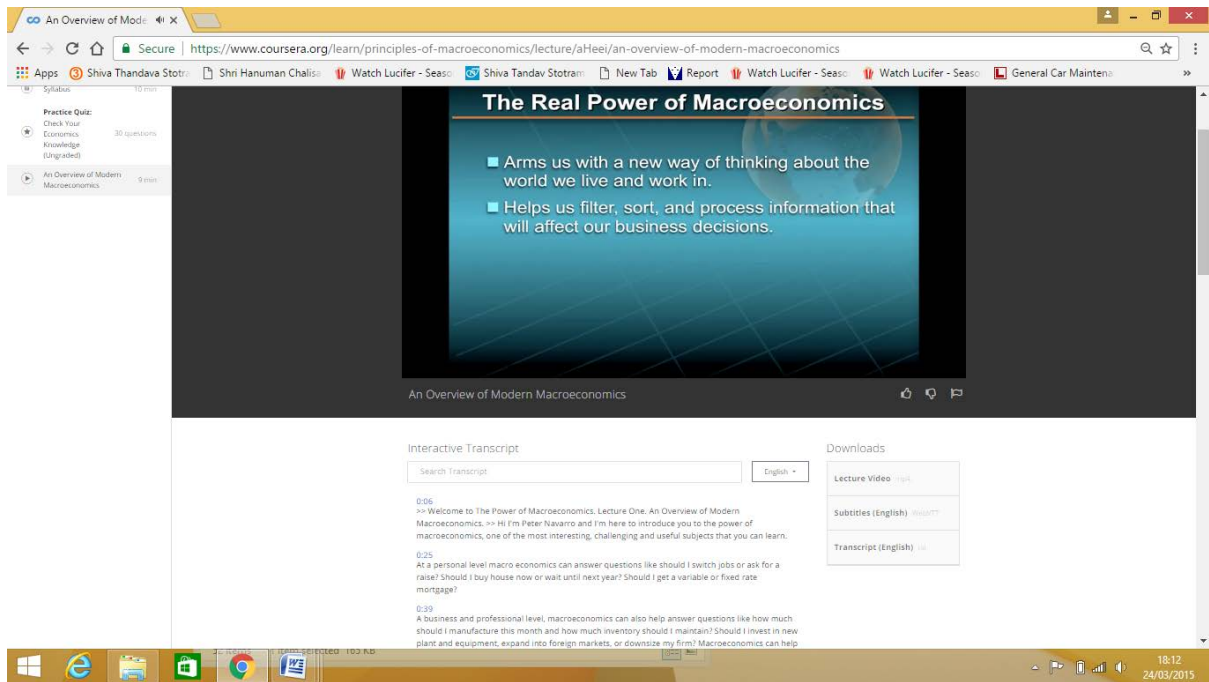
#### 4.5.4 The Student Experience of the MOOC: Tourism and Management

“The Power of Macroeconomics: Economic Principles” was delivered by MITx on Coursera (<https://www.coursera.org/learn/principles-of-macroeconomics>). At the start of the online MOOC course, there was a course overview and syllabus. The latter listed what would be taught each week, the number of videos that there would be for each topic and the reading expected (see figure 4.1).



**Figure 4.1: Course Overview – Coursera**

Content was delivered through video lectures (See Figure 4.2) with interactive transcripts and additional readings.



**Figure 4.2: Course Delivery - Coursera**

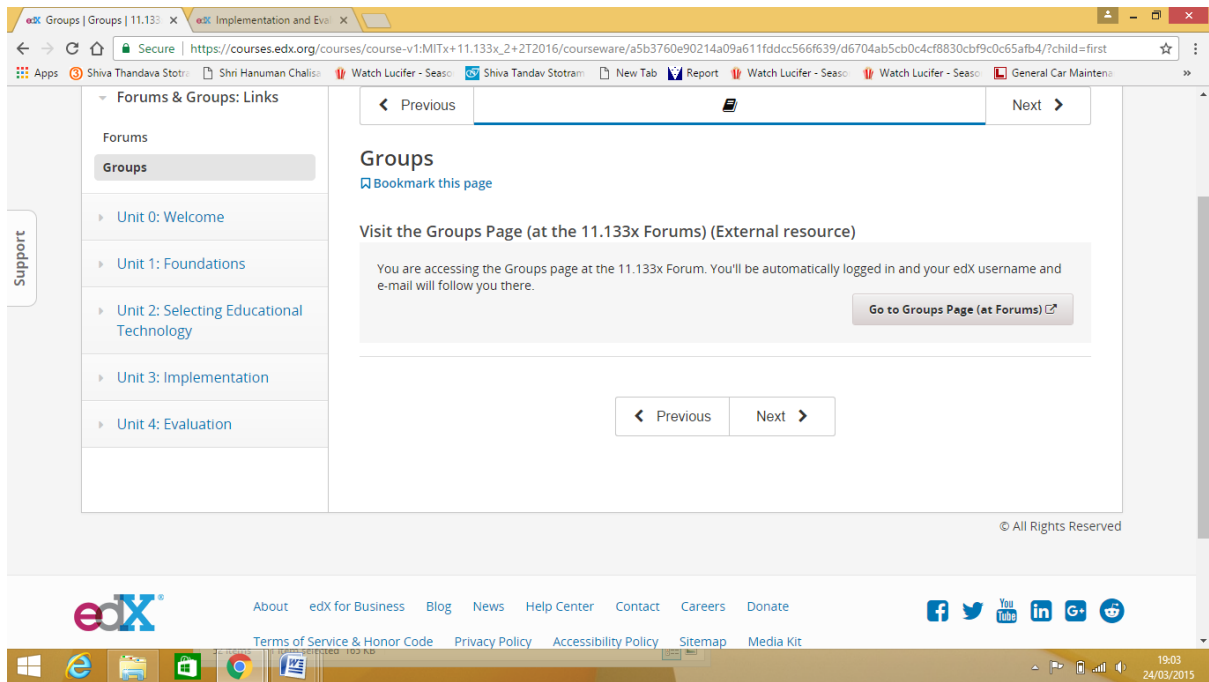
There were also discussion forums in which the students participated. As well as the pre- and post tests that were undertaken by the students, the MOOC each week had a practice quiz which was ungraded: the Mauritian learners were told that the assessment on the MOOC would not be counted towards their final grades.

#### **4.5.5 The Student Experience of the MOOC: Education**

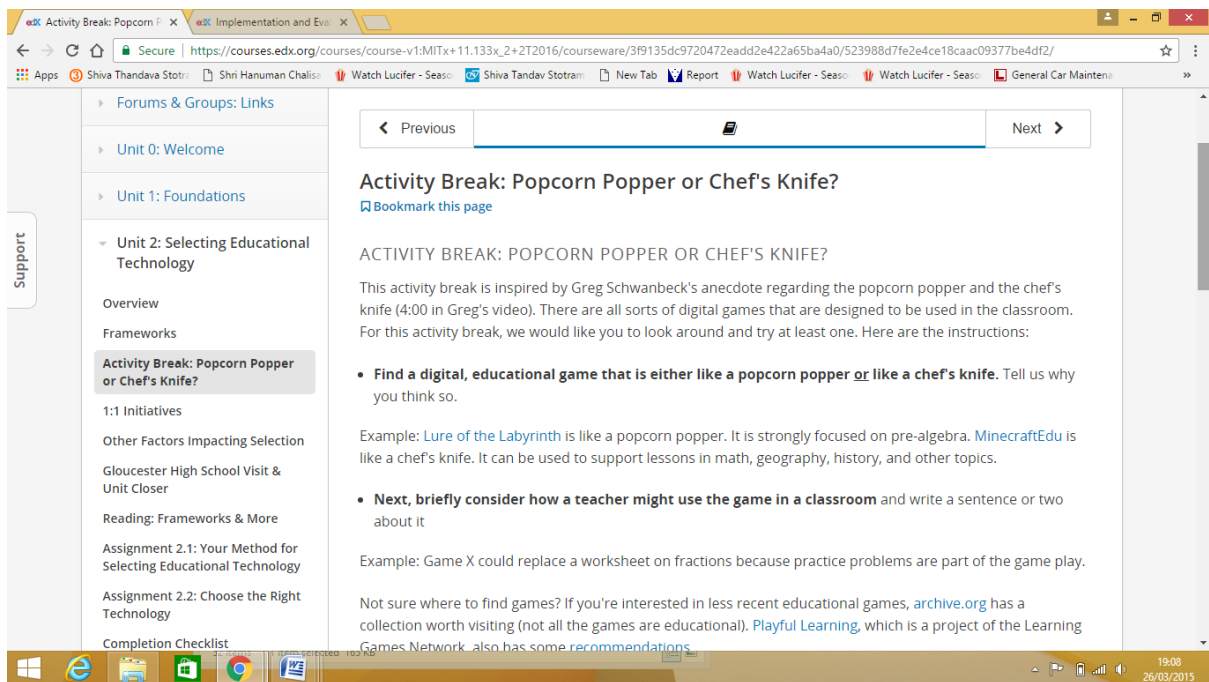
The Education learners used “Implementation and Evaluation of Educational Technology” delivered by the University of California Irvine on EdX

(<https://www.edx.org/course/implementation-evaluation-educational-mitx-11-133x-0>).

This course consisted of 5 units, including the first one which was one on welcoming the learners. As mentioned before, the Mauritian learners did the MOOC up to four weeks. Each unit was divided into the following sections namely overview, frameworks, an activity break, different topics, assignments and a completion checklist. The Mauritian learners were told that the assessment on the MOOC would not be counted towards their final grades.

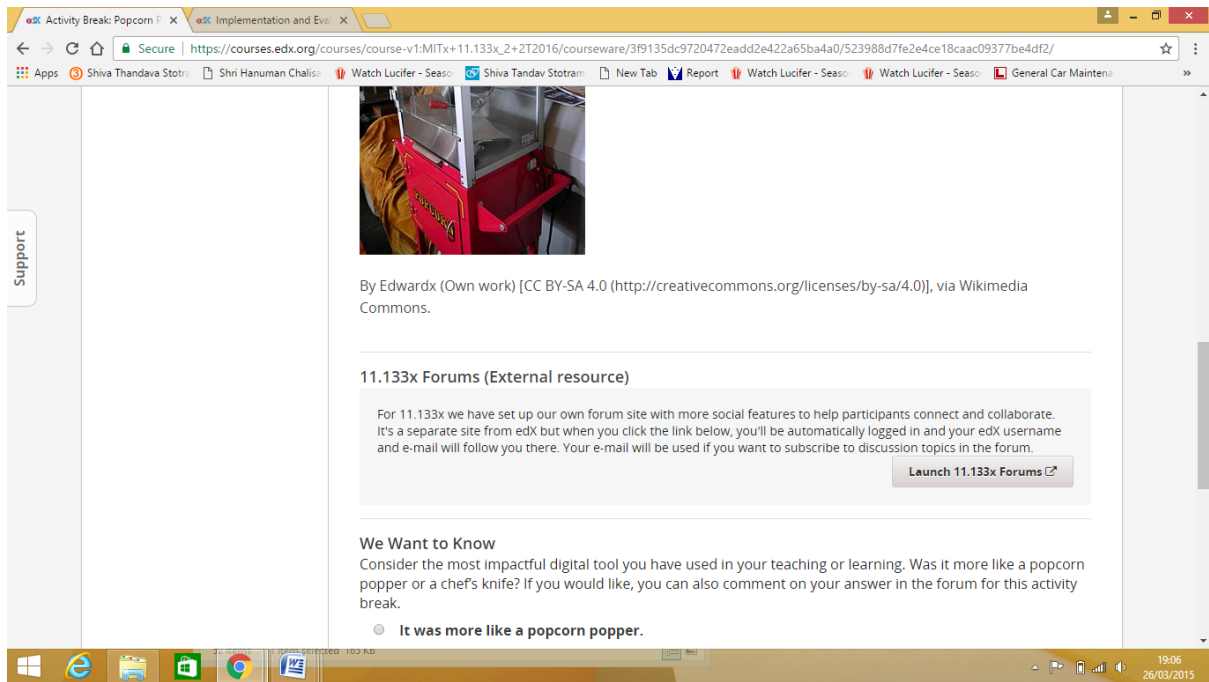


**Figure 4.3: Course Structure - EdX**



**Figure 4.4: Activity Example - EdX**

For each unit of the MOOC, there was an external forum where learners could discuss the topics (Figure 4.5).



**Figure 4.5: External Forum - EdX**

The two platforms used were Coursera and EdX. Both had a course overview and used videos to deliver the courses. However, while Coursera also had readings and a quiz at the end of each week, on EdX the students had a more structured approach to their learning process. Also, Coursera had a quiz every week, whereas EdX had one at the end of a unit even though it did have more assessment in the form of assignments. The discussion forums were also more structured on EdX, in that there was one for each unit.

Once student use of the MOOCs was completed, each of the teachers conducted a post-test not only to measure progress, but also to identify any gaps in learning on the MOOC topics in order that they could devote additional time to address these. This was an important aspect of the intervention design, as it ensured that students would not be disadvantaged as a result of taking part in the project and using the MOOCs rather than having face-to-face teacher instruction.

## **4.6 Phase 2a and Phase 2b Data Collection**

Phase 2a of the project represented a move forward from the pilot work of Phase 1 and drew on the fact that the tourism students had already begun to use the MOOC as part of their course. Interviews with students were more wide-ranging than in the pilot, and the discovery in the pilot that many of the students had little experience of e-learning led to this phase being used to trial research approaches that explored their actual experiences, rather than simply attitudes towards learning online.

#### **4.6.1 Phase 2a Student Interviews**

Student interviews were held with a small group (n=6) of the Tourism students who had used the MOOC as part of their course. The interviews were conducted in February-March 2014 once the students had completed the MOOC and focussed on whether the Tourism students experienced COI and TAM2 elements on the MOOC that they experienced. These students were subsequently re-interviewed as part of Phase 2b. The interview protocol is included in Appendix 1.

During this phase, two of the higher education leaders who were to be interviewed later in the project were approached and short informal interviews took place in which they discussed their potential participation, the educational context of MOOCs, and the role that the project might play in informing policy and practice. These interviews were not only useful as engagement and recruitment activities, they also validated the change in direction of the project and highlighted concerns, for example about the high level of teacher dependence required by the Mauritian learners, an indication that the resources available may not be adequate for the Mauritian learners and the role of the teacher being more than what it currently is on MOOCs. The responses from the students therefore pointed towards a model where the elements would be dependent on teacher presence indicators.

#### **4.6.2 Phase 2a Student Audits**

The 22 Tourism students also completed a written audit of the features that had been provided within the MOOC; this was designed the extent which they had made use of the full range of features provided, and, additionally, which of these they had found most useful in supporting their learning. The audit document is included as Appendix 2. The audit provided useful information with regards to whether the Mauritian learners experienced the COI and TAM2 elements that they need on MOOCs. Consequently, student audits were done in stage 2b as well.

#### **4.6.3 Phase 2b Student Interviews**

The Phase 2b student interviews represent one of the main sources of data collected. All 22 of the Tourism students who had completed their use of the MOOC in 2014, and 40 Education and Management students who had used the MOOC in early 2015 were invited to take part in semi-structured interviews. These included some demographic information, questions about prior use of e-learning, and extended questioning about their experience of using the MOOCs based on the four weeks they had spent during their courses (see Appendix 1 for the Interview Protocol and Appendix 3 for the Information Sheet and Consent Form for Participants). All the students needed to participate although the length of the interviews varied with some providing only limited information while others talked about their experiences of e-learning, their expectations of university, their courses and their teachers, and their longer-term intentions. The gatekeepers of the institution where the Mauritian learners studied had to give their consent for data collection (appendix 4).



## **4.7 Phase 3 Data Collection**

### **4.7.1 Teacher Interviews**

The teachers were involved in the selection, introduction and monitoring of the MOOC components of their courses, and so played a 'co-researcher' role in the project. They were also asked to reflect on their experiences and to evaluate whether certain courses would be more appropriate candidates for conversion to MOOCs or for the implementation of MOOCs as part of the course delivery.

The role of the teachers as co researchers was planned with their participation. After an overview of my project and how MOOCs would benefit the country and their students, it was agreed that they would do a pre-MOOC and post-MOOC test with their learners and use the MOOC as part of their delivery. With regards to the tool, to assess how their courses could be converted into MOOCs, they provided the curricula for its design. The designed tool was then presented to them. They had to state whether each unit could be converted into part of a MOOC or not. They suggested two changes. Firstly, they said that there should be an option stating that the unit can be "partly" converted as part of a MOOC. Secondly, they suggested that the tool should include a section where they could say the extent of teacher presence, cognitive presence and social presence that they think are required on a MOOC based on their respective curriculum. Consequently a section was added whereby they could apportion each unit into cognitive, social and teacher presence required (appendix 5).

There was one main concern discussed with the teachers, which was whether they would be allowed to include a MOOC in their lesson planning. They stated that since it was a teaching method that they were willing to try, there would be no issue regarding the use of a MOOC in their teaching practice. One teacher even said that using a MOOC would indicate the use of an innovative method and would improve their own continuous professional development.

#### **4.7.2 Educational Leader and Policymaker Interviews**

As mentioned in section 4.2.2 of this chapter three educational leaders and one policy maker were interviewed. Firstly, each of the educational leaders and policy maker was given an informative sheet briefing them about the research and the consent form that they have to sign (appendix 3). We then agreed for a date for the interview. Each interview was held in their respective offices. Before starting the interview, an overview of the research was given and they were asked to sign the consent form. We then proceeded with the interviews.

Since the interviews were non directive, there were indicative questions that were asked but with more freedom to the interviewees with regards to how they would answer. It was important to ensure that a question that was previously answered was not asked again. At the same time, information that would be relevant for the research had to be asked. The indicative questions can be seen in appendix 6.

## 4.8 Data Analysis

The data analysis in the Phase 1 pilot stage was both quantitative and qualitative, although, as has been explained, the decision to move away from quantitative approaches was made on the basis of some of these results. The interview data collected in Phase 2a was limited so the most extensive analysis took place of data collected in Phase 2b (students) and Phase 3 (teachers, educational leaders and the policy maker) through interviews. Interviews were analysed qualitatively and thematically to identify emerging indicators of social, teaching and cognitive presence and indicators of factors contributing to technology acceptance that Mauritian learners found to be important.

Interviews were transcribed and the nVivo data analysis software was used to identify patterns in the responses given by the participants (Miles and Huberman, 1994) within a framework derived from the COI and TAM2 models: these models provided the initial set of 'codes' which were used to analyse the interviews. Consequently, the data were organised in order to identify such patterns.

Thematic analysis involves analysing data by identifying themes and subthemes (Fereday and Muir Cochrane, 2006) and involves organising the data collected so as to be able to interpret them (in this case, initially in line with the COI and TAM2 models) and assess their contribution to answering the research questions (Braun and Clarke, 2006). Initially, the key themes that were coded were related to teaching, cognitive, social presences and technology acceptance, and data were analysed both at a semantic and latent levels (Braun and Clarke, 2006). Firstly at the semantic level, the themes were taken as per their face value when the participants were interviewed and the data were considered according to only what the respondents said. Subsequently, the data were analysed to more deeply to extract more meanings, underlying concerns of the participants, and emergent themes identified.

Thus themes can either be emerging as the analysis progresses (inductive) or be as per the ones identified prior to the analysis (deductive). While initially the student data were analysed deductively, the experience of analysis indicated that a partly inductive approach, where the indicators emerging from the data produced new data, would be more effective for the study as emergent themes were identified that did not fit easily into the simple codes derived from the COI and TAM models.

For the educational leader and policymaker interviews (Phase 3) the interviews were less directive and less framed by the COI model in particular and as such the analysis that was carried out, again using nVivo, was more inductive as themes emerged that were broader in scope. Consequently apart from data that were linked to the COI presences and technology acceptance, contributions that had bearing on how the MOOCs could be implemented, such as financial and technical issues, were also considered. In short, any information that could contribute to answering any of the research questions was taken into account.

The data analysis was done in phases and was continuous, so it was not at the end of the data collection process that the data were analysed: as they were collected from a group, data were analysed before moving to the next group or next data collection. This contributed to the exploratory nature of the project, and also allowed emerging issues to be explored in greater detail. For example, the small number of interviews carried out in Phase 2a informed the conduct of those in Phase 2b; and the analysis of student interviews framed both the interviews with educational leaders and their analysis.

#### 4.8.1. The Coding Process in Detail

Analysis of interview data from Phase 2b and Phase 3 was carried out in a consistent and systematic way. In the case of the student interviews:

- Firstly interviews conducted were listened to thoroughly at least once so that they were understood. Although time consuming, this was crucial to ensure familiarity with the data. At this phase an informal coding was conducted, in that particular examples of data that might have potential for analysis were jotted down – this was typically at a semantic level, where students referred explicitly to teacher presence, social interaction or the features of the MOOC.
- Secondly, the interviews of the participants were transcribed. In order to be as true to the data as possible, they were transcribed verbatim.
- A process of formal initial coding (Miles and Huberman, 1994), was then carried out in which transcripts were coded using a framework of codes derived from the COI and TAM models and according to what would be considered as relevant to answering the research questions. While the codes were not driven by theories (Fereday and Muir Cochrane, 2006), the use of the COI and TAM models provided a theoretically-grounded set of initial codes. As Bryman (2012) suggests, it is at this phase that interesting data may get lost because of oversimplification in the codes. Therefore, the codes were included as widely as possible. Then even if something was seen to be remotely interesting in answering the research questions, it was coded. Furthermore, if there were contradictions in what the participants said, these were still noted down as codes.
- Similar codes were grouped together. The analysis was inductive because the indicators emerged from the data. However, I mentioned that there was an element of deduction in the data analysis. This is because the names of the groups were taken from existing theories. Thus the presence indicators were from Garrison and Anderson's (2003) Community of Inquiry and the technology acceptance indicators

were from Venkatesh and Davis's (2000) TAM2. Therefore the codes were classified into teaching, social and cognitive presences and also into technology acceptance indicators, although these were broader in scope than the lists of sub-indicators that Garrison and Anderson (2003) use. Therefore the analysis was partly inductive as wider, student notions of 'presences' were being identified. Emergent Codes that did not seem to belong to any of these groups were put in a miscellaneous category (Braun and Clarke, 2006).

- The coherence of the codes in each theme was considered at the candidate level and then across the participants. Firstly, the different extracts under each theme for each candidate were reviewed to see if they follow a logical and consistent flow. If the extracts were not coherent for a particular theme, the theme would be revised whereby the extract(s) which did not belong to the theme would either be transferred to a more relevant theme, used to create another theme or would be removed from the analysis. Once the themes for all the participants were coherent, then the contents of the themes were looked at from the whole data's point of view. In that, coherence of codes in the themes across participants was sought to see whether they represent what the data as a whole was saying. As Braun and Clarke (2006) state, the thematic map has to match the data set. If the thematic map did not match the data set, then the themes would be reviewed until a match is obtained. If the codes were coherent at these two levels, the analysis moved to the next level. However, if the codes were not coherent, recoding was performed. It is important to note that caution was taken so as not to fall into the trap of "over-recoding" (Braun and Clarke, 2006; 21).
- Finally, the story of the codes in the groups was told, that is the data analysed were interpreted. The interpretation was based only on the groups and codes and not on the opinion of the researcher. For the purpose of validating the interpretation, a peer was asked to verbally interpret the data analysed and this interpretation was compared with that of the researcher.

The analysis, of the data from the interviews carried out with the educational leaders and policymaker, was more inductive than the analysis of the data from the Mauritian learners' interviews. The interviews with the educational leaders and policymaker were non directive. In that, during the data analysis, there was less emphasis on codes from COI. Instead, the emphasis was on inductively generated issues and on the research questions. So the themes that were forming were not categorised using the COI elements. The data analysis did create themes that were relevant to the TAM2 elements namely perceived usefulness and perceived ease of use. However, there was no rigidity in classifying the data into the TAM2 elements mentioned. Consequently, a more inductive approach was taken.

#### **4.9 Summary of Research Design Development**

This chapter has explained how the research questions directed the methodology used in the project. The methods for collecting the data, the way that the data were then analysed, and the samples that were used, all stemmed from the research objective and questions.

The research undertaken was mixed-methods, but predominantly qualitative because most of the data sought involved in-depth exploration of what the Mauritian learners required from MOOCs and how educational leaders and policy makers thought that MOOCs could be implemented in Mauritius. Therefore the main tools used to collect data were interviews, although structured questionnaires and technical audits were also used to frame and substantiate answers to some of the research questions.

The sampling undertaken was purposive and the data analysis was framed, at least initially, by the research questions. There was an element of deductive analysis in that codes were classified into groups derived from theoretical frameworks, namely COI and TAM2. But the above mentioned element was quite insignificant, and the analysis was predominantly inductive as the interviews carried out with the Mauritian learners were analysed using an inductive thematic analysis whereby the greater understanding of presence and technology

acceptance indicators emerged from the data. The analysis of the interviews from educational leaders and policymaker, on the other hand, was more completely inductive than that of the interviews from the Mauritian learners. The methodology as it stands serves the purpose of a case study research such as mine. I have a mixed methods approach to gain data from different perspectives.

From the above review, it can be seen that the primary concern of the research evolved to explore the expectations, perceptions and experiences to be considered when introducing and implementing MOOCs in Mauritius. The purpose of analysing the data is to set an agenda and to explore the complexities of teaching and learning online and specifically in Mauritian context. Therefore, subsequent chapters will elaborate on the data analysis; the ways in which a model of MOOC implementation that might be suitable for Mauritius is developed; recommendations and suggestions of a possible strategy to carry out the implementation of MOOCs in Mauritius and the limitations of the research.



## Chapter 5: Findings and Analysis: Student Data

### 5.1 Introduction

The experiences of the pilot study made it clear that semi-structured interviews would be the most appropriate tool to collect data from the Mauritian learners about their experiences and expectations of e-learning. A more structured part of the interview was framed by elements of the Community of Inquiry (COI) and Technology Acceptance Model 2 (TAM2) models, with semi-structured follow-up questions in which the learners were able to elaborate on their answers and reflect on their experiences of learning online more generally. This chapter will be mainly focussed on findings related to the COI framework: that is, how effective educational experience can be achieved on an online course. As described previously, COI defines three 'presences': cognitive presence (CP), teaching presence (TP) and social presence (SP). It is, however, interesting to see that while analysing the COI data, many of the elements that were mentioned by the Mauritian learners, also concerned the perceived ease of use and perceived usefulness of the MOOC: concepts central to technology acceptance models. Therefore, TAM2 factors will also be discussed. We now move to a description of how the chapter is to be presented.

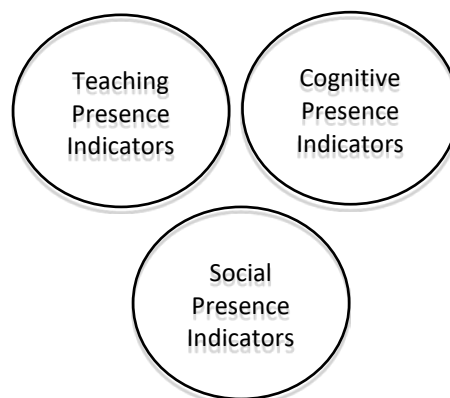
## **5.2 Exploring ‘presence’: how the findings are presented**

Initial analysis of the interview data focussed on each aspect of presence in turn and this is presented first, with CP, TP, and SP being explored separately. However, it was clear that there are many aspects of online interaction that are hybrids, and Garrison and Anderson, in their description of the COI model, do not consider these to be separate or exclusive. The relationships and overlaps between the different aspects of presence and the e-learning activities that they are linked with are then discussed.

A second set of data are then considered relating to the experience of learners using a MOOC platform to support their studies. A description of the online environment both in terms of the activities and patterns of presence is presented, along with learner perceptions of the different aspects of that environment. In combination, this analysis enables a comparison of learners’ expressed preferences and the environment in which learning activities took place. It also allows a comparison between the largely positive, enthusiastic attitudes towards the use of new technologies that emerged in the pilot study survey, and the more contextualised and concrete views of students once they had actual experience of using the MOOC.

### 5.3 Learner perspectives on presence

Student interviews were, as explained in Chapter 4, deliberately structured to explore COI presences and TAM2 components and initial analysis followed the same structure. Since the interview was structured using COI presences (and TAM2 components) in different sections, this analysis initially follows the same structure with TP, SP and CP considered in turn. The presences are initially explored in turn as shown in Figure 5.1.



**Figure 5.1: COI Analytical Framework: presences seen as separate**

However, as mentioned before, hybrids were found for most of the presences identified from the responses of the Mauritian learners. The hybrids involved a high degree of TP.

Consequently, the argument that is formed through the analysis of the data in terms of the COI elements is that most of what the Mauritian learners want on an online course requires teacher presence, even with other presences that identified.

### 5.3.1 Teaching Presence (TP)

In the course of the interviews, students described the forms of teaching presence that they experienced and the value that they attached to this presence. What emerged were student perceptions of teacher role, which aspects of this were important, and the ways in which they supported learning.

One area of teaching presence identified in the COI model is to provide a welcome to students on enrolment, setting out expectations, maintaining contact by sending emails and announcements, and providing an outline of the structure of the course. Students stated that the teacher presence was evident through the structure of the course, Student 24 saying "...I suppose the structure of the course, the teacher could be seen there. You know the way that the course is structured." (Student 24, Interview) and another highlighting the role of the teacher in setting out the course "step by step" (Student 34, Interview).

Further teaching presence indicators include providing instructions and framing tasks, and providing assessment and feedback.

"He [the teacher] told me how to achieve. He told me what was important. He gave instructions how to do the activities." (Student 14, interview)

While students talked about the role of the teacher in setting tasks (Student 23, Student 36), setting deadlines and providing feedback (Student 16, Student 38) they were concerned with more than the teacher simply fulfilling technical functions: the role of the teacher was to validate student opinions and knowledge, Student 19 stating:

"The teacher's feedback was important. because I always need to know if I am doing the right thing, I am on the right track. I don't like wasting my time." (Student 19, Interview)

One of the characteristic features of MOOCs (and xMOOCs in particular, as was explored in the literature review) that was replicated in the MOOCs, used for the purpose of this research, were the provision of video lectures selected by the course lecturer. While

students acknowledged that this was a means by which they saw teachers, several suggested that although the lecturer was visible on-screen, this did not equate to ‘teaching presence’, highlighting the lack of interactivity as their key concern:

“The videos were bizarre though ... because it was as if just, you know, videos. Videos are not lectures ... in lectures we can ask questions! We cannot talk to videos.” (Student 41, Interview)

“The teacher put the content online. I could see her on the videos. But does that count really? ...don't think so. It is not interaction.” (Student 21, Interview)

“ [The teacher could be seen] through the structure of the course, videos oh so many videos. . Videos are not teachers!” (Student 31, Interview)

### **5.3.2 Cognitive Presence (CP)**

In the section of the interview that was concerned with cognitive presence students mentioned the resources and activities on the MOOC and how these contributed to their learning. They discussed how they learned by themselves, as well as with their peers and with the help of their teachers.

Firstly with regards to them constructing learning by themselves they elaborated on how they used slides, videos, books and articles to support their learning. Some of interviewees further added that they also learned by doing the activities as instructed by the teachers on the MOOC.

“how I developed my learning? I developed by reading the books that I bought and the slides. Of course I watched the videos.” (Student 25, Interview)

“how I learned? Okay from books and then from the activities that we had to do. I learned from what Sir said in the videos. Sometimes I had to rewind and listen again and then rewind again.” (Student 13, Interview).

Student: "I learnt through many things. The discussions were useful. The videos were okay too." (Student 45, Interview)

Researcher: "What aspects were important to you?"

Student: "well I think that for me what was important were the slides and other resources." (Student 45, Interview).

However, most discussions of cognitive presence indicators were not concerned with cognitive presence exclusively. Students referred to the teachers represented in the MOOC content (in video lecture content) and to their own teachers. Even those students who said that they can learn by themselves, thus suggesting a certain level of independent learning, still pointed the importance of their teachers on the course at other stages of the interview.

There were no students interviewed who consistently talked in terms of being willing or able to simply interact with course content without teacher support.

There were some cognitive presence indicators, such as course outcomes, assignment briefs and statements of learning outcomes, which were seen to be important:

"The assignments were important and how to do them." (Student 14, Interview)

"I think the outcomes of the course [are important]. I need to know what I need to achieve and then how to do so." (Student 18, Interview)

Even here, students often introduced the role of the teacher into the discussion:

Researcher: "How did you develop your learning on the online course/other form of learning?"

Student: "The course information, isn't it? And Sir too. And discussions. But Sir should have been more involved." (Student 1, Interview).

### 5.3.3 Social Presence (SP)

Student responses to questions about social presence highlighted differences between those who felt that it was very important, and those who were much less concerned about social interactions with other learners.

Others stated explicitly that they did not feel a need for any social presence online at all.

“I don’t know. I prefer just working on my assignments and we have exams. We were talking about it.” (Student 19, Interview)

Researcher: “you did not benefit at all?”

Student: “...I cannot say I did not at all. But I prefer doing my assignments [my work].”  
(Student 19, Interview)

Researcher: “How much social interaction did you have? Tell me about it?”

Student: “I did not have a lot at all what you call it? Social interaction. haha. I was not interested.” (Student 22, Interview)

Researcher: “why?”

Student: “for me it is a waste of time. Waste of time! We do what? Discuss, discuss. What if we were wrong when we were discussing? Then what? We are wasting our time.” (Student 22, Interview).

Some of the students thought that anything to do with developing social presence would have been a waste of time. Indeed they maintained that they were on the course for a specific reason, which was to gain knowledge, and therefore had no time to waste on being part of the online community in which students were unregulated:

“People sometimes were talking nonsense” (Student 16, Interview)

“Okay. Well some students were talking nonsense and not respecting. I think Sir dealt with it. They stopped after. They waste time. It is not nice. Why would you do that? We are all there to learn, are we not? So then why would you be disturbing others?” (Student 4, Interview)

“We had discussions. But sometimes it was difficult. People would not be behaving and that was annoying. It was like a waste of time. The teacher did not do enough. She should tell them how to behave, you know.” (Student 32, Interview).

In Sfard’s (1998) terms this represented a preference for an ‘acquisition’ model of knowledge, with little or no need for interaction with other learners or community-building.

Other respondents mentioned that they were “lurkers” who would read what others would post but not post anything themselves.

“I read what others were saying really. I did not participate. I would not be putting my points or whatever. I would not say anything. I just read what the others were discussing, arguing about and that is it. That is all.” (Student 23, Interview)

“I did not participate too much. It was not necessary. I could see what others were saying. Haha. Then why would I want to interact with anyone? I just read what they say.” (Student 3, Interview).

For these students, social presence indicators of others might have some value, but they did not seek to develop a social presence themselves.

For some other students, a reason for not needing social presence indicators was that their view of the MOOC was that while it provided information and resources, they preferred to be face to face rather than online when taking part in discussions. They indeed did not think that being part of a group was possible online and instead they said that being in a classroom and talking to their peers and teachers directly would be what they would prefer. Some



would indeed not talk to people that they did not know already, and this prevented them from fully making use of the SP elements of the MOOC environment and the online courses.

“we had to participate in forums. My friend was there. So we discussed. But also with others in our class. Mostly her though. I discussed with her I mean. She would discuss with others more than me.” (Student 29, Interview)

“I talked to my friend when she wanted to. But not to people not in our class.” (Student 30, Interview)

“You know we will talk to each other. I mean we talked to each other because we are from the same class at uni” (Student 1, Interview).

These responses, as with those concerned with TP and CP, reflect prior learning patterns and experiences of Mauritian learners whose prior schooling has been dominated by teacher direction and acquisition of knowledge. The cultural and educational norms of Mauritius are evident here and either lead to a view of social interaction around learning as of limited value, or are based in social interactions with which learners were already familiar.

This suggests that possible SP indicator that would be helpful for Mauritian students namely online learners would be to send messages to each other and introduce themselves as an introductory ice-breaker activity. Similarly, the need for a code of conduct was mentioned:

“No, no problem. Hmm ... at the start maybe. Then it was okay ... There has to be like code of conduct ... you know ... how we do in class. People need to know what will happen to them if they breach a code.” (Student 15, Interview)

“And there has to be like ground rules or something. People have to have consequences for how they behave. (Student 16, Interview).

It is important to point out that the data suggest that one should not assume that just because people are active users of social media, they will happily take to social learning

online. Many among the students interviewed stated that they needed their teacher to be on the discussion board. Therefore, despite the fact that the Mauritian learners are active in social media, they do not consider learning using social media meaningful without the contribution of their teacher.

“Well I told you yes that someone like me needs the teacher. It did not seem as if the teacher was on the discussion board. I did not see it. “ (Student 25, Interview)

“See I need to know why I am doing that online. Doing the discussions and all. Sir has to make it clear.” (Student 14, Interview)

Student: “well it was difficult for me to see what to do sometimes. And yes I was not sure sometimes what I was doing.” (Student 61, Interview)

Researcher: “what would make you sure?”

Student: “if someone said that it is okay.” (Student 61, Interview)

Researcher: “Someone? Who?”

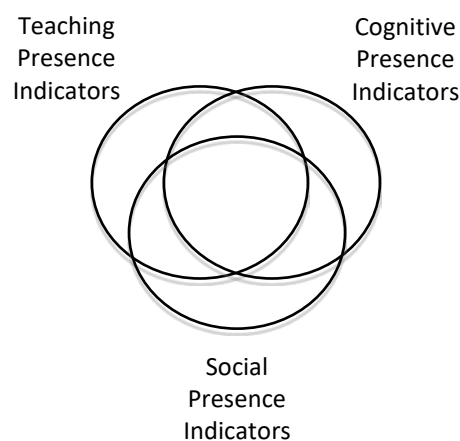
Student: “the teacher?” (Student 61, Interview).

However, these activities, along with other means of developing social presence and learning together, may involve teacher organisation and initiation. For many of the SP indicators including that of developing respect for each other, a hybrid presence whereby social presence is supported or initiated by teacher presence appears to be necessary. This hybrid presence will be discussed further in the next section of this chapter. In addition, student responses suggest that teacher involvement also contributes to the ‘perceived usefulness’ and the ‘perceived ease of use’ of the MOOC, these being key concepts in the TAM2 model which we will also explore further.

### 5.3.4 Hybrid Presence

As the previous sections on Teaching Presence (5.3.1), Cognitive Presence (5.3.2) and Social Presence (5.3.3) have indicated, the students, when interviewed about aspects and indicators of 'presence' often referred to the critical role of the teacher; saw teaching presence as essential for other presence indicators to be developed; and were concerned with the usefulness and ease of use of the MOOC in achieving course learning outcomes and personal outcomes. In this section and those following, these relationships will be explored in greater detail. In doing so, the first step is to consider how the elements of Garrison and Anderson's COI model interact, before proceeding to explore how this model relates to technology acceptance as set out in the TAM2 model.

The model of COI, then, is now seen as comprising a set of overlapping presences, with specific activities and indicators now seen as being (in a few cases) located exclusively within TP, CP or SP; but with the majority involving combinations. The examples set out in sections 5.3.1-5.3.3 have already shown this to some extent but the combinations and relationships will now be explored in more detail. We can now consider the COI model as shown in Figure 5.2:



**Figure 5.2: COI Analytical Framework: presences overlapping and interrelated**

In section 5.3.1 we have already discussed how teaching presence through video lectures was not regarded positively by students, but this is only one example of how students saw the role of the teacher as critical to their engagement with course content and cognitive presence. There were a range of other examples cited by students in which they pointed out that the development of cognitive presence should also involve teaching presence and specifically the active participation of teachers. These included:

- Providing guidance on how to achieve learning outcomes
  - “The teacher could have given me more guidance as to what the outcomes are. The teacher could have told me see this is what we are learning, this is what you have to achieve.” (Student 23, Interview)
- Summarising discussions to draw out key learning points
  - “The teacher should have come more often. Maybe summarise some points?” (Student 31, Interview)
- Answering questions that students put online in discussion groups
  - “He [the teacher] could have answered some of the questions that I put in his discussions.” (Student 10, Interview)
  - “she [the teacher] should have been there like for everyone. Like discussing with all and answering questions.” (Student 24, Interview)
- Summarising the content of videos especially those from other sources
  - “the summaries that the teacher was posting were good” (Student 41, Interview)
- Providing glossaries of technical terms with authoritative definitions and discussion
  - “Also you know the slides and stuff, he [the teacher] could use language that I understand. At least show me how to find out what I don’t” (Student 9, Interview)
- Providing past examination papers and commentaries on them
  - “Maybe give some tips! He [the teacher] could have given us examples of

previous tests, like we have past exam papers.” (Student 15, Interview)

- Having additional support teachers able to carry out the above tasks so that teachers are online more
  - “I think the teacher could have come online more” (Student 38, Interview)
  - “I think that it is difficult for a teacher to give individual attention on such a course. Then maybe we should have more teachers or support ones to cater for what all of us need.” (Student 50, Interview)

While some of the above items could be provided simply as resources in the MOOC, what the students stressed in their interviews was the importance of teacher involvement in discussing, clarifying and highlighting key concepts and providing a framework for learning.

This represents an important issue for the design of MOOCs. Even though the MOOCs used in the study had many cognitive presence indicators, and in many cases these involved representation of teaching presence (such as course outlines, video lectures, powerpoint slides), this may not be enough for students whose expectation is of close attention from teachers, and who require explanation, scaffolding and support for their learning.

This was most obvious in the suggestion from many students that what was of greatest value was one-to-one or small group tutorial support

Student 60 said how he would have liked to be able to communicate on a one to one basis with the teacher:

“He [the teacher] was okay. I think I would want to talk one to one more.” (Student 60, Interview)

Student 11 gave a similar response saying that the teacher could be online at a particular point in time so that the students can ask questions about a particular tool which would not be working for example:

“If I am not able to use a tool, maybe he [the teacher] could be available at a particular point in time, then I can ask him.” (Student 11, Interview)

Student 28 said that the teacher could have been available to answer the questions of the students:

“She [the teacher] could have been there for questions.”(Student 28, Interview)

Student 30 further said that the teacher could spend time in tutorials to explain the slides more:

“She [the teacher] should have been on the discussions with us. The slides were sometimes difficult to understand. She could explain.” (Student 30, Interview)

Student 9 suggested that tutorial functions could be addressed online:

“[The teacher can ] show me how to find out what I don’t understand. Or he can explain maybe in a forum” (Student 9, Interview)

Another interesting example that emerged from the interviews and which represented an aspect of teaching presence that does not appear in the original COI model was the role of the teacher in reminding students of impending deadlines. This is, of course, a task that could easily be entirely automated (and is implemented in VLEs and MOOCs), but students indicated that personal reminders and encouragement from teachers were more important.

Students recognised that teachers were represented because they developed and structured the course and also set out guidelines on what to do. Student 27 even said that in the absence of a teacher, the instructions given would help them:

“Her presence was very important. She [the teacher] has to be there. But at least I get instructions. Even if the teacher is not there physically, the instructions show that she is

there. Am I making sense?” (Student 27, Interview)

However, most of the Mauritian students saw teaching presence as being more than the teacher being online, or being the identifiable author of the content that was presented.

For many students, the success of social learning, the usefulness of discussion boards and the development of social presence in the MOOC was also related to teaching presence and teacher activities. Given the concerns about the value of online tools such as discussion forums mentioned in section 5.3.3, students suggested that what was required was teacher intervention and mediation.

Both the practices of communicating online (sending introductory messages to each other, discussing content or answering each others' questions) and the broader issue of respecting other learners were seen as needing teacher involvement to initiate communication, encourage participation and to help develop a code of conduct for online communications.

Some of the students acknowledged that they could learn through a social online network on their course provided that they felt part of the team. They suggested that they could feel this way if they received initial greetings from others and if they were addressed by names (both of which are highlighted in the COI model as key social presence indicators). Student 14 mentioned how he liked the fact that people knew him by his first name, and added that this encouraged him to participate in the activities and online discussions.

For example, one student said how they could learn from each other, although he immediately added that the teacher would have to be there:

“it was quite a lot I would say. If we talk to each other we can learn from each other. Mr A[the teacher] has to come.” (Student 2, Interview)

He also said that when having tools that enabled the establishment of a social presence online, he felt less alone.

Another student said that he could “see people think” (Student 15) when he was online, while Student 20 described how he sees the online course as “a network”. He stated that he could see people with their names and through the network he could identify how his learning would progress.

“Hmm in my mind it is like a like a network you know. Like I can see people and their names and then joining lines. Then I know how my learning has to go. How do we call it? The structure.” (Student 20, Interview).

Other students indicated in their interviews that “he could not put his point across in class” and that he was “more comfortable in online discussions” (Student 5, Interview). Another said that he was “less afraid” online (Student 53, Interview). However, the majority of the students expected such activities, and the development of social presence to be facilitated by the teachers, thus making these hybrid social presence indicators requiring teaching presence and in many cases the direct intervention of teachers. Students also pointed out that being invited to the discussions would motivate them to participate (Student 33, Interview), and that invitations which included instructions regarding the activities were quite helpful (Students 13, 16, 35, Interviews). Student 12 said that receiving an invitation to participate in an online activity made him feel “part of a team”. But, again the act of inviting students to participate in discussions is expected to come from teachers. COI indicators such as “invitations to discussions” and “participating in discussions” do not simply involve or develop social presence: they involve teaching presence as well. There were few examples of students talking positively about social and cognitive presence, unless combined with some form of teaching presence.

What these student views suggest is that, in practice, it is very difficult to separate the different forms of presence within the MOOC, particularly for students who expected or preferred to have the teacher involved, or at the very least available, in all aspects of their learning.



Teaching presence was required, in the view of the students, to structure, guide and validate students' engagement with course content; and to manage social interactions online between students. In situations in which there was an expectation of social and cognitive presence developing, for example through students working together in a discussion forum (Social Presence) to develop and apply their understanding of new concepts (Cognitive Presence), students wanted teachers present (Teaching Presence) to direct discussion, highlight salient points, and validate student opinions and ideas: a three-way hybrid presence.

The analysis carried out has then moved from trying to identify indicators of separate presences (Figure 5.1) through recognising hybrids (Figure 5.2) but what the students highlighted was not simply 'overlaps' between presence indicators. Instead, they discussed particular practices in which teaching presence indicators enabled social and cognitive presence indicators to develop. The next two sections will discuss two specific ways in which students wanted to see this teaching presence to work.

### **5.3.5 Teachers as Mediators of Social and Cognitive Presence**

The first way in which students wanted teachers to support their learning was as mediators of processes through which social and cognitive presence developed.

The student who wanted "step by step" guidance (Student 34, Interview) was not simply asking for instructions on how to complete a task, but rather the presence of the teacher as guide throughout the course. Similarly, the student who stated: "He [the teacher] told me how to achieve. He told me what was important. He gave instructions how to do the activities." (Student 14, Interview) is highlighting the role of the teacher in identifying what is "important" in relation to course learning outcomes. Furthermore, by stating that "He [the teacher] told us what was important. You know sometimes he puts slides and articles " (Student 9, Interview), the student indicated the significance given to the opinion of the

teacher regarding what was considered as important. The student even highlighted how the slides and articles “...challenge us and make us think” (Student 9, Interview).

For individual and social learning activities to be successful and to involve all the students enrolled in the courses, teachers needed to be engaged in mediation, framing and scaffolding. If we revisit some of the elements of the MOOC courses we can see from student comments that rather than offering these in isolation or leaving students to engage with them without guidance, teaching presence indicators needed to be present as well as social and cognitive presence indicators:

- **Video lectures** and **sets of slides** needed to be introduced; their relevance to course outcomes highlighted; and summarised.
- **Discussion Forum Activities** needed to be introduced; appropriate behaviour set out and enforced; contributions encouraged; teachers needed to make contributions; and views validated or challenged by teachers.
- **Assessment Tasks** needed to be introduced; related to criteria and course outcomes; and reminders of deadlines needed to be provided.

While the MOOCs that were implemented did not involve any student production of content for sharing within the group, it seems likely that students would have expected a substantial amount of teacher intervention in these kinds of tasks as well.

### 5.3.6 Teachers and Validation of Learning

Also important for students was the role of the teacher in validating their learning; both through establishing what were important assessment outcomes; by providing feedback during courses; and at the end.

Students 23 and 36 saw their teacher via the assessment tasks set up, and student 44 further stated that since it is the teacher who is usually the assessor, they would be the best person to inform the learners what they would be looking for in terms of achievement.

“Well the teacher will be the one assessing, isn’t it? So it is important. So they should tell us what they are looking for”. (Student 44, Interview).

Students 38 and 16 mentioned how the teacher would make his/her presence felt by giving feedback to the learners, and suggested that they would need their learning to be validated by their teacher for them to feel confident to move on. This need for validation reflects the cultural norm in education in Mauritius where the teacher is seen as the one who knows more, and to whom students look for reassurance that they are ready to proceed.

This concern with teacher validation was not just in relation to final assessments: Student 23 mentioned that he would not know if he was right if the teacher was not online and monitoring progress:

“How would one know otherwise if one is right? If the teacher does not say so?” (Student 23, Interview)

Other comments from students supported this view that continuous teaching presence was required: Student 56 said that the teacher was like “the backbone of the course” and Student 25 stated:

“[the teacher's presence was] crucial! I cannot know if I am on the right track or not by myself, can I?” (Student 25, Interview)

These Mauritian learners are used to their teacher as guides with them on a learning journey, and this went beyond individual teaching presence indicators simply being put in place.

In summary, teaching presence was, in the view of many of the students, a prerequisite for social and cognitive presence, and for effective learning; and was also a way in which they could be sure that content had been understood and learning outcomes addressed. If they were to undertake independent learning through the MOOC, or participate in social learning activities, they wanted the teacher present, and demonstrating teaching presence indicators before these started, once they were completed, and preferably all the way through them.

### **5.3.7 Teaching Presence or Teacher Present?**

As the analysis of the student interviews went on, it was evident that when students were answering questions and talking about teaching presence, in many cases their interpretation of this concept meant that the teacher was 'present'. The participation of the teacher in every aspect of the online course was seen to be crucial by some students. When asked how important the presence of the teacher online was, some of the students found the question so ridiculous that they laughed (Students 15, 20, 2), the last of whom said that the teacher is "always needed". Another further added (with a laugh) that "without a teacher, there is no course" (Student 3 Interview).

The role of the teacher according to the Mauritian student therefore extended beyond planning the course and populating it with videos and activities. Indeed, a high level of personal participation was seen to be required on behalf of the teacher. Student 24 said that the teacher "has to be part of discussions" (Student 24, Interview): a teaching presence indicator linked explicitly to the development of social and then to cognitive presence. As student 18 said, just having videos online would not be enough and that there would have to be interactions of the students with the teacher, if not during, then after, the video. Students acknowledged the importance of interactions as part of learning, but it has to be with the

teacher either present or actively participating. The use of video lectures, for example, was recognised as a form of 'teaching presence', but having videos online does not qualify as *teacher presence*.

As has been described above, some students recognised that the teacher was represented online in course content, slides, video lectures, and assessment criteria, but at the same time, the largely negative comments about video lectures, or about the lack of teacher involvement in discussions, suggested that for many students, 'teaching presence' meant the teacher was present, at least observing, but preferably intervening and mediating (Section 5.3.5) and validating (Section 5.3.6).

The desired level of teacher presence in online discussions was one of the issues about which the students talked a good deal, and it is clearly one of the biggest challenges for the development of any online environment including MOOCs: this is one reason why Salmon's model of e-learning (2002) is so concerned with this form of e-learning and how teachers need to manage it. Student comments on discussion forum and online chat participation highlighted this: Student 61 stated that if the teacher were to participate more in the discussions then the online learners might "take the discussions more seriously" (Student 61, Interview) suggesting again the validating role of the teacher. Student 45 also stated that the teacher needed to be on the forums on a regular basis, and Student 10 that the teacher needed to answer questions online. Student 24 more specifically pointed out that the teacher should have been there "for everyone" in the discussions.

Student 56 made a particularly instructive comment, suggesting that even if the videos were useful, increased participation from the teacher in the discussions would have been better (Student 56, Interview). Student 34 went a step further to argue that participation in discussions should be actively encouraged by the teacher within the online environment, suggesting that students' engagement in social learning activities was, again, more than a

question of *teaching* presence through setting up questions and topics, and involved *teacher* presence in the environment.

As Knox (2013b) purports, the videos on MOOCs strengthens the traditional and more didactic role of the teacher. Although they give the impression that the teacher is there, s/he is only contributing to the construction of learning in a passive manner. Knox's (2013b) point is reinforced by Carmichael (2013) who also states that the student is excluded from the environment where the teacher is discussing about the topic. In that, there is no scaffolding from the teacher and the students are mere receivers of information. Therefore, it can then be seen that the data from this research agrees with literature. Indeed, the Mauritian learners do need more teacher interaction than just videos, which is one of the main features of MOOCs.

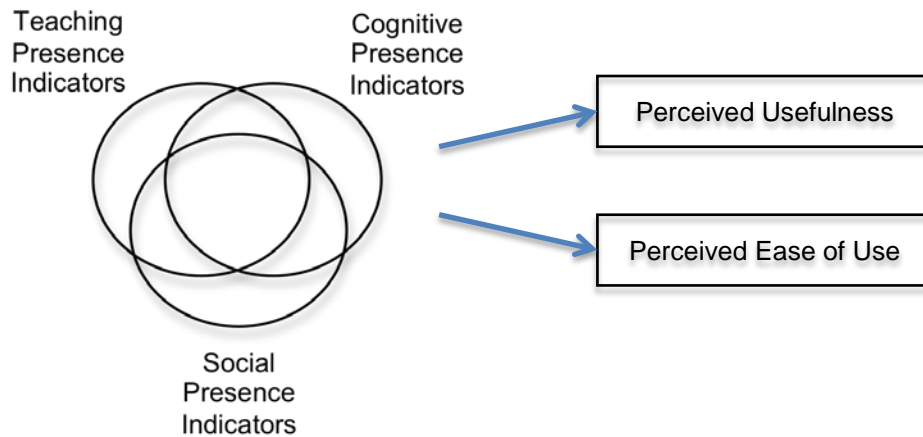
## 5.4 Presence, Ease of Use and Usefulness

The Communities of Inquiry model proved very effective as a way of analysing the student views about learning, both in relation to the online environment and to learning in general. However, the model as it stood did not take account of the fact that this was for many students their first substantive experience of learning online. Analysis of the demographic and background data collected from the students revealed that most had some experience of e-learning although most had gained this in comparatively short courses. Only 13 out of 62 had more than 3 months experience of e-learning (mostly Education and Management students) and Tourism students in particular had experience of short online training courses.

Another important aspect was that MOOCs specifically were perceived as emergent technologies, particularly in the Mauritian context. This meant there was an issue around their acceptance and adoption and so the TAM2 model was used to frame further analysis of the interview data. This initially focussed on the two central concepts in TAM2 that contribute to acceptance of a new or emergent technology in a particular context:

- Perceived Ease of Use (PEU)
- Perceived Usefulness (PU)

What this analysis offered was insight into how different presence indicators might contribute as contextual factors to each of these. We can adapt our previous model as shown in Figure 5.3.



**Figure 5.3: COI and TAM2 Elements**

What is shown in figure 5.3 is not the whole TAM2 model as introduced in Chapter 2, but rather these two concepts; we will discuss further development of this integrated model in Chapter 7.

What was evident from the analysis of the student responses was that, when some of the presence indicators were cited or discussed by students, their presence or absence was closely linked to either the ease of use of the MOOC, or to its usefulness, either in addressing the short-term requirements of the course or (more importantly) the longer-term learning of the student. Particular teaching presence indicators, for example, were concerned with facilitation of learning; while some of the cognitive and social presence indicators were seen by students as being generic or transferable skills or competences.

Teaching presence indicators which have the potential, according to students, to make MOOC use easier or more useful are summarised in Table 5.1.



TP Indicator	Hybrid with SP/CP	Contribution to PEU	Contribution to PU
Explaining value of course	CP		If MOOC offers access to additional expertise
Summarising Content e.g. videos, slides	CP	Highlighting key content within MOOC and resources	Maximising value of online content especially if externally sourced
Providing Advice about Learning Outcomes	CP		Relating course to broader outcomes
Initiating and Inviting to Discussions	SP/CP	Making participation easier for students	Improved student experience and learning
Mediating Discussions	SP/CP	Making participation easier for students	Identifying productive lines of inquiry, identifying misconceptions
Summarising Discussions	SP/CP	Highlighting key content	Identifying productive lines of inquiry; useful resources; transferable knowledge

TP Indicator	Hybrid with SP/CP	Contribution to PEU	Contribution to PU
Providing Glossaries	CP	Making resources more accessible	Useful transferable resource
Additional teachers e.g. teaching assistants or online faciitators	SP/CP	Supports student access to MOOC, dealing with technical issues	Improved student experience and learning outcomes
Maintaining respect in online environment	SP	Making participation easier for students	Improved student experience and learning outcomes

**Table 5.1: Teaching Presence Indicators, PEU and PU**

For most of the students, Perceived Ease of Use was closely related to teacher support; teachers were seen not only as course designers but facilitators of learning and, in the case of online environments, providers of technical support as well.

Also contributing to Perceived Ease of Use (PEU) of the MOOC was the fact that many of the tools found were familiar to the students. This echoes the discussion in Chapter 2 of the fact that while MOOCs as a whole may be novel and emergent, many of the tools within them (web video, discussion boards, chat services) are well-established. Therefore when building or implementing a MOOC for Mauritians, the tools to be included would have to be what the learners are familiar with, or they would have to be trained to use these tools. What is interesting however, is, again, the role of the teacher. In the Mauritian learners' perception of the 'ease of use' of MOOCs depended on teacher support: as one student said:

“If I am not able to use a tool, maybe he [the teacher] could be available at a particular point in time, then I can ask him”. (Student 11, Interview)

Teachers also provided motivation not only in relation to the course but in supporting broader student aspirations, and this was where their role in justifying the ‘usefulness’ of the MOOC was cited by students as being important.

Students also talked about other contextual factors and concerns that would inform whether they would consider e-learning and MOOCs in particular. They discussed the potential increase in their salary and doing a course as a prerequisite of obtaining a qualification that they ultimately wanted to achieve. For example Student 21 stated that what would motivate her to do an online course would be if she can get more money and develop herself:

“If the course helps me to get on the course that I want. If I can get more money out of it.”  
(Student 21, Interview)

This opinion was echoed by many respondents. Student 22 said that the course would have to be useful for their career and be cheap. While they were at university, the cost of courses might not be a concern but beyond that, cost was a key aspect in determining the usefulness of a MOOC for the Mauritian learners who said that they would be more inclined to do a course for their development if the course was to be cheap or even free. It was even stated by student 45 that the perceived usefulness of an online course would increase if an institution was to offer a bursary for part of the course. As some MOOCs are intended to be free, or at least cheap, they would be attractive for Mauritian learners. Then MOOCs would have to be courses that Mauritian learners can use to access degrees or employment and courses that would increase their earning capacity and professional development skills.

However, many interviewees went beyond the cost of the courses. Student 24 stated that would measure not only the quality but the usefulness of a course on the basis of how

prestigious the institution delivering it was: “Important universities. If the course is from important universities and cheap”. (Student 24, Interview). The prestige of UK universities was said to be quite important for potential and current employers and consequently for the Mauritian learners. Student 48 further mentioned that an online course would be more useful to him if it was rewarded with a recognised certificate.

At the same time, students recognised that online courses had a role to play as part of their current degree. Student 14 further said that if an online course was part of the degree, it would have to carry the same amount of credit as a face-to-face course. There was also an awareness among some students of the potential for MOOCs to be used to address appropriate parts of courses where, in their view, teacher presence was less critical: Student 3 made an interesting point by specifying the part of the degree that could be made online, and suggested that the theory section of a qualification can be delivered as an online course. The ‘perceived usefulness’ of the MOOC was, therefore, quite specific to particular course contexts.

Students also described how MOOCs had the potential to be highly useful in courses that help them to improve key functional and academic skills such as literacy, numeracy, ICT and academic writing would be deemed to be useful for them. Several students saw potential in MOOCs outside the university context: Student 61 indicated that this would be useful in his home village, and student 31 suggested that the country's young people were in need of employability skills since the educational system currently focuses more on academic rather than other essential skills. While this might involve careful support to lower barriers to engagement, again, the usefulness of MOOCs was related to the Mauritian educational and social context. This indication of the desire to develop skills that would benefit the society as whole and not just Mauritian learners who wish to go to universities, and a recognition of MOOCs as a way in which this might be enabled, was also a theme in the educational leaders and policymaker interviews that will be discussed in Chapter 6.

Another, related issue raised by students was time. Student 33, for example stated that his perception of the usefulness of an online course may be affected by how long it would take to complete and that, therefore, they would consider the time that would be needed for the course compared to the amount of time that he had available. In their view, the potential to complete a MOOC course quickly, or over a longer period of time according to their needs would make them more useful than a university course of fixed duration which might only run at certain points in the year.

Overall, Mauritian learners perceptions of the value and usefulness of MOOCs were related to extrinsic indicators such as recognised qualifications, financial rewards and employability. Only a few students such as student 29 talked about choosing a course out of interest or the possibility of developing a new skill just for the sake of it.

" A useful course would be something helpful for my career" (Student 29, Interview)

Themes identified related to the 'Perceived Usefulness' of MOOCs in general, and which might therefore contribute to their acceptance and uptake include, for individuals:

- Acquisition of skills related to personal employability
- Improvements in employability and increases in income
- Achievement of an internationally-recognised qualification and certification
- Flexibility of delivery including availability and time required
- Costs

In addition, some students recognised:

- Potential to offer access to education outside university settings
- Acquisition of skills related to employability of young people in Mauritius

The TAM2 model asserts a relationship between Perceived Usefulness (PU) and Perceived Ease of Use (PEU) and this was evident in the student responses, as we have seen

previously. This was, as Table 5.1 indicates, highly dependent on teacher actions. Students mentioned how useful it would have been if the importance of doing the online course, and the benefits of its online delivery, was to be described by the teacher. Some respondents, such as Student 2, stated that the teacher could have included the usefulness of the course in its introduction. Others, such as student 35, thought that the greetings would also have been the right place to do so:

“The usefulness of the course should be made more obvious in the greetings and stuff like the teacher knows about it more, isn't it? So they should tell us what else we can do and why is this course so important maybe in an introduction” (Student 35, Interview)

In agreement with this statement, student 20 further added that the teacher could elaborate on why this course should be done online and not at the university. Student 40 mentioned that:

“... And maybe [the teacher] tell us how good this course is, how I can use it, like in the future” (Student 40, Interview)

In this there is an indication of the need to know about the contribution of the online course to the Mauritian learners' future development. What is interesting here is that, while in many respects the Mauritian learners had a view of the role of the teacher that aligns with Sfard's (1998) Acquisition Metaphor of learning, the role of the teacher they describe is much more strategic, and encompasses many responsibilities apart from simply imparting knowledge. Indeed the Mauritian learners see the teacher as the person to whom they would go to if they are not sure about how useful the course would be to them. In that, the Mauritian learners would benefit from the strategic learning approaches, proposed by Entwistle, McCune and Walker (2001) as complementing surface learning (how do I pass) and deep learning (how do I develop understanding).

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There is an important link here between teacher activities (and teaching presence indicators) and the aspects of Garrison and Anderson's (2003) COI model that link cognitive presence to the application of knowledge gained in the online environment to practice and other learning items in the inventory for cognitive presence (appendix 7). According to the COI model, these cognitive presence indicators are important as they relate knowledge acquired and activities in which students participate in an online environment to employment, professional practice or other broader activities. The students talked in their interviews about the role of the teacher as more than simply a technician or provider of information, seeing that as providing a strategic overview and motivation. Many of the teaching presence indicators (issuing greetings, providing course overview information, moderating discussions, emailing reminders) had a much more complex role than first appeared. They supported social and cognitive development (the 'hybrids' discussed previously), mediated and validated learning and in addition motivated the students, contributing to ease of use of the MOOC and helping students understand the usefulness of its features and the activities in which they were involved. The teacher, for example, would encourage the learners to participate in discussions as stated by this student, "It was like us talking about a task that the teacher set. The teacher would encourage us to discuss. Then we would do so." (Student 44, Interview).

In summary, then, introducing the concepts of Perceived Ease of Use (PEU) and Perceived Usefulness (PU), and the relationship between them into the analysis highlights some interesting new themes and issues, but at the same time, it reinforces the view that teaching presence indicators and teacher support and intervention are of central importance. In the view of many of the students, increasing the ease of use and highlighting the usefulness (both short term and long term) of the MOOC are the responsibility of the teacher.

What the analysis of these interviews revealed was that learners were able to provide a rational perspective as to what they needed from the MOOC. The experience of participating in the MOOCs meant that rather than simply being enthusiastic about using the

new technologies (as was discussed in relation to the Phase 1 pilot data) they were able to identify advantages and disadvantages to the use of the MOOC; see its potential role for their own learning and that of others; and recognise factors that would contribute to the acceptance and adoption of MOOCs more generally.

As the purpose of this research was to develop a strategy for the introduction and implementation, these student perspectives, particularly when they were so clear about what would encourage acceptance, were very important.

### **5.5 Learner Audit of MOOC Features**

The interviews with students were extended by a questionnaire in which they were asked to report on and assess the features and presence indicators of the MOOCs in which they had been enrolled. This stemmed from a concern that the interviews, while they had been framed by the COI model, had resulted in (in some cases) quite abstract responses from students; that their understandings of presence indicators (particularly around teaching presence) was unclear; and that their assessment of the MOOC might be based on limited engagement with only some of its features. Because the MOOCs were embedded in courses and as such were compulsory, other measures such as retention rates were not relevant; so instead students were asked to report on the features and presence indicators that they had encountered and reported or talked about in the main interviews (See Appendix 2 for 'Audit' questionnaire).

The results, in general, suggested that most students had used the majority of the features offered in the MOOC; the items in the audit included not only features that were reported as being present, but presence indicators which were reported as being absent but desirable. This was useful as it triangulated the data collected in the interviews, and avoided 'false negatives' being identified: that is, only students stating that a feature was *not* present being represented in the analysis. In fact, this did highlight the fact that one teacher had in fact



played a greater mediating role than the others, by for example, encouraging participation in online discussion and posting a summary of discussions in the online forum.

### 5.5.1 Audit Results: Quantitative Results

The Indicators, whether they were present and whether students recognised their presence are summarised in Table 5.2. Note that for simplicity (and because at this stage the degree of overlap and hybridity of presence had not been recognised and had not been built into the design of the audit) the items are grouped according to their main COI 'presence'. What is shown in the table is the difference between the potential that the MOOC platforms offered (there being no significant difference between the different platforms) and the extent to which features were implemented and therefore experienced by the students. All 62 students completed the audit.

	<b>Indicator or Practice</b>	<b>In MOOC Platforms ?</b>	<b>How might be Implemented(w hich tools)</b>	<b>Reported by Students</b>	<b>Comments</b>
Primary CP	exchanging information with teacher	Yes	Discussion, Email	5 (8%)	See comment 1
	exchanging information with peers	Yes	Discussion, Email	41 (66%)	
	asking questions on discussion boards	Yes	Discussion	3 (5%)	
	having outcomes and assignments	Yes	Course Overview, Assignments	0(0%)	Assignments but not broader outcomes

	<b>Indicator or Practice</b>	<b>In MOOC Platforms ?</b>	<b>How might be Implemented(w hich tools)</b>	<b>Reported by Students</b>	<b>Comments</b>
	using the resources independently	Yes	Various	52 (84%)	See comment 2
Primarily SP	greeting each other	Yes	Discussion	42 (68%)	See comment 3
	being addressed by first name	Yes	Discussion, Email	2 (3%)	
	invitations to discussions	Yes	Email	45 (73%)	See comment 3
	participation in discussions	Yes	Discussion, Email	25 (40%)	See comment 3
	messages to and from others	Yes	Discussion, Email, Messaging	4 (6%)	
	respecting others	Yes	Discussion, Email, Messaging	6 (10%)	See comment 4

Indicator or Practice	In MOOC Platforms ?	How might be Implemented(w hich tools)	Reported by Students	Comments
sequential structure of the course	Yes	Yes	56 (90)	
course instructions	Yes	Course Overview	58 (93)	
having resources available	Yes	Various	61 (98)	See comment 2
adding a glossary of terms	No	Glossary	0 (0%)	See comment 5
teacher participation in discussions	Yes	Discussion	8 (13%)	See comment 6
teacher to validate discussion outcomes	Yes	Discussion	0 (0%)	See comment 5
teacher summarise discussions and videos	Yes	Discussion, Announce, Email	20 (32%)	See comment 6
teacher to encourage discussion	Yes	Announce, Email	5 (8%)	See comment 6

Primarily TP

Indicator or Practice	In MOOC Platforms ?	How might be Implemented(w hich tools)	Reported by Students	Comments
reminders of deadlines	Yes	Discussion, Announce, Email	0 (0%)	See comment 5
the teacher to write to students (1 to 1)	Yes	Discussion, Announce, Email	0 (0%)	See comment 5
assessment tasks set	Yes	Various	61 (98%)	
the teacher to give regular feedback	Yes	Discussion, Announce, Email	0 (0%)	See comment 5
the teacher to give tutorials	No	Messaging, Chat, Video	0 (0%)	See comment 5
description of the usefulness of course	Yes	Course Overview	20 (32%)	See comment 6
how to achieve learning outcomes	Yes	Course Overview, Assessment	0 (0%)	See comment 5

**Table 5.2: Student Audit of MOOC Features and Indicators**

Some of these results seem counter-intuitive but it is important to remember that the students are reporting now on how their conception of what the MOOC might offer was

matched by their perception of how these needs were addressed in the course of a short, embedded MOOC within their course. Before continuing with analysis of the audit results, the open-ended question responses and how these relate to the interview data, specific patterns in these data will be considered.

**Comment 1:** “exchanging information with teacher” was not implemented as a feature in the MOOCs because of their short duration, but clearly some students were able to email or otherwise contact their teachers.

**Comment 2:** Almost all students (61) were able to locate resources in the MOOC, while a smaller number (52) described doing so ‘independently’. The difference may reflect those students who only access resources when explicitly instructed to do so, or who required help to locate them. The extent to which students feel confident to explore a new online environment may relate also to the perception of ‘ease of use’ in the TAM2 model and is worthy of further exploration.

**Comment 3:** The fact that only 25 (40%) of students describe themselves as ‘participating’ in discussions is interesting and this suggests that the mediating and encouraging role of teachers or discussion facilitators is critical to engage ‘lurkers’ and readers of content who do not see this as ‘participation’.

**Comment 4:** The low number here may reflect the limited level of engagement of students in discussion forum activities.

**Comment 5:** These items (also highlighted in grey) represent a set of features which could be implemented in the MOOC, but were not in the case of the four-week MOOCs embedded in the courses studied. These, along with the other items that had very low scores represent the features of the online environment to which teachers and educational institutions in Mauritius might need to attend to if student experience is to match student expectations and

preferences. This is the 'gap' between a MOOC as it might be minimally implemented and the required level of support that a successful MOOC would offer students.

**Comment 6:** In a number of items, students on one course (Management) reported their presence and implementation. This suggests that even within the limited constraints of this research, variation in teacher practice, in areas such as outline course structures, encouraging participation and summarising content existed, may have significant impact on student experience.

### **5.5.2 Analysis of Student Audit Free Text Responses**

Students also offered comments as part of the audit and these data reinforce many of the messages of the interviews. Here, the students were not constrained by the use of the COI model as an interview structure and as a result what emerges is a set of teacher practice that represents their expectations and preferences. Here the analysis is done by linking what they said they did not see on the MOOC to how they said that that element was important. Triangulating these responses with the previous interviews produced the following patterns. These all exhibit high levels of hybridity in 'presence' (with a few exceptions they are not solely TP, SP or CP) and they also represent areas in which teachers can contribute to the perceived ease of use (PEU) and the perceived usefulness (PU) of the MOOC and its features.

### **5.5.3 Course Structure, Resources and Organisation**

Students reported few problems with understanding the structure of courses delivered through MOOCs and most had enough prior experience of online training or social media environments to be able to find resources that were provided. However, several findings suggest that this is not enough for successful engagement in the MOOC environments. First, the difference between the number of students who reported locating resources (almost all) and then using them independently (52, or 84%) suggests that guidance is required; and secondly, the fact that, despite the fact that the MOOC environment was open

for exploration and resources could be accessed in any order and at any time, most students engaged with it in a clear sequential way and did not explore widely beyond the MOOC content itself. This aligns more with the 'xMOOC' model of structured online training than with Siemens' cMOOC with its emphasis on knowledge building through connection-making. Confidence in locating and using learning resources (independently or with guidance) was higher amongst the students than participating in other kinds of activities, as we shall see later.

There were other pointers to this orientation amongst the students, one of which involved glossaries of terms used in the course. Adding a glossary of terms to the existing MOOCs was judged to be important by the Mauritian learners, but it was clear that the onus of providing it was placed on the teacher. The glossary was perceived as a resource to be provided, rather than as potential social learning activity. Again we can see how the Mauritian learners depend on their teachers for provision of authoritative information. Even where information is easily accessible, and when term or expressions may be contested or meanings may change, Mauritian learners still appear to place great value on the teacher as an information provider.

#### **5.5.4 Learning Outcomes**

While assignment briefs and criteria were provided online the students also suggested that broader learning outcomes needed to be on the MOOC, and this was also an area where they requested teacher advice to guide them regarding how the learning outcomes are to be achieved and how individual activities related to those outcomes. Their responses further pointed out how it was important for them to see the link between the assignments and the outcomes.

### **5.5.5 Interactions with Teachers**

Most students said that they were not able to exchange information or ask questions of the teacher on the MOOC that they experienced. The students for the most part reported that the teacher did not participate in or validate discussions, although one teacher summarised content. This was also a concern in relation to the lack of interactivity offered by video lectures (raised in the Interviews), and the desire for one-to-one contact with teachers either through the online environment or face to face in the form of tutorials. The pattern of teaching presence through digital products such as slides and videos not being as highly valued as teacher presence as a guide and mediator is reinforced here.

One particular area where students had concerns was around teacher feedback on their learning, which many of them felt was best delivered through tutorial support. We will discuss this in detail in section 5.5.7.

### **5.5.6 Interactions within Discussion Forum and Chat Spaces**

Students said that they would learn by asking questions on the discussion boards, and recognised that this was possible, but very few of them did so on the MOOC that they experienced. Some students added that they hesitated to post a question sometimes because they did not want to be seen as not being intelligent, or because they did not want their teacher to view their questions as they might have an unfavourable opinion of them. These students stated that in such situations sending a personal message to their peers would help because then apart from that peer no one else would be able to see their question and they would feel safe. This indicates an interesting paradox for students; teacher guidance and advice is highly valued, but they are unwilling to expose themselves by asking questions directly.

Other students attributed their lack of enthusiasm for participation in discussion to the lack of teacher presence, and wrote in his audit comment:



“I said when I was interviewed, ‘How would I know if I was right if the teacher is not saying so? Then if the teacher is not there, why should I waste my time?’” (Student 22, Audit)

A common theme in the interviews and in the audit comments was that, like a discussion done in a classroom situation, an online discussion should have a teacher motivating people to participate. According to students, this is because there may still be participants who want to make a point but are not able to due to their shyness or because others have taken over the discussions. The responsibility then falls upon the teacher to ensure that everyone is able to contribute to the discussions. Again, it is interesting that while students felt that the introductory work needed to be done (introductions, an online code of conduct, ‘netiquette’), continued involvement by the teacher, through facilitation, summarisation of discussions and validation of outcomes, was still required. Additionally, they wanted their teacher to structure and control the flow of the discussions, by setting times for the discussions to take place and the topics to be discussed. Also, the teacher was seen as being responsible for stating when the discussion would not be going in the right direction and intervening if necessary. During the interviews, the learners did recognise that learning would happen through peer discussions. However their expectation was that their teacher would validate the points discussed and conclusions arrived to in the discussions and they said that this form of participation and validation by the teacher was not found on the MOOC.

A lack of teacher involvement was one of the reasons that students said that they did not participate in online discussion. But there was a broader lack of confidence on the part of the students to discuss different aspects of the course; and this was compounded by the fact that few others were seen to make any contribution to the discussions. Firstly, the students need to feel part of the group to be encouraged to participate in discussions and secondly, they need guidance from the teacher. In both instances, however, a strong teacher presence (not simply teaching presence indicators such as questions or topics) is required.

The concern with validation of learning which was discussed in section 5.3.6 recurred in the comments in the audit. Validation of learning, based on model of learning that matches Sfard's (1998) acquisition metaphor seems to be a recurring necessity for Mauritian learners. Students found little evidence that teachers were validating their learning in discussions and as it was important for them to know that they were "on the right track", there were many comments about this particular issue. One respondent wrote that comments on the discussions online would indicate whether the arguments brought forward were relevant. Another comment expressed concern that time was wasted by the fact that some learners were discussing for a long time on some irrelevant aspects. Indeed, the student stated that "We were all discussing. Then there was a test on the discussion. We all failed!" (student 46, Interview). The respondent added that "If the teacher would have told us that we are not right, it would have helped." (Student 46, Interview).

Students also expressed mixed views about peer-to-peer messaging and discussion; although in interviews, some mentioned how it would be productive for them to have messages to and from their peers, in the questionnaire only 4 (6%) said that they had messaged other students and among the comments that were made were "It would waste my time. I don't know them", "Not sure who should I message", "It would be good. But I don't know anyone", and " I want to do it. But don't know why to message". The students who did engage directly with peers often knew them already, suggesting that, once again, there is a need for structured activities that both allow students to get to know one another and which normalise the practices of replying to discussion threads, asking for help, and direct messaging.

### **5.5.7 Assessment and Feedback**

Following on from the discussion of online discussion, a key role for teachers which emerged in the interviews but was highlighted as not taking place in the MOOCs as experienced was the provision of feedback as part of formative assessment as the course proceeded.

There were few concerns from students about the formal provision of assessment briefs, information about assignment submission, and assessment criteria, which most students reported finding in the MOOC without difficulty. There were also some more specific requests from students for teachers to offer support close to assessment deadlines, providing reminders and advice as to what to do if deadlines were likely to be missed, and helping students when alternative assessment submission methods were needed (for example, submitting via email if web assessment handling was unavailable).

Where there was a concern was in the area of formative feedback, defined by Black and Wiliam (1998) as the feedback received for the formation of learning. One respondent commented that the lack of the teacher's presence online in this respect was very disappointing. He further stated that by the time that results of interim assessments based on the work carried out in the MOOC came out, it was indeed too late to rectify anything. Another respondent wrote that he had to wait too long for any reply for any question, if at all he did receive it. He added that he felt quite alone on the course because of the above.

With much of the discussion of course content taking place in MOOC discussion forum activities, this meant that the opportunities for teachers to intervene, diagnose areas where learners were struggling, and act accordingly were limited. The fact that students were shy or unwilling to participate (for example, by asking questions about areas that they were finding difficult) made this even more of a challenge. What the student argued that they wanted, but found no evidence of in the MOOC was any kind of tutorial support. One student mentioned how he has never seen any online course having online tutorials, but

commented that such a system would be helpful for learners again to ensure that they were on the right track (Student 26, Audit).

Other suggestions included a booking system could be in place where teachers could give time to the learners, and that online chat or video tutorials could be offered before final assignment submission either by teachers or teaching assistants (perhaps in different countries) to help in the tutorials. One of the students (Student 33) who suggested this recommended that tutorials not be given a first resort to any question that a student might have. The students would use the other ways to ask questions first. Indeed the respondent said that knowing that there were more ways to get answers to their questions would enable the students to feel more motivated.

While many of the students wanted more timely and more frequent feedback, there was an awareness from those with more experience or knowledge of e-learning that this might involve either the use of digital technologies or changes in learning strategies on the part of learners. For the most part, however, the idea of a 'tutorial' which either involved individual, face to face attention from a teacher, or a good online version of the same, was what most students felt would be the best form of support for their learning and the most useful means of providing feedback.

### **5.5.8 The Benefits of E-learning and MOOCs Specifically**

An obvious but important issue that emerged from interviews and audits, and which has bearing on student perceptions of the perceived usefulness (PU, from the TAM2 model) was that students did not report the teacher describing the usefulness of the MOOC. The students did mention that there were instructions given by the teacher at the start of the course, but there was no pathway drawn out explaining how the skills of learning online were themselves valuable as a means of ensuring access to future learning.

Some students mentioned that they would have been more inclined to take more courses through MOOCs if they knew how useful they would be to them; at the same time others described the lack of knowledge about what could be the advantage of doing the course as a possible reason why they might not finish an online course.

“If the course was to be something that would help me, maybe learn stuff or achieve a level that will then help me to join a course. Things that can help me to join a course – like a prerequisite course” (Student 25, Interview).

“If I don’t see how useful it is, why would I continue the course?” (Student 21, Interview).

One student added that it was important for him to know more about the usefulness of the course from experts since he would be able to trust their opinions.

“The usefulness of the course should be made more obvious in the greetings and stuff like the teacher knows about it more, isn’t it? So they should tell us what else we can do and why is this course so important maybe in an introduction. In fact, experts should tell us how useful the course is.” (Student 35, Interview)

The students also wrote about how such knowledge, about the source, value and relevance of courses would motivate them to take such courses seriously and attempt to gain a certificate that would evidence their achievement and further either their academic or professional development.

## 5.6 Summary of Findings from Student Data

Key findings that emerged from the analysis of the student interviews, and which were supported by the views of large numbers of the students interviewed are as follows:

- For this group of Mauritian students, teacher presence (not simply teaching presences in the COI model) was of critical importance to motivate, support, mediate and validate learning, even when the content of the MOOC was of high quality and well-matched to the learning outcomes of their course.
- While the easy availability of slides, video lectures and other resources was useful, it was teacher mediated discussions (either in groups or one-to-one tutorials) that were seen as the most valued learning activity.
- For this group of students, they were, in most cases, able to access online resources, locate and read discussions online and, in fewer cases, to ask questions and exchange information. A number of them, however, did not describe doing this independently and with confidence, and their interviews and audit responses suggest that they would benefit from additional support from teachers or online facilitators.
- Teacher presence was a major contributor both to making the use of the MOOC environment easy and also in highlighting its usefulness in addressing course learning objectives and wider learning outcomes.
- While the MOOCs implemented as part of this research were short in duration and did not fully implement all the features available, it was clear that even a full, well-supported implementation might not match the expectation and needs of Mauritian student users. For example, expecting students to take part in online discussions of learning content, even with teacher mediation, might not be enough to overcome the concerns that some students voiced.

The Communities of Inquiry model was useful as a starting point for the analysis and generated some detailed student data about their views of learning, learning online and of the MOOC, but the exploratory nature of the research and the analysis have highlighted several developments:

- Analysis of teaching, social and cognitive presences in isolation provided a useful 'checklist' for features, but did not capture how the actual practice of teachers could contribute to the experience of students.
- Many practices involved hybrids, with those involving teaching presence indicators alongside social and cognitive indicators most obvious. These were more than simply overlaps between categories: students indicated that teaching presence indicators were prerequisites for other features and practices.
- Teaching presence indicators were recognised by students, who could see how their teachers played a role in course design, content production, and assessment processes, but to reduce their expectations of their teachers to a list of indicators does not adequately describe their expectations of their teachers or of the pedagogical experiences that they wanted and valued.

A summary of the above findings is provided in the table below:

Indicator or Practice		Examples of Interview Excerpts
Primarily CP	exchanging information with teacher	The researcher: How much social interaction did you have? Tell me about it? Student 38: yea we talked to each other on the forums. On the places where we go to discuss. You know what I mean? The teacher also participated. So we interacted there as well. The researcher: How was his/her presence important to you on an online course? Student 18: Oh li ti important mo croire. Oh it was important I believe. I dont think that just listening to videos would be enough. Mo bisin coser are li. I need to talk to him/her. Interaction with teachers is important.
	exchanging information with peers	The researcher: How valuable was it? Student 11: Yes it was okay. You know. Sometimes we had personal messages. That was good. It made me feel like part of the group. It is also better because I sometimes cannot put my ideas online. I think what will people say? Maybe my teacher would think that I am stupid to ask something. Then I ask my friend. I send her a message.
	asking questions on discussion boards	Student 10: He [the teacher] could have answered some of the questions that I put in his discussions.
	having outcomes and assignments	Student 14: The assignments were important and how to do them. Student 18: I think the outcomes of the course [are important]. I need to know what I need to achieve and then how to do so.
	using the resources independently	The researcher: How did you develop your learning on the online course/other form of learning? Student 21: There was information on a session basis. I learnt from them Student 23: from the videos and I read the discussion boards too
Primarily SP	greeting each other	The researcher: How valuable was it? Student 16: From the start I see how the community is. If the teacher greets then I see that okay maybe I want to register. Then if he or she continues to pay attention to me, then I know that I am part of the community. If the students talk and welcome me and then they also continue to greet me then I also feel like I am part of the community.
	being addressed by first name	Student 13: I think that it was good. People were talking to each other. Sir sent us invitations. That made me want to go and see. But if he added instructions in the invitation that would be better. Oh oh you know when they call me by my name, I feel like we know each other. I do not want to put my picture online. So I only have my name by which people will recognize me. That is good.
	invitations to discussions	The researcher: How valuable was it (greetings)? Student 33: The greetings were fine. So helpful. I was even sent invitations to discussions. That would make me want to participate.
	participation in discussions	The researcher: How much social interaction did you have? Tell me about it? Student 17: yes there was social interaction. When you say social interaction, explain what you mean? The researcher: when you interact with each other. Student 17: kan nous coser? you mean us talking?



Indicator or Practice	Examples of Interview Excerpts
	<p>The researcher: yes talking and sharing online.  Student 17: oui oui nous ti ena. Nous ti p participe dans banne activitees. Nous ti p discuter. yea yea we had to sometimes.  We [participated in activities] had like activities to discuss about so and so.  The researcher: How valuable was it?  17: it was I think. Especially when Sir was there.</p>
messages to and from others	<p>The researcher: How valuable was it?  Student 11: Yes it was okay. You know. Sometimes we had personal messages. That was good. It made me feel like part of the group.</p>
respecting others	<p>Student 23. let me think. I was reading their discussions. Yea, some of them were talking quite how should I say... openly to each other?  The researcher: openly?  23. you know not too nicely. People should respect each other. People should talk to each other with respect.</p>
Primarily TP	<p>sequential structure of the course  Student 47: it was okay. The structure of the course was clear.  The researcher: How was your teacher "seen" on an online course?.....Was it only through interactions?  Student 34: The way she put the course step by step. I mean it is clear that there is an element of her presence there right?  She was the one to put the structure. That was the teacher who did the course.</p>
	<p>course instructions  The researcher: How was his/her presence important to you on an online course?  Student 27: Her presence was very important. She has to be there. But at least I get instructions. Even if the teacher is not there physically, the instructions show that she is there. Am I making sense?  The researcher: yes sure. What else could your teacher have done to help you?  Student 27: She could have participated in discussions more. Yes she could have done that. She could have been on the discussions ta.</p>
	<p>having resources available  The researcher: How did you develop your learning on the online course/other form of learning?  Student 25. the books that I bought and the slides. The videos.</p>
	<p>adding a glossary of terms  Student 9: Also you know the slides and stuff, he [the teacher] could use language that I understand. At least show me how to find out what I don't"</p>
	<p>teacher participation in discussions  The researcher: How was your teacher "seen" on an online course?.....Was it only through interactions?  Student 1: yes, how else?  The researcher: What else could your teacher have done to help you?  Student 42: more participation on the discussions.</p>
	<p>teacher to validate discussion outcomes  The researcher: Were there any problems?  Student 30: it was fine. The teacher could have given more instructions and oversee the discussions. You know like when we talk to tell us if we are on the right path. If she told me what she thinks about what I said at least I would know that she is also reading what we write.</p>
	<p>teacher summarise discussions and videos  The Researcher: What else could your teacher have done to help you?</p>

Indicator or Practice	Examples of Interview Excerpts
	Student 33: The teacher could have been like doing summaries for discussions.
teacher to encourage discussion	The researcher: Were there any problems? Student 26: not many people came online. Sometimes because of that the discussions were not interesting. The teacher could have encouraged the others to come.
reminders of deadlines	The researcher: How was his/her presence important to you on an online course? Student 29: Oh ho. I need my teacher. You know I almost missed a deadline. If she did not remind I would have missed. For me I think that it is important. Crucial meme. The teacher would tell me things like when something is due.
the teacher to write to students (1 to 1)	Student 60: He [the teacher] was okay. I think I would want to talk one to one more.
assessment tasks set	The researcher: Describe your experience. Student 23: I was more concerned about finishing the course and the assessment. Experience? I wanted to finish the course. I wanted to achieve what I can to achieve that is it. There is nothing more. I go do the course do the assessment and then that is it. I am not concerned about anything else.
the teacher to give regular feedback	Student 19: The teacher's feedback was important. because I always need to know if I am doing the right thing, I am on the right track. I don't like wasting my time
the teacher to give tutorials	Student 9: Maybe the teacher could have things like slots you know. We book and then we can skype and stuff. Also you know the slides and stuff, he could use language that I understand. At least show me how to find out what I don't. or he can explain maybe in a forum.
description of the usefulness of course	The researcher: What else could your teacher have done to help you? Student 35: The usefulness of the course should be made more obvious in the greetings and stuff like the teacher knows about it more, isn't it? So they should tell us what else we can do and why is this course so important maybe in an introduction. In fact, experts should tell us how useful the course is.
how to achieve learning outcomes	Student 15: Maybe give some tips! He [the teacher] could have given us examples of previous tests, like we have past exam papers.
Perceived Ease of Use	Student 11: If I am not able to use a tool, maybe he [the teacher] could be available at a particular point in time, then I can ask him.

**Table 5.3: Interview Excerpts (Mauritian Learners)**

Integrating elements from the TAM2 model of technology acceptance provided a useful way of extending the initial analysis, as it introduced additional teacher roles and teaching presence indicators related to the ease of use of the technology platform and the elements within it; and the usefulness that these had in addressing learning outcomes. If MOOCs are

to be successfully implemented more widely within higher education in environments like Mauritius, and to have a role in lifelong learning, then students need to feel confident in using them and willing to enrol in MOOCs or MOOC-like courses in the future. The relationship between the two models used here (COI and TAM2) will be discussed further in Chapter 7. First, however, we will explore teacher, educational leader and policymaker views on MOOCs in Chapter 6.

## **Chapter 6: Findings and Analysis: Educational Leader, Policymaker and Teacher Data**

### **6.1 Introduction**

This chapter presents and interprets two sets of data: the results of interviews with three educational leaders and a senior policymaker within the Mauritian education system; and a set of evaluative questionnaires conducted with the teachers who had been involved in the three courses in which the MOOCs had been implemented. The emphasis of these interviews is less on the elements of the COI model and more on the factors that might contribute to the adoption and acceptance of MOOCs within higher education, and more generally, in Mauritius.

### **6.2 Education Leader and Policymaker Interviews**

The role and backgrounds of the individuals involved have previously been described in Table 4.3.

#### **6.2.1 Interview with M, lecturer and researcher in a distance learning institution**

The first interview conducted was with M, a lecturer of a distance learning institution who also researches on, and contributes to the making of decisions relating to distance learning. She taught students from levels 3 to 6 (pre-University to undergraduate). In the course of the interview, she described her perceptions of the role and usefulness of MOOCs, their business models, the barriers that may prevent them from succeeding and how these barriers could be overcome.

M was a key participant as she was the only person at the time of the research to have used MOOCs officially in Mauritius to teach a course using a blended approach: she used Coursera and Moodle as platforms, alongside face-to-face teaching to train school teachers

[both Primary and Secondary schools]. She described the “blended MOOC” as being the use of face to face sessions with existing MOOCs with external content, which were related to what she was teaching. She described the outcome as being a “100% success” but it has to be recognised that this was a reflection not of MOOCs alone but of her success in integrating them into her own blended approach.

M stated that MOOCs offered opportunities to those who may not have the chance to access education otherwise. Mauritians who want to improve their academic achievements, career opportunities and financial situations may sometimes not have the means to do so. She further mentioned that other restrictions that they may face are time constraints and living far from institutions where they would ideally want to study. M described e-learning to be: “an avenue which opens up opportunities for people who want to learn” (M, interview). She explained how learning online enabled her to achieve qualifications which financially and geographically she would not have otherwise been able to achieve.

Relating this to MOOCs and specifically to the Mauritian context, she talked in detail about her experience of working with students and prospective students:

“...late last year somebody whom I told about the MOOCs and who heard about my project contacted me to do the course. But he was too late but I told him about where he could go and find some MOOCs and he phoned back to say that he was following 3-4 courses at the same time, I am so, so happy that there is this opportunity, he is a clerical officer in a ministry somewhere and it kind of opened up his avenues. I think really that online learning is a big, big thing, that happened in education and specially in Mauritius where people cannot afford even the time to go to university even in a physical way so it can kind of set the trend for a learning society” (M, interview)

According to M, it can be seen that MOOCs may fit the current educational needs of Mauritius, particularly where students are already working, or need to undertake courses to gain access to University. More generally, they could be utilised when a person needs them,

and can thus contribute to the lifelong learning of an individual. M saw MOOCs as part a broader “learning society” closely related to the availability of many “avenues” into learning and through the life course. In the case that she mentions, it is not just that MOOCs are e-learning courses, it is the fact that MOOCs are open and free that would enable Mauritians to access education and better their life chances. M seemed to be implying that MOOCs would enable learning to happen for individuals at any stage of their lives, adding that being able to learn online was “one of the best things to have happened to education in Mauritius” because it removed a colossal barrier to tertiary education, namely financial limitations to study locally or abroad. M explained how MOOCs could increase the Mauritian learning community and enable Mauritians to join the “global learning community”.

M also talked about longer-term skills development for Mauritians and stated that MOOCs meant that: “People can continue to study if they want to and not give up on their dreams” (M, Interview) suggesting that MOOCs would help Mauritians to improve themselves and continue to develop their skills at any stage of their lives. M elaborated on how MOOCs would provide the tools for those who wanted to keep learning throughout their lives to actually achieve such goals.

M’s experience of being the first person to implement a MOOC in Mauritius led her to realise that Mauritians generally were not aware of MOOCs and what they might involve:

Researcher: “People responsible about education in Mauritius know nothing about it?”

M: “I cannot say. But there was not any MOOC being introduced in a formal way in a formal set up because all those who came or those who applied they have not most of them as I have said haven’t heard about it.” (M, Interview)

This was a critical observation as it confirmed the importance of my research. Furthermore, as recently as in February 2017, a newspaper article reporting on the potential of MOOCs described them as a “resource centre” (Mauritius Institute of Education, 2017). It explained

what MOOCs were and mentioned Coursera, EdX, Udacity and FutureLearn, but reflected a view of them as resources to support blended or face to face learning: in other words, as sources of open educational resources or learning objects. At the same time, the article also indicated an interest in digital learning in Mauritius.

However, given this lack of understanding, M suggested that a blended approach for MOOCs would be more appropriate for Mauritians. By blended approach, she meant using the usual face to face sessions together with existing MOOCs, but without customising them extensively: effectively, what my research interventions with the three groups of students had involved, although with more face to face involvement from the teachers. This was, as chapter 5 has demonstrated, very similar to the desired combination of e-learning and teacher involvement that the students identified.

M also talked about the broader frameworks that might enable the implementation and acceptance of MOOCs. The aspiration to use MOOCs to develop Mauritius into a “learning society” would need the support and understanding of key decision makers in Mauritius:

“At government level, what does, for example, the state ... like for the people? Let us say that the policy would be to empower the Mauritians and to create this learning society ... then I believe that there would be investment in that area.” (M, Interview)

M gave the example of how if the Government wanted to “empower people and create a learning society” (M, Interview) and if it also believed that MOOCs would help address broader social welfare issues, then it would invest in such a project. This clarified her vision of a “learning society”: with the help of MOOCs, the Mauritian society would be able to learn throughout their lives, when and where they needed. This educational opportunity and freedom would benefit them socially and financially, and consequently it would be an area in which the Government would want to invest and take responsibility of the cost and time required for the delivery of MOOCs in Mauritius.

According to M, individuals and institutions that already saw the usefulness of MOOCs in achieving their goals would need to be involved in such a project. However, at the same time, they would need to align with what the Government wanted because it would be on the basis of the Government planning and investment that the success of MOOCs would rely. M then discussed the perspective of higher education providers, who would have some of the same concerns as the government, but additionally, they would need to determine how investing time and effort into MOOCs would benefit them as institutions:

“Then you have to look at it from the perspective of a tertiary institution when you have to pay the salary of people you have to run the institution. So you need the money. So that is why you can’t afford to give courses like free MOOCs. Let us say even for starting one MOOC for free, well you need time you need to invest in terms of time, energy, resources for that.” (M, Interview)

Therefore they might use MOOCs not only to support existing students, but also as marketing tools to attract a bigger share of the market. Additionally, she said that if Mauritian universities wanted to retain their market share against competitors (both local and international), they would have to use MOOCs so that they could compete with other rival universities or other institutions. MOOCs offered by external providers could potentially be a possible threat to local higher institutions’ market share, but also represented opportunities for them to remain competitive if they implemented them effectively.

When talking about the subjects that could be delivered using MOOCs, both the Government’s and institutions’ perspectives were mentioned. According to M, the Government’s concern with social and financial development might be addressed by institutions offering those courses and subjects that aligned with those priorities. She pointed out that the subjects that could be delivered as MOOCs initially might be skills based such as functional skills, employability skills and so forth, to address gaps and contribute to the skills growth of the Mauritian population.



However, M said, if we look at MOOCs from the institutions' perspective, then introductory subjects that may lead to degrees may also be taught. So we can see that an important point to be considered when developing the use of MOOCs in Mauritius is the possible business models. Institutions wishing to implement MOOCs might, therefore, need to develop a multi-faceted strategy in which both national and institutional priorities were addressed. Critically, of course, we know from Chapter 5 that student perspectives and preferences would also need to be addressed. This is an issue that will be addressed in more detail in Chapter 7.

As a teacher and educational researcher, M was aware of the pedagogical and technical issues that faced institutions and individual teachers seeking to introduce MOOCs and bring about other educational innovations involving digital technologies, and the interview also discussed these. Her experiences were particularly useful as they raised some of the same issues that had emerged from the student data described in Chapter 5. She specifically talked about three key potential issues which could be barriers: network and particularly broadband quality, low IT skills of the students, and foregoing the sense of "belonging" that students have when in face to face sessions, this latter issue aligning very well with the social and teaching presence issues discussed in Chapter 5.

The first issue she raised was that of network quality. When she was teaching her blended course, she talked particularly about the challenges of supporting learners on Rodrigues (a small, autonomous island about 560km from Mauritius with a population of about forty thousand):

"Here [in Mauritius] it was most of the time okay. But you know I had a third group in Rodrigues. This was an issue, the internet was an issue because ... for example our first face to face session, I had a group in a physical set up and the group from Rodrigues was listening live, from video conferencing, and the internet broke down, first here but it was back to normal very quickly then it broke there. So they lost it, you see. So what I had to do was like record, video tape our face to face so that they could catch at least something but it was

an issue for Rodrigues ... at least twice ... another time the participants came and they never got to listen to anything because the internet just broke down.” (M, Interview)

Given the aspiration to use e-learning and MOOCs to support students at a distance from the main higher education sites, this was a significant challenge. In the absence of face to face sessions, it was also difficult for her to hold synchronous sessions and she had to record the sessions and upload them for their use: interestingly, presenting the students with an experience with reduced teaching presence and opportunities for social presence to develop.

The second issue was the variation in IT skills amongst students:

“From my experience ... first in terms of difficulties it was for those learners who [have] never been on an online course before and some of them who were not even really familiar with anything that has to do with the internet. Like some ... very few, but some, did not even have an email address. Yeah, so just to give you an idea of the spectrum of the profiles of learners that you may be facing like those who were not accustomed at all with what they had to do with online learning and online communication and internet. And then you have on the other end those who are already IT people, IT familiar.”

What this suggests is that the “perceived ease of use” within the TAM2 model and the composite model presented in Figure 5.3 of the previous chapter may be highly variable, and the requirement for the teacher to act as a technician (mentioned by the Mauritian learners who I interviewed) may also be highly variable. This also suggests that the “perceived usefulness” may vary according to the value that different students attach to e-learning and online skills more generally.

This variation may also be complicated by the fact that, as Phase 1 pilot data indicated, students were for the most part very positive about e-learning; but this means that teachers potentially may have to support enthusiastic expert users of digital technologies as well as

those new users whose enthusiasm is a result of the novelty of the experience of learning online.

M used the breadth of this spectrum as a good reason for the blended approach she had used. She described how for those who had low levels of IT skills, the face to face sessions would enable them to catch up on intended learning outcomes to be achieved for the week. She further added that such face to face sessions also helped students who were on the high IT skills' end of the spectrum because they would be discussing and strengthening their learning. Again the notion of using MOOCs in blended environments, or embedded with broader courses comes up and is reinforced by the need that "everybody felt like they belonged" pointed out by M.

This was the third issue that M identified. The sense of belonging mentioned by M aligns with preferences of the students interviewed. M discussed how, due to the face to face sessions, the learners were able to take greater ownership of their learning process and feel part of the learning community. She described the ease with which the learners participated in the discussions and how the students shared their experiences and learning and some learners even volunteered to share. She said how she would sometimes be surprised by which students were volunteering to talk in face to face discussions due to the fact that these same students made little contribution to online discussions. Her assumption was that this might be because of their low level of IT skills and how they were more used to face to face discussions.

If the course as a whole is seen as a Community of Inquiry, it was through the face to face sessions that many social presence and teaching presence indicators were developed, for at least some students. So when implementing MOOCs in Mauritius, whichever scenario we use, we have to consider that the COI elements may emerge online, in face to face activities, or in a combination.

### **6.2.2 Interview with a DH, a Policymaker in the Ministry of Education**

The interview with DH reinforced some of the points raised by M in her interview. As a government official and decision maker, DH spoke about the potential of MOOCs in terms of economic development and social welfare, and DH noted that MOOCs would be useful to a country such as Mauritius because of the fact that they are free, and had the potential to reach more people:

“DH: ...You say that it is free. Of course then it means that more people can benefit from it. Now the question is what does the country need at the moment...”

What DH identified were courses such as those on adult literacy, employability skills and agriculture programmes which could be delivered as MOOCs.

DH identified a specific role for MOOCs in filling gaps between what people learned in educational institutions and what employers required. Indeed, he discussed about how the qualifications being delivered in Mauritius are very academic and how often employers complained that newly qualified employees did not know how to do basic administration tasks. Then short, free courses which would be accessible anywhere and when needed via the internet would be helpful:

“See in Mauritius now, there is a lack of trained people. People come out of universities with degrees but no training. Employers are complaining that degree holders do not know how to do basic office stuff. So education has been very academic. Plus, other people who do not work because of lack of basic skills, they can increase their employability.” (DH, Interview)

With regards to the costs of establishing and supporting the implementation of MOOCs, DH asked, in the interviews if universities would want to collaborate, suggesting a potential way forward would be for a joint endeavour (again, as suggested by M). However, as a policymaker, DH indicated that there would need to be a careful consideration of costs and benefits at a national level.

The information that DH mentioned that he would need indicated a global approach of assessing whether MOOCs would work. He said that he would see “what other similar countries are doing” and reviewing how countries that have similar economic and social contexts as Mauritius were using MOOCs. However, and very importantly, DH admitted that the knowledge that was available to guide such decision making was very limited and patchy, with key information missing. He described how he would try to access information relevant to MOOCs. He said that if he needed information about MOOCs or any other aspect of e-learning, he would first of all ask his team to “Google” the term, identify previous relevant reports on e-learning and any barriers that might exist. These would be the focus of investigations into whether these barriers still existed and how they might be addressed.

This level of cautiousness is further seen in what DH said about the costs involved in using MOOCs in Mauritius. In terms of the cost of implementing MOOCs, he said that both the universities and the Government of Mauritius would need to see relevant documents relating to the costing of any project. Indeed the cost would be balanced against the potential benefits for a decision to be made. These costs would involve not only setting up costs but the time that such an endeavour would entail. It would also include any legal implications, intellectual property and copyright issues. The government's concerns with economic and social development meant that there would need to be a full analysis of possible consumers and how information would be disseminated to them.

### **6.2.3 Interview with a YB, a University Vice-Chancellor**

The next interview to be conducted involved another key stakeholder in any MOOC implementation project that my research aims to inform, YB, a university vice-chancellor. It was interesting to reflect on how DH's concern that universities would need to be involved was echoed in YB's view as a university leader. Again, the interview was concerned with a broader range of issues than simply pedagogical ones, and reinforced the fact that considering other factors that might influence MOOC acceptance was required.

YB viewed MOOCs primarily as competition, and discussed the fact that despite his concerns about how MOOCs could be a threat to universities, he thought that they could still be a niche to be explored. He said that if potential learners were to get everything via the internet then they would not be willing to come to Universities who would then lose student numbers and business:

“Online learning is the alternative to face to face learning at universities. Online courses are taken by those who want to study in their own time and such courses are also less costly. For institutions such as this one, online learning is a bit of a threat. People will not come to us if they have the same thing online. Will MOOCs not be a threat as well?” (YB, Interview)

At the same time, however, he added that the best thing to do in such a situation would be to join in the provision of MOOCs so as to be in a better competitive position, by reducing the costs of the courses offered. When doing the latter, although the University would earn less profit in the short run, more students might be attracted to their low prices and in the long run this might bring benefits:

“But then if we think about it, the best way to compete is to adopt. I think we can use MOOCs to reduce the cost of our courses.” (YB, Interview)

When asked if this might not be financially risky, he replied:

“Yes definitely in the short run. But it seems worthwhile to see if we use MOOCs and more

students can have an initial access to our courses then more students would enrol. In the long run it may be more profitable.” (YB, Interview)

“See the initial courses would be free, we will bear the cost. Then if students want further stages of the course they can pay. This cost will be lower than if they were to take the full course. We will be at an advantage and so will the student.” (YB, Interview)

Like DH, he talked in terms of cost-benefit analysis and highlighted the value of the current research in informing decision making:

“We cannot just decide like this while talking. A cost-benefit analysis would have to be done. If your project helps in terms of the pedagogy that would suit Mauritians, then it may reduce the cost of “finding out” what is best for us.” (YB, Interview)

Since it had been raised in previous interviews, the costs of a MOOC endeavour were linked to the government and universities collaborating, such a partnership was mentioned. YB stated that the government could be interested in working with universities for the betterment of the Mauritian society.

When discussing potential barriers to MOOC adoption in Mauritius, YB reiterated concerns about infrastructure and Internet access but also highlighted a number of other organisational and educational concerns:

“ Well internet access probably. And convincing the university that it is worthwhile. We need revenue models. We also need to have appropriate accreditation and progression to new courses ... This would also help in the completion rates. Other things would include authenticating the identity of the student. This would be needed when a payment is being asked for a progression course.” (YB, Interview)

From what YB said, much of the information required would depend on what possible stakeholders would want to know, given that MOOCs are emergent and (echoing M’s

observations) decision makers might lack key information. YB suggested that any decision to pursue a strategy to introduce MOOCs would need to involve market research and multiple stakeholders such as the students, teachers, parents, public (if public money was to be invested) and the Government. There would also need to be a full consideration of legal issues.

There would also need to be evaluation of the effectiveness of MOOCs compared to face to face courses. Also the influence from competitors would have to be considered and feedback obtained from student surveys would be taken into account. DH further added that any committee would need to analyse whether and how the MOOC endeavour would be integrated into the university's culture of innovation and continuous improvement and what evidence based research had found out so far on MOOCs. Finally he discussed about the calculation of the return on investment (financial and human resource) and looking into the possible need to upgrade, and costs that this might involve.

Lastly he discussed about the calculation of the return on investment (financial and human resource) and looking into the possible need to upgrade. So we see that YB point of view was more to do with the practicalities of implementing MOOCs.

What was interesting about this interview and that with HB was the degree of caution they both expressed. There was interest in what MOOCs might have to offer the country and the institution, but there was little evidence of either interviewee being caught up in a 'hype cycle' around MOOCs. Nor were they seen solely as threats: there was a recognition that, carefully researched and introduced, they might have a role to play. This is important for this research and the COI and TAM2 models it has used. The practical issues they mentioned, and rational choices that DH and YB wished to make, took account of not only the ease of use and usefulness of the MOOC (reflected in their concerns with training, support and outcomes for learners) but also the range of contextual factors that might need to be



considered. But there was also an awareness that pedagogical issues were central to the acceptance and success of any MOOC that was introduced.

Of particular interest for the researcher was a recognition that the current research could make a significant contribution to the decision making process and to any subsequent implementation strategy. There was interest from the interviewees in what the analysis of presence indicators might add to their deliberations. However, what was beginning to emerge was a sense that even amongst this small number of key stakeholders, there were many points in common, but there were also different concerns and priorities. Any contribution that the current research might make to a joint strategy had to be able to either address these, or to at least enable and inform the decision making.

#### **6.2.4 Interview with a HB, Director of a Higher Education Institution**

HB is Director of an institution that delivers courses to adults who have been out of education for a long time and are returning to it to be able to improve their lives. So they have learners who are working and are doing higher level courses (Levels 3, 4 and 5) and those who are unemployed and come to develop skills such as customer service, and health and social care. Since HB is often involved in decision making processes regarding education nationally, her views were important, particularly as the student groups served by the Institution had been highlighted by other interviewees as potentially significant MOOC users.

HB said that she had indeed heard about MOOCs and rightly described them as being free online courses where many students can be enrolled. However, she said that MOOCs were not well known in Mauritius, although she mentioned M as someone with experience in using them even though M used a MOOC from an existing platform to complement her face to face sessions. The information that HB said that she would need to seek with regards to MOOCs was similar to what DH, the government official, and YB, the Vice-Chancellor, mentioned.

An evaluation of what is happening in other developing countries was mentioned by HB as well. HB discussed about how she would use the internet to find such information specifying that the information that she would try to seek would be information about the use of MOOCs in similar African countries. She further added that how MOOCs would have been received in any other African country might be similar to how they would be received in Mauritius:

“I would look for research, especially in developing countries, if possible African countries ... because I want to compare like to like. What would have happened in an African country is likely to happen here as well.” (HB, Interview)

The interest that HB showed for MOOCs in Mauritius was very encouraging for the researcher. Even more encouraging was the fact that HB was talking about how MOOCs could make higher education accessible to more people who wanted to better themselves.

“The future of online learning. Hmm. It is quite steady, I would say. It has a certain market that it targets, people who either cannot afford the time or money to go to universities.

In terms of concerns, I would say that mainly it would be about the accessibility of learning in Mauritius. Not everyone can access higher education despite good HSC (A'level) results, you know. That seems to be a waste to me.” (HB, Interview)

Researcher: “How do think MOOCs can help?”

HB: “you say that it is free. Then these people can access such learning. Maybe to get better employment or to get lower cost courses. I imagine that the universities do have like a progressive thing where the learners would have to pay for a certificate or any further course?” (HB, Interview)

The idea that MOOCs might fulfil a particular niche (suggested by YB) and this response from HB suggested that smaller higher education institutions, particularly those catering for

atypical learners might also be important possible stakeholders to be considered in the development of any strategy for MOOC development at national level.

HB suggested that MOOCs could be a solution for the problem of how expensive commercial e-learning courses generally are. She described e-learning as being “steady” in the sense that there is a potential market for such courses. But at the same time she stated that people who were short of time and money, but wanted to study would find e-learning interesting and useful to advance their academic achievements and hence their careers. However, they might not be able to access online courses because these courses might still be expensive for them. These people might be able to access the learning that they wanted through MOOCs. Then they would be able to enrol on cheaper courses and achieve the academic goals to which they aspired. She was concerned about the possible progression routes for students enrolled on MOOCs if they wanted to progress beyond short courses, and then added that if the learners wanted to evidence their achievement then they could pay a fee to have a certificate. She also suggested that getting paid for issuing certificates would be one of the ways how universities could fund the MOOCs:

“[If] It is free ...Then these people can access such learning. Maybe to get better employment or to get lower cost courses. I imagine that the universities do have like a progressive thing where the learners would have to pay for a certificate or any further course”. (HB, Interview)

When the interview turned to potential barriers and gaps in knowledge, HB, like the other interviewees, mentioned cost. Indeed HB identified the cost and the lack of ease with which Mauritian learners would be able to use the MOOCs as being potential hindrances. She mentioned how an institution would need to think about the costs of such an implementation and the know-how that would be required. Also she said that as Mauritians do not know much about MOOCs, their potential benefits would need to be made known to institutions and the learners. Again, the “perceived usefulness” of MOOCs was something that, this

suggested, could not be left to chance but rather had to be carefully argued and presented: to government officials, institutional leaders, teachers and learners.

HB said that if MOOCs were becoming popular, the institutions should indeed be adopting them: a less cautious approach than that suggested by YB and DH. However, for an institution such as hers, HB said that setting up and running a MOOC might not be possible. She suggested though, that using existing content providers, combined with a local expert to help the students and the kind of blended model already tried out by M, might be possible.

Another point of interest was that although HB spoke about good bandwidth strength in Mauritius itself, the success of MOOC was said to be dependent on “the ability of the potential students to navigate round the online course” (Interview, HB). This echoes what M (the distance learning official who was interviewed) said about low IT skills of users being a potential barrier.

As in the interview with YB, HB mentioned that her advisory board would want to know about the costs and the benefits of the implementation of MOOCs because they would want to know whether it would be profitable. The sources of information again included research projects such as this one. HB also stated that advisors, experts and research including the current research would help them make a decision.

### 6.2.5 Emerging Themes from Interviews

From the interviews, there are broad and specific factors that can be drawn. The broad ones are general context, the others are specific to PU and PEU.

#### Broad Contextual Factors

- Levels of awareness of educational professionals and decision-makers
- Network reliability and bandwidth, especially in Rodrigues
- Costs of setup, infrastructure and training
- Costs of running MOOCs longer-term
- Integration with other systems
- Integration into existing organisation culture
- Legal implications

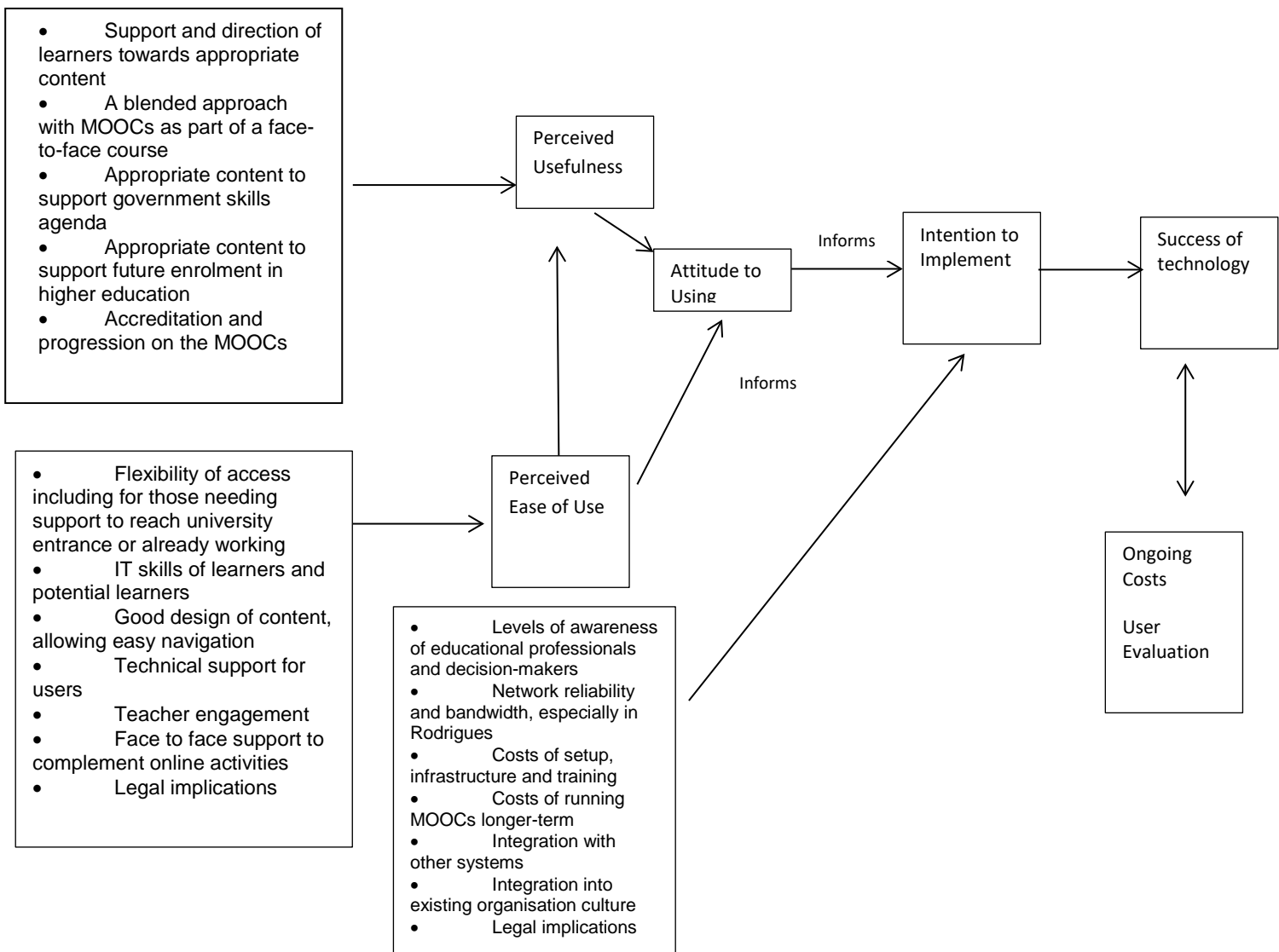
#### Factors contributing to Perceived Ease of Use of MOOCs

- Flexibility of access including for those needing support to reach university entrance or already working
- IT skills of learners and potential learners
- Good design of content, allowing easy navigation
- Technical support for users
- Teacher engagement
- Face to face support to complement online activities
- Legal implications

## Factors contributing to Perceived Usefulness of MOOCs

- Support and direction of learners towards appropriate content
- A blended approach with MOOCs as part of a face-to-face course
- Appropriate content to support government skills agenda
- Appropriate content to support future enrolment in higher education
- Accreditation and progression on the MOOCs

From the above the version of TAM2 created would be as follows:



**Figure 6.1: TAM2 model from interviews**

The factors that are included in the model above are based on what the educational leaders and policymaker discussed. There are “Factors that contribute to Perceived Ease of Use” and “Factors that contribute to Perceived Usefulness”. We also have the “Broad Contextual Factors” that directly informs “the Intention to Implement”.

Few of the factors require further explanation because they have either been combined under one factor or because they appear under two sets of factors. Firstly, the factor named “levels of awareness of educational professionals and decision makers” also includes the point made by DH (the policy maker at the Ministry of Education) and HB (the director of a Higher Education institution) regarding what they need to know about what other similar countries are doing with regards to the technology in question. Secondly, DH and M (the official from a distance learning institution) mentioned the time required to set up the courses. This factor is, indeed, implied under the factor “costs of setup, infrastructure and training”. We also have “legal implications” mentioned under “Factors contributing to Perceived Ease of Use of MOOCs” and “Broad Contextual Factors”. Legal implications influence the perceived ease of use because they can create barriers for use. At the same time, the implementers will also have to think about the legal implications at the different stages of the implementation process. Therefore this factor is also relevant under “Broad Contextual Factors” that informs the “Intention to Implement” and has to be explored at the start of the implementation process to elaborate the model.

### 6.2.6 Reflections on Interviews

What were emerging from the interviews were different possible scenarios for using MOOCs in Mauritius. A completely independent Mauritian MOOC might not be feasible, or even desirable, according to the four interviewees. But using existing MOOC, tailoring them to suit Mauritian learners, mediating their content, or offering them as part of blended learning might be some of the possible scenarios. The interviewees suggested MOOCs might play a role in:

- Self-directed learners interested in HE, improving employability or as part of life-long learning interests (M)
- Blended learning courses within HE, where teachers direct students to online MOOC content relevant to their courses (M)
- Short, free courses for graduates concerned with employability skills (DH)
- Online, free pre-HE courses, precursors to full paid courses (HB, YB)

These will be discussed further in Chapter 8.

The other pattern emerging from the data presented here is that the educational leaders and decision makers wanted to be able to make rational, well-informed decisions about whether to implement MOOCs, on what courses, and for what users. This can be accounted for using the conceptual framework of the TAM2 model, with the idea of different presence indicators of the COI model helping to describe student preferences and pedagogical strategies that make MOOCs easy to use. But in the course of these interviews, it became apparent that, rather than simply being an analytical process, the development of a model might be a way of helping the different stakeholders and decision-makers frame their discussions and find a common ground. I develop more on this point when explaining the development of my proposed model and strategy in chapters 7 and 8.



A summary of the outcomes of the interviews with policymaker and educational leaders are shown below:

<b>Contextual factors: top</b>	<b>Interview Excerpts</b>
Support and direction of learners towards appropriate content	M: ... More guidance from the teachers would help. To tell you what they expect from the assignments.
A blended approach with MOOCs as part of a face to face course	M: the fact we have the blended mode so that they can come and meet other people, people meaning their facilitators and their peers. I think that's the rich part of the blended mode and it was what really helped when I looked at the MOOC participants, they were so happy for example even to share for example we had face to face session not only about experts coming to share but also about others coming to share what they did in class, just one aspect of a topic and it was such a big success, it was like everybody felt they belonged I think, like we all felt like we owned it. They were so much comfortable. It was not like we just came as participants as passive participants just waiting for people to tell them things and give them things. And sometimes one face to face sessions I would have like 10 who have volunteered. Because I would have 2 sessions per day, so I would have 5 in the morning and 5 in the afternoon to share whatever they wanted to share with their peers. I was surprised how people who were quiet online volunteered to talk! So it was really something which works.
Appropriate content to support government skills agenda	DH: You say that it is free. Of course then it means that more people can benefit from it. Now the question is what does the country need at the moment. More literacy? Some courses that will increase their employability? Maybe accountancy courses, maybe accountancy softwares, what else. Let me see, other functional skills, anything on farming, what about transferable skills, soft skills, bookkeeping, there would be more. But why would the government do that and how? The government would need to do it with another institution, maybe. Oh yes also, to address public health issues.
	The researcher: so in summary what would drive such an endeavour. DH: I would say the public benefit. See in Mauritius now, there is a lack of trained people. People come out of universities with degrees but no training. Employers are complaining that degree holders do not know how to do basic office stuff. So education has been very academic. Plus, other people who do not work

	<p>because of lack of basic skills, they can increase their employability.</p>
<p>Appropriate content to support future enrolment in higher education</p>	<p>M: you know you have to look at this issue from several perspectives, like the first one would be at policy level, at government level, what does, for example, the state would like for the people. Let us say that the policy would be to empower the Mauritians and to create this learning society ....</p> <p>The Researcher: But then would that not reduce your profits?  YB: Yes definitely in the short run. But it seems worthwhile to see if we use MOOCs and more students can have an initial access to our courses then more students would enrol. In the long run it may be more profitable. But we cannot just decide like this while talking. A cost-benefit analysis would have to be done. If your project helps in terms of the pedagogy that would suit Mauritians, then it may reduce the cost of "finding out" what is best for us.</p> <p>HB: In terms of concerns, I would say that mainly it would be about the accessibility of learning in Mauritius. Not everyone can access higher education despite good HSC (A'level) results, you know. That seems to be a waste to me.  The Researcher: How do think MOOCs can help?  HB: you say that it is free. Then these people can access such learning. Maybe to get better employment or to get lower cost courses. I imagine that the universities do have like a progressive thing where the learners would have to pay for a certificate or any further course?  SR: yes mam, some universities have.  HB: this is possibly how funding is obtained I guess.</p>
<p>Accreditation and progression on the MOOCs</p>	<p>The Researcher: What do you think are the potential barriers?  YB: ...We also need to have appropriate accreditation and progression to new courses. This would also help in the completion rates.</p>
<p><b>Contextual factors: bottom</b>  Flexibility of access including for those needing support to reach university entrance or are already working</p>	<p><b>Interview Excerpts</b>  M: ... it is an avenue which opens up opportunities for people who want to learn not necessarily at first degree for example but those who are in a lifelong learning process. And i think that it is the best thing which has</p>

	<p>happened to education. People can continue to study if they want to and not give up on their dreams. If I take my own example I remember when I was at uni: well online learning is a good idea in the sense that it gives the student the opportunity to learn without going physically to the institution, it saves time and energy and then money also.</p>
IT skills of current and potential learners	<p>The researcher: if we were to introduce MOOCs, well you did already, what do you think would enable it? And what do you think would create barriers for it to succeed.</p> <p>M: from my experience with this blended MOOC, first in terms of difficulties it was for those learners who never been on an online course before and some of them who were not even really familiar with anything that has to do with the internet. Like some very few but some did not even have an email address. Yea so just to give you an idea of the spectrum of the profiles of learners that you may be facing like those who were not accustomed at all with what they had to do with online learning and online communication and internet. And then you have on the other end those who are already IT people, IT familiar. So I believe that MOOCs are useful for those who are already IT familiar but for those who are at the other end of the spectrum.</p>
Good design of content, allowing easy navigation	<p>The Researcher: what can be the barriers mam?</p> <p>HB: barriers? For me the cost and yes the ability of the potential students to navigate round the online course.</p>
Availability of technical support	<p>FD (teacher): well to start with it was easy to access. For myself it was the first time. I had to go online and register you know to help my students.</p> <p>The resources are very good and advanced. The discussions were easy to use for me. <b>My students were asking me questions when they were stuck.</b></p>
Teacher attitudes and confidence	<p>FD attitude towards supporting the students and confidence in using the tools made a difference to the Management students who participated more.</p> <p><b>FD (teacher): well to start with it was easy to access. For myself it was the first time. I had to go online and register you know to help my students.</b></p> <p><b>The resources are very good and advanced. The discussions were easy to use for me.</b> My students were asking me questions when they were stuck.</p> <p><u>Student 15:</u></p>

	<p>The Researcher: How was your teacher “seen” on an online course?.....Was it only through interactions?</p> <p>Student 15: I could see him not literally. But from his work. I mean what he did. He would be the one to upload what we need. Li pou faire li non? Ki sane la. Li pou aer nou lor activités.He had put slides and articles online and followed us through the activities.</p>
Face to face support to complement online	<p>M: the fact we have the blended mode so that they can come and meet other people, people meaning their facilitators and their peers. I think that’s the rich part of the blended mode and it was what really helped when I looked at the MOOC participants, they were so happy for example even to share for example we had face to face session not only about experts coming to share but also about others coming to share what they did in class, just one aspect of a topic and it was such a big success, it was like everybody felt they belonged I think, like we all felt like we owned it. They were so much comfortable. It was not like we just came as participants as passive participants just waiting for people to tell them things and give them things. And sometimes one face to face sessions I would have like 10 who have volunteered. Because I would have 2 sessions per day, so I would have 5 in the morning and 5 in the afternoon to share whatever they wanted to share with their peers. I was surprised how people who were quiet online volunteered to talk! So it was really something which works.</p>
Legal implications	<p>DH: ... Any legal implication would have to be seen as well intellectual property and copyrights and such things.</p>
<b>Contextual factors relating to implementation</b>	<b>Interview Excerpts</b>
Levels of awareness of educational professionals and decision makers	<p>The Researcher: Good morning Sir. Thank you for having me. I just want to start with the key of my interview: MOOC. Have you heard about MOOCs?</p> <p>DH: No. I have not. But from our last conversation, it seems to be some kind of online learning?</p>
	<p>The Researcher: Yes indeed Sir. So what do you think is the current situation of MOOCs in Mauritius?</p> <p>YB: People mostly do not know anything about them. Yes they know about online learning and open university courses. But MOOC per say is not known.</p>
	<p>YB:... . But it seems worthwhile to see if we use MOOCs and more students can have an initial access to our courses then more students would enrol. In the long run it may be more profitable. But we cannot just decide like this</p>

	<p>while talking. <b>A cost-benefit analysis would have to be done. If your project helps in terms of the pedagogy that would suit Mauritians</b>, then it may reduce the cost of “finding out” what is best for us.</p> <p>The Researcher: what are their sources of information? YB: I said: reports, research both primary and secondary. Your research is on MOOC pedagogy?</p> <p>The Researcher: Yes mam as many as you want. What do you think is the current situation of MOOCs in Mauritius? HB: I do not think people know about it. A teacher at Open University did a course, a blended course, I think 2 years ago?</p> <p>SR: then what is the situation of MOOCs in Mauritius at the moment</p> <p>M: right now I am not really sure I cannot really say because my experience with MOOC introduction to Mauritius was in oct dec 2013 but as I have told you like for example this person who has jumped into the bandwagon of MOOC is continuing now and all those who following that MOOC when I kind of started speaking about it in mauritius. So all of them are continuing on their own now.</p> <p>M: from what I have seen like euh like 95% of the persons that I spoke to and who came in the blended mooc, <b>95 or more than that, hadn't ever heard of that</b>. So there is still a little group of these 5 or so % who have heard but they did not talk about it in an official way,</p> <p>The Researcher: people responsible about education in Mauritius know nothing about it?</p> <p>M: I cannot say. But but there was <b>not any MOOC being introduced in a formal way</b> in a formal set up because all those who came or those who applied they have not most of them as I have said haven't heard about it.</p>
Network reliability and bandwidth, especially in Rodrigues	<p>The researcher: what do you think can be the barriers? DH: internet access can be one. Yes Mauritius is much better now in terms of internet access.</p>

	<p>The researcher: how is the wifi in Mauritius?</p> <p>M: here it was most of the time okay. But you know I had a third group in Rodrigues. This was an issue, the internet was an issue because like for example our first face to face session, I had a group in a physical set up and the group from Rodrigues was listening live, from video conferencing and the internet broke down, first here but it was back to normal very quickly then it broke there. So they lost it, you see. So what I had to do was like record, video tape our face to face so that they could catch at least something but it was an issue for Rodrigues it was an issue like at least twice. Like another time the participants came and they never got to listen to anything because the internet just broke down.</p> <p>The Researcher: What do you think are the potential barriers?</p> <p>YB: the potential barriers? Well internet access probably.</p> <p>The Researcher: yes mam. Then what information would the decision makers need?</p> <p>HB: the cost and benefit to each of them. Simple decision making concept Shaivi. Who will be the decision makers? In my institution it will be myself and by advisory board. They will need to know if this is something which is worthwhile to put in our current profile. We need to know how computers are used in Mauritius maybe by age? The speed of internet by region?</p>
<p>Costs of setup infrastructure and training</p>	<p>DH: ... Shaivi if you were to do something like that we need to see the cost, and if we are able to bear it. If we are forming the courses, then it will cost us more than if we just use the ones on the platforms that you told me last time.</p> <p>M:... We need to think about what it will cost. We need to see the cost of creating and maintaining the course. Also the teachers that would be needed.</p> <p>The Reseacher: yes Sir. Then what would be the costs?</p> <p>YB: see we have the different costs of creating, maintaining the courses. Then the usual costs of developing a course: materials, human resource. Then you say that you are developing a pedagogy Shaivi? We have to see the role of the teacher on MOOCs and how much it will cost. How would you fund this project?</p> <p>The Researcher: what would be the costs, you think?</p> <p>HB: it depends how you are introducing. See if you take the existing moocs, you need to see how they fit in the curricula. Then this will cost us in terms of the experts. We may need facilitators who are local. If we create then there</p>

	are usual costs such as legal and admin and human resource.
Costs of running MOOCs longer term	The researcher: what kind of costs? DH: legal fees, cost of researching, admin costs, cost of having teachers
	DH: well they will need to know 2 basic stuff: the cost and benefit, public benefit, long term sustainability, whether they can quantify the value gained. The tools that are needed, man power, how much time and money is it going to need to be maintained.
	M: Then you have to look at it from the perspective of a tertiary institution when you have to pay the salary of people you have to run the institution.
	The Researcher: what kind of information will be needed? ... M: ..., the cost (no hidden cost),
	M: ... We need to think about what it will cost. We need to see the cost of creating and maintaining the course. Also the teachers that would be needed.
	The Researcher: yes Sir. Then what would be the costs? YB: see we have the different costs of creating, maintaining the courses. Then the usual costs of developing a course: materials, human resource. Then you say that you are developing a pedagogy Shaivi? We have to see the role of the teacher on MOOCs and how much it will cost. How would you fund this project?
Integration with other systems	The Researcher: what kind of information will be needed? M: it is only about providing us with the access. Yea the universities will not have <b>all databases but they can be the intermediary to provide databases to the students</b> . This will motivate the learners and universities.  M: <b>types of facilities the uni is offering</b>
	The Researcher: what would be the costs, you think? HB: it depends how you are introducing. See if you take the existing moocs, you need to see how they fit in the curricula.
Integration into existing organisational culture	The Researcher: What information would the decision makers need? DH:... They will want to know who will be affected

	<p>The Researcher: do you think that your institution would want to do its own MOOC</p> <p>M: yea we started thinking about it last it last year. Well I know that the director wants to but of course you need time, you need you know you need to have time for that but I do not know what is on his mind but I know that the mentioned that he would like the institution to go into MOOCs.</p> <p>M: But also maybe because before December like all the tertiary institutions were under <b>ministry tertiary education and secondary, primary and pre primary were under the ministry of education and human resources you see so it was like 2 separate ministries. We have only one ministry of education now.</b></p> <p>The Researcher: What information would the decision makers need? YB: <b>well the committee would consider the stakeholders such as the students, teachers, parents, public</b> (if public money is to be invested), the government</p> <p>The Researcher: what do you think are the potential barriers? HB: Barriers? For an institution like mine, it will be the cost and the know how. We would need an expert who will be local. Also, the benefits to such a project would have to be clear for the students and the institution. <b>I am not sure if we would create a course here in our institution. But we can deliver some of the courses online already.</b> Maybe we can use these courses and provide an upgrade face to face one?</p>
Legal implications	DH: ... Any legal implication would have to be seen as well intellectual property and copyrights and such things.
<b>Other factors in model</b>	<b>Interview Excerpts</b>
Monitoring of ongoing costs	<p>The Researcher: What information would the decision makers need? DH:...how much time and money is it going to need to be maintained</p> <p>The Researcher: what would be the costs, you think? HB: it depends how you are introducing. See if you take the existing moocs, you need to see how they fit in the curricula. Then this will cost us in terms of the experts. We may need facilitators who are local. <b>If we create then there are usual costs such as legal and admin and human resource.</b></p>
Evaluation by users	YB: well the committee would consider the stakeholders such as the students, teachers, parents, public (if public money is to be invested), the government, legal issues.



	Therefore, the information that the committee would need market research data, effectiveness compared to face to face, influence from competitors, <b>feedback obtained from student surveys</b> , is it part of innovation and continuous improvement, ease of use, the tools required, the pedagogy needed and evidence based research, return on investment (financial and human resource), the need to upgrade.
Evaluation by providers	YB: well the committee would consider the stakeholders such as the students, teachers, parents, public (if public money is to be invested), the government, legal issues. Therefore, the information that the committee would need <b>market research data, effectiveness compared to face to face, influence from competitors</b> , feedback obtained from student surveys, <b>is it part of innovation and continuous improvement, ease of use, the tools required, the pedagogy needed and evidence based research, return on investment (financial and human resource), the need to upgrade.</b>

**Table 6.1: Interview Excerpts (Policy Maker and Educational Leaders)**

### 6.3 Evaluative Questionnaires with teachers

The final data collected gave a voice to the group so far involved as participants and co-researchers: the three teachers of the courses in which the MOOCs had been implemented.

#### 6.3.1 MOOC-Ability – Can Units be Delivered via MOOC?

The first focus of the questionnaires was to evaluate whether the teachers felt that MOOCs could be used to deliver the courses in which they were involved. Rather than simply obtain yes/no or scored answers, the COI concepts of Teaching Presence, Social Presence and Cognitive Presence were used to gain an insight into the ways in which the MOOCs might capture or represent the existing course content and the pedagogical practice that accompanied it. Teachers were asked to score not only the specific units where the MOOCs had been implemented, but other units within the degree course.

The teachers also had to apportion 10 points to the different units of the qualification to determine how much of the unit out of 10 would they say required TP, SP or CP. So a unit which was entirely dependent on teaching presence would score 10, 0 and 0; one which was

entirely self-study and concerned with acquisition of information would score 0, 0, 10; and a unit where some of the learning outcomes were concerned with learning in a group so that social presence was necessary might score 3,4,3.

Course Degree	Units	Can be MOOC? (Yes /No/Partly)	TP	SP	CP
Management	Organisation and Management	Y	5	2	3
	Organisational Behaviour	Y	5	2	3
	Accounting and Financial Analysis	P	6	1	3
	Economics for Managers	Y	4.5	1.5	4
	Foundations of Mauritian Law Marketing Fundamentals	Y	6	2	2
	Managerial Communications	Y	6	2	2
	Statistics I	Y	7	2	1
	Introduction to Information Technology	N	6	4	0
	Basic Computer Applications	N	7	3	0

	Marketing Management	Y	6	3	1
	Human Resource Management	Y	6	3	1
	Operations Management	Y	7	2	1
	Research Methodology in Management	P	8	1	1
	Strategic Management	P	6	2	2
	International Business and Management	Y	4	3	3
	Managing Quality	Y	6	3	1
	Practical Training Dissertation	N	4	1	0
	ELECTIVE MODULES				
	Organisation Development and HRD	P	2	2	6
	Business Ethics and Good Governance	Y	3	1	6
	Managing the Employment Relationship	Y	6	2	2
	Marketing Communications	P	7	2	1
	Buyer Behaviour	P	7	2	1
	Destination Management Sustainable Tourism	P	6	2	2
	Operations Research	P	6.5	1.5	2
	Service Quality Management in Tourism and Leisure	P	3	2	5
	Strategic Marketing Management	P	3	2	5
	e-HR and Knowledge Management	P	4	2	4
	Managerial Economics	Y	3	2	5
	<b>Tourism</b> Introduction to Information Technology	Y	7	2	1

	Accounting for Tourism & Hospitality	P	8	1	1
	Economics for Tourism & Hospitality Managers	Y	4	2	4
	Tourism, Leisure & Recreational Law	Y	4	1	5
	Principles of Tourism Management	Y	3.5	1.5	5
	Organisation and Management	Y	7	2	1
	Statistics for Tourism and Hospitality	P	8	1	1
	Marketing For Tourism & Hospitality	Y	3.5	1.5	5
	Human Resource Management for the Service Sector	Y	5	1	4
	Sports and Recreation Management	Y	4	2	4
	Operations of Services Cultural and Heritage Tourism	Y	5	1	4
	Financial Management in Tourism & Hospitality	P	8	1	1
	German for Tourism and Hospitality	Y	4	2	4
	Italian for Tourism and Hospitality	Y	4	3	3
	Sustainable Tourism	Y	2	2	6
	Service Quality Management in Tourism, Leisure & Recreation	Y	2	2	6
	Events Management	P	6	3	1
	Research Methods for Tourism and Leisure	P	2	2	6

	IT Applications in Tourism & Hospitality Sectors	P	8	1	1
	Tourism Planning	P	7	2	1
	Transport & Travel Management	Y	6	1	3
	Strategic Management for Tourism, Leisure & Recreation International Tourism	P	4	1	5
	Dissertation	N	8	2	0
	Practicum	N	6	4	0
	ELECTIVE MODULES				
	Outdoor Recreation & Leisure Programming	N	5	2	3
	Destination Management	N	5	1	4
	Resort Management & Wellness Tourism	N	4	1	4
<b>Education</b>	EDUCATION & CURRICULUM STUDIES CORE				
	Pedagogy	Y	1	2	7
	Curriculum Studies, Assessment & Evaluation	Y	7	2	1
	Research Methodology	Y	4	2	4
	Teaching the Adolescent: Psychological Perspective	Y	6	1	3
	OTHER CORE MODULES				
	ICT in Teaching	P	6	2	2
	Communication and Language Skills	P	7	1	2
	Teacher Leadership	Y	7	2	1

**Table 6.2: Extent to which courses can be converted into MOOCs**

From the table, it can be seen that the teachers thought that theoretical topics can be easily converted into MOOCs whereas units which included practical aspects can either partly be converted into MOOCs or not at all. It is clear that the theoretical units can have a weekly schedule for the completion of each part of each unit. However, the doubt that the teachers seemed to have about converting practical parts of units needs to be discussed further.

The main practical units that the teachers did not think could be converted into MOOCs are computer related and practice related topics. Firstly with regards to the computer related topics, the first MOOCs were IT related. Therefore, IT courses should be easier to convert into MOOCs. Secondly, the practical courses such as the dissertation and practicum in Tourism, could also be carried out using online tools such as blogs. In that, it is important to look into why the teachers do not think that these courses can be converted into MOOCs. The reason offered by the data analysed is the high level of teaching presence required by the students.

The results presented above confirmed the views of the Mauritian students in terms of the teaching presence that they needed; teachers also felt that many courses simply could not be delivered by MOOC because of the need for teaching presence and 'teacher present' in order to mediate and validate learning.

### **6.3.2 Additional Teacher Evaluations**

In the course of the MOOC interventions and then at the end of these, discussions with the teachers about their experiences on MOOCs, I transcribed the discussions which were recorded in writing. I then tried to build their responses in categories. Because of the high level of openness in the questions asked, it was difficult to find the categories under which I could classify the responses of the teachers.

Nonetheless, I identified the following categories: how the experience was in general, how useful the MOOC (PU) was, the difficulties that the teachers and their students encountered (PEU), and what they thought about the future of MOOCs in Mauritius.

The teachers recognised the usefulness of MOOCs and also discussed the MOOCs' learning outcomes. As seen from the below, one reason for the usefulness of MOOCs in general was said to be because they were free.

Researcher: "Was the MOOC useful?"

Teacher: "definitely! It is free! We could use some courses." (JT, Discussion)

Additionally, one of the teachers said that the learners got a chance to learn from each other and from others on the MOOCs. However, the teacher said that the students "were not talking to others" and "kept reverting back to him" (JT, Discussion) (although there was little evidence of this from student data). A concern expressed by one teacher was that if they are not the ones to create the MOOCs, then they would have "no control over when they are being delivered and the learning outcomes" (JT, Discussion). However the teacher then added that since Mauritius follows the British Educational System, the learning outcomes may not be that different as it was seen for the MOOCs experienced.

The teachers were generally positive about their experiences on the MOOCs. They stated that the tools were easy to use and that the resources were at an appropriate level and of good quality.

"The resources are very good and advanced. The discussions were easy to use for me."  
(FD, Discussion).

They also mentioned that as the MOOCs were sequential, the students could then follow them easily. An interesting point that emerged was that while the teachers would say how good the MOOCs were, they would also state that they, as teachers, were needed by their students online.

"Well they [the students] need to know if they are doing well, isn't it? They needed my help."  
(GK, Discussion).

While the sequencing of the activities, the tools and resources were useful, the need for the facilitator on the MOOCs remained: as argued strongly by the students. This need for teacher presence is further seen in the teachers' discussions about the difficulties that they encountered.

The teachers said that the difficulties that they faced included the Mauritian learners “not talking to others” (JT, Discussion), too much dependency on them as teachers, and the teachers having “to be the expert[s]” (FD, Discussion). Firstly the teachers mentioned that this was the chance for the Mauritian learners to learn with other international students and they did not do so. They also said how so much dependency on the teachers was difficult to handle due to their other workload. It is important to note that the teachers did recognise that the Mauritian learners could not change into independent learners quickly and that they might have to facilitate such a process. As one of the teachers said, “... the students kept talking among themselves and did not branch out too much. Next time I will try to encourage them to do so. I don't think that they will change overnight!” (GK, Discussion).

The teachers spoke about the possible future of MOOCs in Mauritius in terms of replacing some sessions, Mauritian MOOCs and the implications. One teacher said how if MOOCs were used to replace some sessions it would help the students and the institution. Another teacher expressed his view about a Mauritian MOOC and added that it was important to look at the implications of any MOOC projects in terms of costs and benefits involved.

“I think that they might. But it depends on the cost okay. The way that you did was fine as that did not cost anything. If we were to do a MOOC, it will cost right? Then VC will want to know the benefits.” (FD, Discussion).

## **6.4 Conclusion**

Chapters 5 and 6 establish the basis for the construction of a pedagogically informed model for MOOCs in Mauritius, as well as indicating how a strategy for their implementation might be developed.



There are points of agreement between the groups of participants whose views have been presented and analysed in these chapters. In chapter 5, it was seen that the Mauritian learners expected and valued a high level of teaching presence, beyond the notion of teaching presence expressed in the COI model: representations of teachers (through videos, course materials and other online content) was not a substitute for teachers being actively involved in the mediation and validation of learning activities.

Interestingly, at stage 1 of the research, there was a high level of enthusiasm both for the adoption of new learning technologies, and for teaching presence elements. At that time, the reasons for such responses were not clear. However, the data analysed in chapter 5 echoed and offered explanations for the level of importance given by the Mauritian learners to teacher presence. It also demonstrated the value of interviewing students with experience of using the technologies in question, rather than simply taking their enthusiasm for technology in general as an indicator that these would be successful.

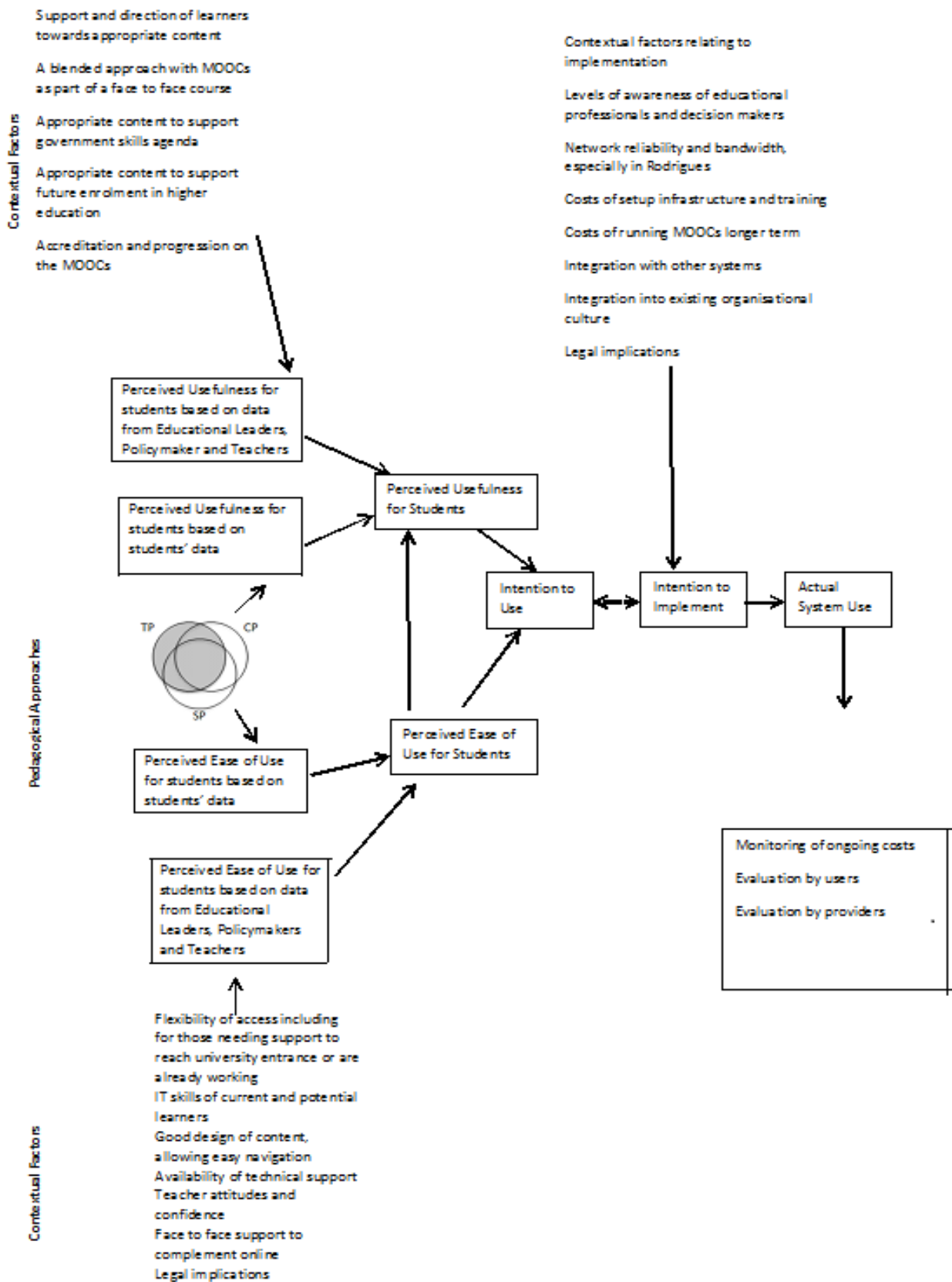
Similarly, the educational leaders also emphasised on the need for teacher mediation via local facilitators (HB) and blended approaches (M).

Another important point of agreement noted was the kinds of courses that the respondents mentioned as being possible MOOCs. Indeed the Mauritian learners discussed how they would want courses that would increase their earning potential or help them to become more employable. Likewise, the educational leaders and policymaker mentioned courses that would enhance the employability skills of Mauritians and increase their access to higher education, as being possible MOOCs.

Chapter 5 explored the technology acceptance elements that would form part of my model, framed mainly by COI and is about what the students need on a MOOC. But it is clear from the data presented in Chapter 6, that there are other stakeholders involved in a MOOC implementation who want to know how the process of implementation can be effective.

What this suggests is that an effective model can act as a focus for discussions between stakeholders. A model based on COI alone might help teachers and instructional designers, but would not be sufficient because there are other aspects identified by the other stakeholders which need to be considered for MOOCs to be successful in Mauritius. At the same time, just concentrating on introducing MOOCs as an educational innovation without considering the pedagogical aspects would risk their not being accepted by teachers and students, reducing the effectiveness of the MOOCs in Mauritius and consequently their chance of succeeding.

The next two chapters present a composite model drawing on both COI and TAM2 model followed by a strategy that draws both on the data discussed in these chapters, and the new model. The resulting composite model drawing on both COI and TAM2 model is as follows:



**Figure 6.2: Composite model**

# Chapter 7: A Pedagogically Informed Model for MOOC

## Acceptance

### 7.1 Introduction

During phase 1 of the research, when data were collected about the opinions of the Mauritian learners about e-learning and MOOCs, the initial abstract questions had shown that students were generally very positive and enthusiastic. The later, more focussed and concrete interviews, allowed them to be much more formatively critical of the technologies involved such as the video lectures and, in particular of the reduced role of the teacher. As described in chapter 5, for most students, ‘teaching presence’ meant teacher presence, and they expressed strong preference for a teacher role in mediating social learning and validating learning outcomes.

From the previous chapters we have seen the following:

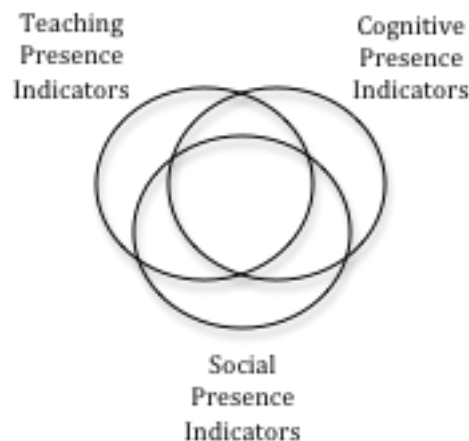
- The students’ perspectives (supported by the views of teachers and those with experience of e-learning with Mauritian students) indicated that a model of successful MOOC implementation would need to consider the pedagogical and cultural preferences of the Mauritian learners.
- The elements of the TAM2 model relating to ease of use and usefulness were also important for students and needed to be considered when developing any model of implementation.
- The teachers and educational leader interviews confirmed the students’ perspectives but more importantly they indicated ways and potential applications that MOOCs can be used in Mauritius.
- Interviews with those involved in educational leadership and policy also introduced a range of additional factors. In their view, an appropriate pedagogical model was important but it needed to be combined with additional social, cultural, organisational

and economic issues.

One of the aims of this chapter is to present a composite model that incorporates pedagogical practice and this broader range of factors. This model draws both on the empirical data collected and presented in Chapters 5 and 6, and on some of the scenarios proposed by participants. This involves a reworking of the TAM2 model introduced in Chapter 2. This model is then compared with other technology acceptance models, and the role of the model is also discussed.

## 7.2 Developing the Model

As was outlined in chapter 5 initial analysis of student data used communities of enquiries model exclusively to explore what students expected of an e-learning environment and of MOOCs in particular. This revealed that they attached high significance to teaching presence indicators which overlapped with other forms of presence and were often an essential prerequisite for their development. This was shown in Figure 5.2 in chapter 5 and is presented here again in Figure 7.1.



**Figure 7.1: Hybrid presences in the COI model**

What emerged from student interviews was that there were elements of the TAM2 model which also featured and could be incorporated into this model. For example, the notions of

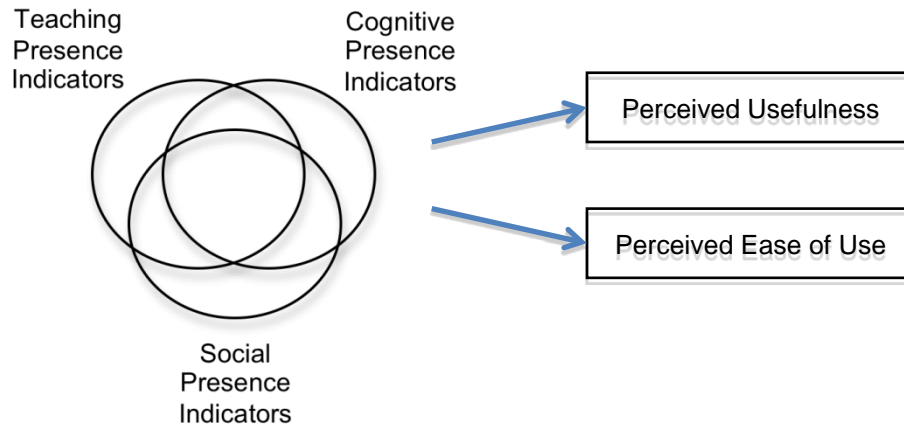
social norms affected students' willingness to participate in social learning activities online. Social presence indicators such as communicating with other learners were seen to be less useful unless teachers were present to mediate them. In the same way, the perceived usefulness of MOOC courses were discussed by some students (notably the students 31 and 61) who talked about the value of MOOCs in wider Mauritian society) but, again, most students saw the teacher as central in establishing this. Ease of use of the MOOC was also discussed not only as a technical issue but in terms of teacher support.

If the concern of this research project was simply to develop pedagogical practice using MOOCs in Mauritius, then it would have been possible to continue to use the COI model as a model, with additional insights drawn from technology acceptance models. So we could have added to the list of teaching presence indicators items such as:

- "Explain usefulness of the MOOC in life-long learning and employability"
- "Provide technical support for new users"

However, as the aims of the research are broader, and MOOCs are not as yet established in Mauritius, the role of a technology acceptance model has to be greater than simply enhancing or extending the inventory of presence indicators.

This was the reason for the development of the model shown in Figure 5.3 in chapter 5, with an appropriate combination of presence indicators contributing to the perceived ease of use and perceived usefulness of MOOCs (now shown as Figure 7.2).



**Figure 7.2: COI and TAM2 Elements**

What the interviews presented and analysed in Chapter 6 suggest is that it is necessary to go further than this, and look at the development of an appropriate pedagogical model as one of the major contributors to the overall acceptance of MOOCs in Mauritius: by students, teachers, educational organisations and government. Indeed, this was explicitly stated by participants. Also, while individuals such as Participant M, or their students might be sufficiently convinced that MOOCs have potential to address learner needs and support learning outcomes, for MOOCs to be implemented more widely, this enthusiasm of early adopters and the results of pilot studies have to be translated into the willingness to accept MOOCs on the part of educational leaders and policymakers.

The range of concerns and the level at which the educational leaders and the policy maker were thinking was much broader than that of individual teachers and students. Their notions of ease of use and usefulness were concerned not with the immediate demands faced by an individual student or teacher, but with the training needs of groups of students, the requirements for the university to implement MOOCs, and the impact that this might have on educational provision and lifelong learning opportunities across Mauritius. Any model would need to cater for the views of all those stakeholders who are involved in MOOC implementation in Mauritius.

We can present a composite model in which the COI model informs appropriate pedagogical strategies and student experience, but this is one of the contributory factors to a more wide-ranging model of technology acceptance, as shown in Figure 7.3:



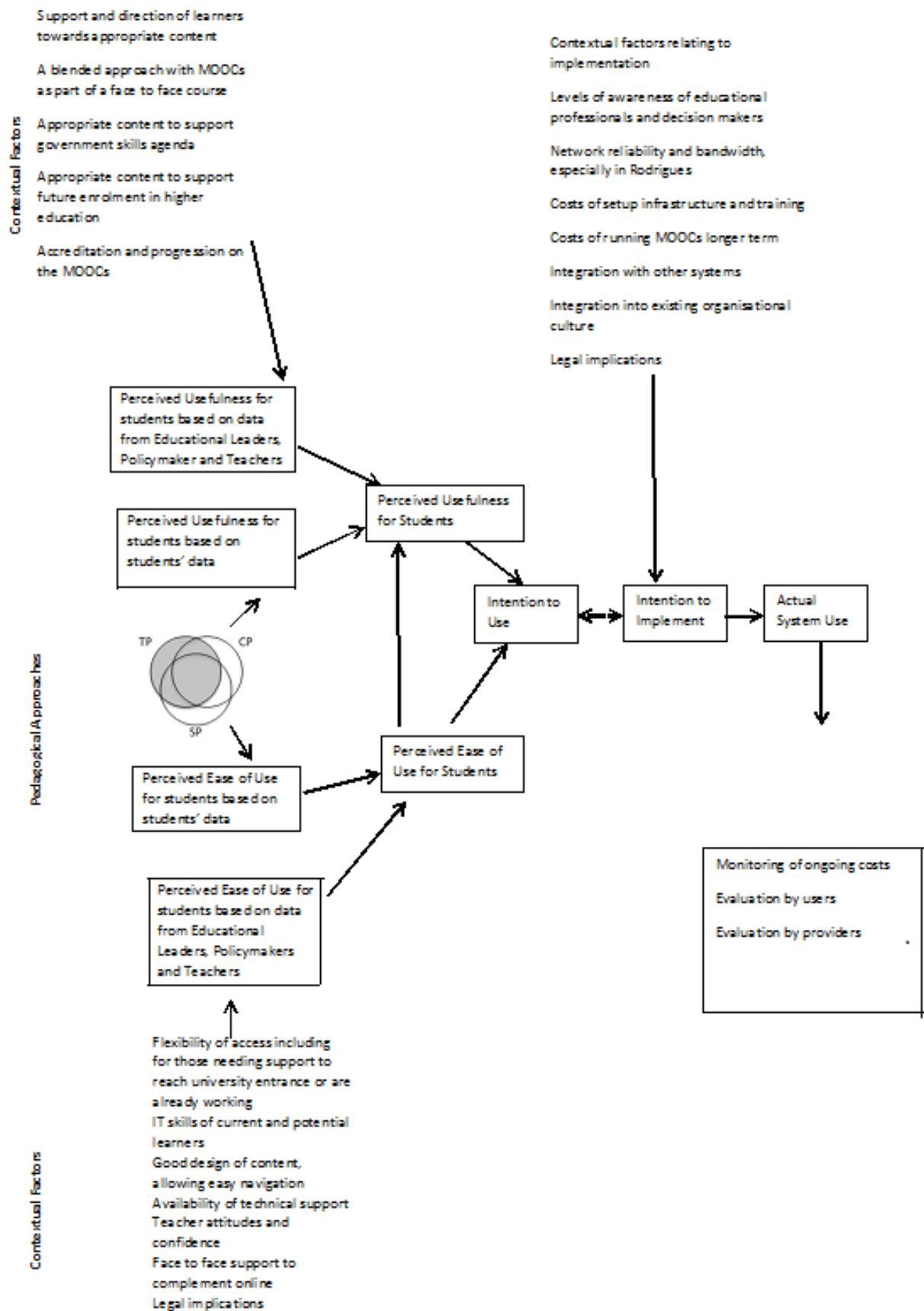


Figure 7.3: Composite TAM model with COI and Contextual Factors across

## ***Stakeholder Groups informing Acceptance of MOOCs***

### **7.3 MOOC and Model as Boundary Objects**

This model is not simply an analytical tool for the use of researchers. What the educational leader and policymaker interviews had suggested was that there needed to be a careful deliberative process involving multiple stakeholders. As many of these had different concerns, and different levels of understanding of what MOOCs might involve and might offer, the model can inform this process.

As the model does not only explain what the Mauritian learners require to accept MOOCs in terms of pedagogical activities, presence and technological acceptance indicators, but also addresses the concerns and interests of broader groups of stakeholders, the model therefore can be thought of as a “boundary object” (Bowker and Star, 1999) enabling communication between diverse individuals and groups. As Figure 7.3 shows, there is a ‘boundary’ between those sections of the model that are concerned with the concerns of teachers and students, and those additional contextual factors identified in the educational leader and policy maker interviews.

This boundary needs to be negotiated in order to support successful implementation. If this does not happen we can imagine scenarios in which teachers and students might use MOOCs to address pedagogical objectives, but educational leaders and policymakers remain uninvolved or even unaware that innovations are taking place. In the same way, we can envisage scenarios in which educational managers introduce the MOOC (perhaps driven by the concerns about market share and competition that were mentioned in interviews) without consulting teachers or considering the pedagogical or other contextual factors that might prove important. In either of these situations, successful implementation would be less likely. The model itself then can function as a ‘boundary object’ which enables communication between stakeholder groups.

The concept of boundary object was introduced by Star and Griesemer (1989) and later developed by other authors such as Bowker and Star (1999), Fleischmann (2006) and Fox (2011). Based on their studies at Berkeley Museum, Star and Griesemer (1989) discuss how boundary objects could interact with members of different social groups. Examples of such boundary objects mentioned are field notes and specimens. The authors explain that the boundary objects identified were useful to both professionals and amateurs (for example, curators, scientists and the general public visiting the museum), even though they used them for different purposes and understood them in different ways. The boundary objects maintain their identities, but at the same time, they are flexible enough to allow different stakeholders to communicate.

Similarly, Bowker and Star (1999) also use the concept of boundary object when justifying the importance of theories and terminologies being understandable by different classifications of different groups of people. The work of Bowker and Star (1999) extends the definition of boundary objects to more abstract tools or notions. The examples of the groups of people that the authors used are medical such as the International Classification of Diseases (ICD) and social, such as systems of ethnic classification in South Africa. In that, the authors argue that the manner in which people are classified have different meanings to different people and so become boundary objects. The importance of understanding how different stakeholders have different needs is further discussed by Fleischmann (2006) who points out that a technology is a boundary object because it has to allow for the needs of both the users and designers. Therefore, Fleischmann (2006) states that the stakeholders need a better understanding of their boundary objects to be able to engage in meaningful discourse and in this case design and implementation. Fleischmann's interpretation of boundary objects can be applied to the MOOC: it has an identity which can be defined in terms of the technological features it offers, but it may be understood in different ways by different stakeholders.

It is not enough for one group to see something as a boundary object, otherwise it simply becomes an analytical construct for them, but not for others. However, it is possible for a boundary object to exist when not all stakeholders have full understanding about the domain to which it applies. This is applicable to the situation of MOOCs in Mauritius, where, as we have seen, levels of understanding vary widely.

Fox (2011) critically engages with the question of how the concept of boundary object is dealt with. Firstly, he states that articles on boundary objects have been restricted to defining their characteristics and how many types of such objects can be found. Secondly, he mentions how the concept of boundary objects is under-theorised. He then expands what is considered as boundary objects, arguing that “[boundary objects should] not be limited to categories set out by Star and Griesemer” (2011, p. 82) and gives more explanation of how these objects work by enabling discourse between communities.

MOOCs themselves fit the key characteristics of being boundary objects, because they can be adapted to different contexts (Bowker and Star, 1999; Fox, 2011); they are robust because their elements are consistent across the different contexts (Bowker and Star, 1999; Fox, 2011) ; and, going beyond their characteristics, they also enable people from different social worlds or communities of practice to communicate (Wenger, 1998):

“Boundary objects can be representations, abstractions or metaphors that have the power to ‘speak’ to different communities of practice” (Fox, 2011, p. 72).

This brings us to a second respect in which a MOOC itself might function as a boundary object. MOOCs, according to Siemens (2008) and other advocates, were built on the aspiration that learners will learn independently in networks. However, as we have seen Mauritian learners have pedagogical needs that current MOOCs do not address. Rather than simply seeing this as a mismatch, we can interpret this as the MOOC being again a boundary object between a global community concerned with networked learning and the

teachers and learners in Mauritius, who saw in the MOOC a particular set of opportunities and challenges influenced by local context.

Where teachers/educational leaders, like M, are enthusiastic advocates of e-learning and MOOCs in particular they will have a particular set of expectations of MOOCs; however, the boundary object character of MOOCs emerges again when these differ from those of students. The teachers may include a MOOC in their lesson to enable social construction of learning and expect the learners to create their own learning. At the same time, the learners may see the MOOC primarily as a source of information. Consequently, the teachers are disappointed because the learners are not interacting, and the learners are not happy because they are not being supported by their teachers. These were the kinds of issues that, as we saw in Chapter 5, arose during the MOOCs implemented during this research. If these teachers do not listen to the pedagogical preferences and take account of the needs of their students, there is a danger that learning in the MOOCs may be ineffective or that retention and completion of courses may suffer.

MOOCs will also function as boundary objects between educational leaders and policymakers, and teachers and students. But while the educational leaders who participated in this research clearly were aware of MOOCs in general terms, they viewed MOOCs as a tool that would enable Mauritians to develop skills and access higher education. Their understandings of student preferences and needs were even more removed than the teachers with respect to student preferences, although they appreciated that these would be important, and that they needed information before implementing MOOC. In their interviews, they pointed out that they did not have enough information to make a rational decision about spending money on MOOCs, echoing Fleischmann's point about not all stakeholders having full knowledge of the domains to which boundary objects belong. The model's function as a boundary object allows these areas of partial knowledge to be identified and the evidence and other stakeholder perspectives to be brought together to inform rational and evidence based choices to be made.

The challenge, therefore is to initiate and enable discussion between the different groups so that they gain an insight into the 'other' views: for example, managers need to understand the pedagogical intentions of teachers and the preferences of students; and teachers need to understand their organisation's priorities rather than just assuming that their own enthusiasm for technology is enough.

Fox (2011) states:

“If the potential success of technology adoption, embedding or roll-out across organizations depends on the presence of a boundary object (for example a metaphor, model or perhaps even a job title that is comprehensible to both scientist and practitioner), then those promoting a technology can enhance its adoption by seeking out or developing such an object” (Fox, 2011, p. 72-73).

Following Fox's (2011) argument, we can also see the model itself, as shown in Figure 7.3, as a boundary object. The model, because it is based on empirical evidence gathered from the stakeholder groups, allows the teachers, educational leaders and policy maker to better understand the pedagogical needs of the learners and what factors might be drivers and barriers to the acceptance of MOOCs as a new educational tool.

It also reveals what the educational leaders and policymakers need to know to be able to plan a successful implementation of a MOOC, particularly because it positions pedagogical practice alongside other contextual factors. Consequently, the model can support a process that shows how the different stakeholders can communicate to ensure a successful MOOC implementation, acting as a boundary crossing object and enable a participatory approach to the targeting, design and implementation of any new MOOC. It becomes, in Akkerman and Bakker's terms a 'boundary-crossing' object (2011) which enables discourse, rather than simply being a boundary object between communities.

I believe that my model “speaks” (in Fox’s terms) to the different stakeholders that would be involved in the implementation of MOOCs in Mauritius, and that, with the research objective of the project as a whole being to develop a strategy to implement MOOCs in Mauritius, the role of the model as a boundary object is critical. To reiterate Fox’s assertion, it has the potential to “enhance [the] adoption [of the technology] by seeking out or developing such an object” (Fox, 2011, p. 72-73). We will return to the role that the model can play in such an implementation strategy in Chapter 8.

The model resulting from the research also joins the group of technology acceptance models in that it explains how a technology such as MOOC can be effectively implemented in Mauritius. However, it addresses multiple stakeholders, other than just users of the technology, and recognises their differing perspectives. Rather than simply being a model of technology acceptance, it ends up being an object that allows them to engage in discourse and decision making across their respective boundaries. A comparison of the boundary object/model, resulting from the research with other technology acceptance models, indicates its usefulness in better understanding MOOCs.

## **7.4 Comparison with Existing Technology Acceptance Models**

As was discussed in Chapter 2, there have been attempts to combine technology acceptance models with other models and frameworks, although not with the COI model. The incorporation of the Model of PC Utilisation (MPCU) (Thompson, Higgins and Howell, 1991) into previous Theory of Reasoned Action (Fishbein and Ajzen, 1975) and Theory of Planned Behaviour (TPB) (Ajzen, 1991) brought the element “complexity of tool used” into TAM’s “perceived ease of use”. Subsequently Bandura’s (1995) Social Cognitive Theory has informed Venkatesh and Davis’ (2000) TAM2 model and Rogers’ Diffusion of Innovation Theory (1995) the work of Moore and Benbasat (1996).

The new model can be compared with other more recent models of technology acceptance. This is shown in Table 7.1.



<b>Model</b>	<b>Theoretical basis</b>	<b>Similarities with my model</b>	<b>Differences with my model</b>
Taylor and Todd's (1995b)	Technology Acceptance Model and Theory of Planned Behaviour	Both models consider perceived usefulness and perceived ease of use as factors that influence technology acceptance. Both are models which are combined to better explain how technology can be accepted.	Taylor and Todd (1995b) focus is on better understanding the users in different situations (voluntary and mandatory). The focus of my model is for different stakeholders to be better understood for sustainable acceptance of the technology.
Wixom and Todd (2005)	Technology Acceptance Model and User Satisfaction models	Wixom and Todd's (2005) and my model both take into account user satisfaction and hence extend the list of factors that affect it based on empirical evidence.	However, contrary to Wixom and Todd (2005), I investigated the pedagogical aspects that can influence acceptance and even found that the pedagogical needs of the learners are linked to their perceived usefulness and ease of use.
TAM2 (Venkatesh and Davis, 2000)	Technology Acceptance Model, Theory of Reasoned Action, Theory of Planned Behaviour and Social Cognitive Theory	Both TAM2 and my model accounts for the social contexts in which the technology is to be applied.	My model has additional, more specific factors that affect perceived ease of use and perceived usefulness.

			Furthermore, these two elements of TAM are seen to be influenced by pedagogical indicators as well.
TAM3 (Venkatesh and Bala, 2008)	Technology Acceptance Model with an information behaviour model	Both Venkatesh and Bala's (2008) and my model expand on TAM to better explain what affects perceived ease of use.	While Venkatesh and Bala (2008) focus on perceived ease of use, my model expands other aspects of TAM as well.
UTAUT -Unified Theory of Acceptance and Use of Technology - (Venkatesh, Morris, Davis and Davis, 2003)	Technology Acceptance Model, Motivational Model, Theory of Planned Behaviour, Model of PC Utilisation, Innovation Diffusion Theory and Social Cognitive Theory	Both UTAUT and my model are hybrids. UTAUT also considers social conditions as elements that affect technology acceptance and recognises the importance of facilitating conditions to affect user behaviour. Similarly, my model also elaborates on the impact of social context on technology acceptance and the need for teachers to facilitate the above mentioned acceptance.	However, my model is more specific in terms of how the conditions can be facilitated and by whom (teachers). Additionally, for my model, the social conditions are seen to affect how the learners learn and how they perceive the role of their teacher to be.

### ***Table 7.1: Comparison of my model with existing TAM models***

There are two key differences between my model and other TAM models. Firstly, my model considers the pedagogical needs of the users which are also seen to influence perceived ease of use and perceived usefulness. The argument is that when implementing a new tool such as MOOCs, it is important to also see whether current pedagogical models are acceptable for the potential users. The second aspect that differentiates my model from other TAM models is the aim. The aim of the other TAM models is to include more elements so that predictions become more precise. However my model aims to go beyond the users and make a point of contact of discussion. Indeed, it allows the different stakeholders to better understand each other so that technology acceptance becomes sustainable in the long term, thus making it a boundary object.

### **7.5 The New Model and Other Research**

While the research that has contributed to the development of the boundary object is similar to those carried out by Park (2009), Juhary (2014) and Hsieh, Lu and Lee (2014), there are significant differences as well. A key similarity among this work is that all this research seeks to explore the perspectives of students or teachers, and as such there are common themes which emerge. Juhary (2014), for example, identifies technical issues as an aspect that students speak about in the use of LMS. In my research, the students also mentioned technical issues, although as we have discussed, they stated it is the responsibility of the teacher to provide technical support to the learners. Hsieh, Lu and Lee's (2014) identify positive correlations between the different constructs of the technology acceptance model they use, and use this to make recommendations in support of blended approaches.

Fathema, Shannon and Ross (2015) and Tove (2014) discuss teachers' perspectives. While Fathema, Shannon and Ross (2015) evaluate their opinions on Learning Management Systems, Tove (2014) uses a hybrid of Technology Acceptance Model and Principal Agency Theory to explain the behaviour of teachers towards technology. The exploration of the view of policy makers regarding technology acceptance was reviewed using the work of May,

Mort, Williams, Mair and Gask (2003). The authors prove that although health care technologies may be considered as beneficial by policy makers, they may not be appropriate for clinical purposes.

What makes this research and the model that has emerged from it, original is that it uses data collected from a range of perspectives, has a very specific local context, Mauritius, and is associated with the development of a strategy for implementation.

What this allows is the application of the model to the data gathered and to the kinds of scenarios that were identified in the course of the interviews.

## **7.6 Modelling MOOC Implementation Scenarios**

While the purpose for the model is to serve as a boundary or boundary-crossing object, it can also be validated against the data that were collected, providing insights into the potential barriers and enablers (as well as the missing information) that relate to different ways in which MOOCs might be implemented. In the course of the interviews, several scenarios were studied or identified by participants:

- Short MOOCs within existing courses (the project interventions)
- M discussed the use of a MOOC as part of a blended course
- YB and HB discussed the provision of courses to support students entering Higher Education
- DH discussed the provision of short courses to develop employability skills

### **7.6.1 Embedded MOOC within existing courses**

Embedding MOOCs within existing courses would be appropriate for students similar to those who participated in my research; that is, undergraduates enrolled on established programmes.

For the scenario to be successful, firstly the pedagogical part of my model is considered: any MOOC integrated into it will also have to be well aligned with course objectives and well structured with sufficient resources. However, the students will also need a high level of teacher presence. Indeed they would not only need tools, activities or course structure that the teacher constructed, they will require the teacher to mediate activities and discussions. Based on the research presented here in Chapter 5, the learners might be less confident in terms of using tools which involve the development of social presence and peer learning.

Potential barriers can be identified. Firstly, it can be seen that the teachers may not be able to provide sufficient teacher presence and guidance, maybe because they themselves are learning to use the MOOC. Therefore, it is important to invest in training the teachers so that they can be more confident in supporting the learners. This point leads to the next barrier which is adequacy of resourcing. Indeed, the institution which is implementing this scenario may not have sufficient physical and human resources to support the project. Additionally, the Mauritian learners who participated in my research pointed out the need for tutorials and the support that they require in terms of assessment and feedback, all of which mean that even with a MOOC, there will be staffing and cost implications. The institution will have to consider how to address the issues mentioned.

In terms of the technology acceptance part of my model, a number of areas can be considered. The Mauritian learners who participated in my research did not have any issue in terms of IT skills. Therefore the IT skills of the learners, for this scenario, should not be a problem, although they will need their teacher or facilitator to provide technical support if they are facing issues using the tools on MOOCs. Furthermore, the learners will require the

usefulness of doing the course to be made clear to them. Then, the teachers would have to ensure that the MOOC being used is well integrated with what is being used in the institution and the curriculum.

The costs in this scenario might be relatively low as this would involve little additional content development because the MOOCs to be used are well-established courses; however there will be a need for more investment in training the teachers and meeting the pedagogical needs of the learners through teacher support online or offline.. Institutions implementing this scenario may see these costs as an investment which will enable further exploration of the use of MOOCs (as mentioned by YB) and as part of a longer-term strategy based on trained and experienced staff. The institution will also have to evaluate the implementation of this scenario by looking into how well it can meet the pedagogical and technology acceptance needs of the users, as well as building the capacity of teachers.

This scenario may be a low risk one to implement in order for institutions, teachers and students to familiarise themselves with MOOCs. However, because of the high teacher presence requirements of the learners, an alternative scenario, suggested by M is further reviewed, namely having MOOC as an element within a fully blended course, rather than as a discrete element or block, as was the case in the research project interventions.

### **7.6.2 MOOC within a full blended course**

From the above scenario, we have seen that providing teacher presence may be an important aspect to be considered. One way of reducing the student concerns about teacher presence is to have a blended approach rather than an embedded course. From M's Rodrigues experience of the online part of her course, having a fully online MOOC may be problematic due to variations in IT skills and lack of teacher presence resulting in a much poorer student experience. Having MOOC within a full blended course, with the MOOC content available alongside face-to-face activities which it supports and extends will mean that the teacher will be available. Therefore all the teacher presence that the learners need and may not have received on the MOOC will be taken care of in the face to face sessions. In fact, a "flipped classroom" blended model can be used whereby the students can engage with the content online in the MOOC and then bring their concerns and problems to a face-to-face seminar. Indeed, the Mauritian learners who participated in my research mentioned that they need teacher presence (TP) for cognitive presence (CP) to be developed. As stated by Karlsson and Janson (2016)

"The online preparation allows the teacher to use the meetings in class for getting in depth into the subject" (Karlsson and Janson, 2016, p. 135).

Therefore, a "flipped classroom" blended model will enable the maximisation of the use of teacher time in cognitively demanding (TP-CP) activities.

With regards to the technology acceptance elements, the following may be relevant to this scenario. If the learners are students from the universities, then their IT skills will not be a problem. Furthermore, since the course will be from reputable and well recognised platforms, the quality of the content will also not be an issue. Also, the data suggest that the course structures on these platforms are acceptable to the Mauritian learners. Additionally, this scenario offers lower burden in terms of thinking about assessment and feedback. The assessment will probably be based on the university's current processes and feedback

and tutorials can be given via emails and face to face sessions. As with the previous scenario, the costs are low again because the content is generic and supplementary, although this scenario still involves investment in staffing and teacher training. Again, the ability of the institution to cater for the pedagogical and other needs of the users will have to be evaluated.

Creating new MOOCs to address specific learning objectives, rather than implementing existing MOOCs, however, will be what many implementers would want to look into. The educational leaders and policy maker suggested two such MOOCs: to support access to Higher Education (HE) and to support graduate employability skills.

### **7.6.3 MOOC to support access to Higher Education (HE)**

The potential learners for this scenario can be from a wide range, including learners who have just completed their schooling and those who want to return to education after spending time in employment. With the learners who have just completed their schooling, many of the issues will be similar to the scenario in 7.6.1 because the Mauritian learners who participated in my research were indeed first year students. Therefore this section focuses on those who are returning to education.

The COI needs of the learners will have to be evaluated by the institution prior to creating the MOOC. Because of the fact that they have not been studying in a while, the learners will have to have their confidence level boosted and this will need strong guiding, mediating and validating teacher presence, probably more than the participants of my research who had clearer ideas about their rationales for being in higher education.

The technology acceptance aspects to be considered include the content of the course, accreditation and progression, legal implications, IT skills of the learners, technical support and costs involved. Indeed the MOOC will have to reflect the content required for learners to access higher education, given the particular characteristics of their experience of education, employment and social life in Mauritius. Additionally, the institution will have to decide on



how the accreditation and course progression are to be carried. As mentioned in chapter 6, the legal aspects for creating a MOOC will have to be considered right from the start of the project, for example the legal status of the content regarding copyright in terms of whether using it elsewhere is prohibited or whether it will be under a Creative Commons licence (like OERs) whereby it is possible that it may be adapted and localised. As such, the costs will be higher than in the previous scenarios. Also, the IT skills of the learners are highly likely to vary and there will be those who will therefore need technical support to be able to navigate through the MOOC and work effectively alone and with others in online environments. With regards to the costs, since this scenario will enable the higher education institutions to increase their market, they may be willing to fund the project. Also, enabling more people to access education is beneficial to the Mauritian society. As such, the government may also contribute in terms of funding.

The above scenario indicates that despite the high costs, funding is possible due to the nature of the course. However, there are many uncertainties and wide variations with regards to the pedagogical needs and IT skills of the learners. Therefore, when deciding to create a MOOC for the first time, a scenario where more is known about needs, risks and barriers might be preferred. What emerged in the interviews discussed in Chapter 6 was a very specific scenario in which this was the case, relating to the provision of graduate employability skills to match the needs of local employers.

#### **7.6.4 MOOC to support graduate employability skills**

The policymaker in his interview, suggested the use of MOOCs to improve the employability skills of graduates so as to match the needs of local employers.

From the COI (Community of Inquiry) point of view, with sufficient input from employers, the course should relatively be easy to design and be able to address the teaching presence and cognitive presence issues and, accordingly ease of use. The Mauritian learners indicated that they would not participate in social presence without teacher presence. However, since this particular type of course is skill based and concerned with the development of personal skills and competences, social presence may have limited importance. Furthermore, the potential students would not be at the level of those who participated in my research: indeed they will likely be level 6 students, and, consequently, teachers' support in every aspect of the activities to be done, may not be needed.

When we look at the Technology Acceptance Model (TAM) part of my model, the relevant factors to be considered are as follows. Firstly, the IT skills of the learners may be less of a concern because they would be students who have almost completed their first degree, and for that matter, may have encountered e-learning and even MOOCs in other learning contexts. However, perceived usefulness of the course would need to be made very clear to encourage participation and completion. As mentioned in 7.6.3, creating a MOOC will imply exploring the legal implications right from the start. Furthermore, again the accreditation and course progression will have to be considered by the implementer as part of the course creation.

It is to be noted that the potential cost of implementation of this scenario is likely to be high because it requires course development and management, particularly if employers are fully engaged in course design and specification of content. Therefore, in this scenario, business interests and possible funding sources (either businesses, government agencies,

international organisations, or a combination of these) would need to be explored for implementation to be successful.

The idea of using MOOC to develop employability skills, which emerged from the research itself, holds promise as a potential scenario which while being higher cost, may bring with it lower risks and both educational and economic rewards. The successful implementation of such MOOCs might then also encourage the development of other MOOCs in higher risk settings.

## 7.7 Conclusion

Chapter 7 reflects on the data findings analysed in chapters 5 and 6. It is seen that although my model has similarities with others based on technology acceptance models, it also has significant differences. The factors that the model includes are more specific to the local context and, most importantly, involve pedagogical aspects as well. Furthermore, the model enables different stakeholder groups to understand each other in terms of elements that would influence their acceptance of MOOC. This is an original development of existing technology acceptance models not only because of the multiple stakeholders, the exploratory methodology used and the integration of technology acceptance models with COI, but also because of the conceptualisation of the new model as a boundary object contributing to further exploratory research, development and evaluation.

In section 7.6, it can be seen that there are different potential ways of implementing MOOCs that are suggested by the data. Rather than simply discussing how to implement these individual scenarios, however, this thesis seeks to integrate these into a broader strategy. This designed to address the concern from educational leaders that they needed to know more about MOOCs and their potential, to cautiously implement them, and carefully evaluate outcomes. Therefore, in chapter 8, a staged implementation strategy is presented.

# Chapter 8: Implementation Strategy

## 8.1 Introduction

In this chapter, a MOOC implementation strategy will be presented. Rather than simply presenting a series of recommendations in isolation, the model outlined in Chapter 7 will be used, together with data collected in the course of the project and examples from research literature, to propose a broader strategy for the implementation of MOOCs in Mauritius. This strategy also reflects the need, identified by participants, for the involvement of multiple stakeholders, and for the model to be used as a boundary object around which to frame discussions, planning and evaluation. The scenarios which were derived from interviews with research participants and which were presented at the end of Chapter 8 are also integrated as potential elements of this strategy. The chapter then goes on to discuss contribution of the current research to this strategy.

The model presented here suggests a four-stage implementation which is framed in terms of technology acceptance (informed by pedagogical development models) and which sees this as a managed process in the following stages:

- Stage 1: Pilots and Preliminary Research
- Stage 2: Integrating MOOCs into Practice
- Stage 3: Customising and Developing MOOCs
- Stage 4: A MOOC for Mauritius

While there are stages identified, it is also proposed that these are seen as a broad programme of action research which involves enquiry, implementation and evaluation at different levels from individual courses to national, sector-wide level.

## 8.2 MOOC Implementation as Action Research

As Somekh and Zeichner (2009) point out, action research enables research to be put into action, the results of which then feeds further research.

“In generating research knowledge and improving social action at the same time, action research challenges the normative values of two distinct ways of being – that of the scholar and the activist.” (Somekh and Zeichner, 2009, p.5).

MOOC implementation is being suggested as a programme of action research so that it can, not only provide a solution for educational reform but also inform further research, enabling the model illustrated in figure 7.3 to be implemented more widely, and the implementation of MOOCs to be supported across Mauritius.

As a method of reforming education, funded by the government, Salleh (2006, cited by Somekh and Zeichner, 2009) mention two issues. Firstly, because the teachers (who are the action researchers) are pressured by the government, they lose their “professional agency” (Somekh and Zeichner, 2009, p.14), that is their ability to act independently. Secondly, they also do not feel free to admit their mistakes which can indeed be the source of further learning and improvements. Such limitations can hinder the effectiveness of the MOOC implementation. It is therefore important to clarify the approach to be taken by each set of contributors during the process.

Salleh (2006, cited by Somekh and Zeichner, 2009) suggests three arrangements. He starts by saying that initiative is to come from the bottom (that is the teachers) while the government can be the supporters of the initiatives. He then states that the government has to pay attention to what the teachers have to say and finally that the importance of reflection and its contributing factor to improvement has to be made known. This positions the government as the enablers of action research, providing support for experimentation and innovation, but also taking account of the needs of teachers and students. This also aligns with the composite COI-TAM model, where policymakers have to take account of

pedagogical issues and the contexts in which teaching and learning take place, rather than implementing 'top-down' technological innovation. With regards to MOOC implementation, Salleh's suggestions can be used, but with some adaptations.

The policymaker, DH, interviewed for the purpose of this research was very interested in how MOOCs might support Mauritian learners. However, Salleh's second suggestion will help create a higher level of understanding between the teachers and the policymakers. Indeed better communication will allow the different stakeholders to comprehend each other better, whether it is in terms of initiative or the importance of reflecting for improvement. In fact, this approach aligns with the principle of using the composite model as a boundary object, namely that each set of stakeholders are able to better understand what the others need, what their notions of quality and success might be, and the contextual factors that they might consider to be important. Additionally, the research aspect of the project will be more productive if there is involvement of universities. The vice chancellor interviewed for the purpose of the current research did express interest in working in collaboration with the government. Therefore, the possibility for universities to support teachers in experimenting with these new forms of learning can be seen. As Somekh and Zeichner (2009) suggest, such teachers' experiments can then be used to support the educational reforms that the government wants to implement. Such an endeavour is seen to have been successful in Austria as described by Posch (2003).

One of the initiatives explained by Posch (2003), where the action research enabled the experiences of teachers to contribute to the educational development, supports the argument made above. A major environmental project, involving several countries, involved teachers who experienced and reflected on school projects related to the environment. As Posch (2003) points out, the project was able to influence many items on the government agenda such as "the establishment of a network of teacher educators who involve teacher students in environmental projects" (Posch, 2003, p.239) and "the installation of an 'environmental education fund' to support school initiatives financially" (Posch, 2003, p.239).

Therefore, for the project implementation suggested in this thesis, the involvement of both the universities and the government is seen to be possible (from the interviews) and is recommended. The teachers can practise the different stages proposed and their reflections can inform how the implementation process is progressing and what improvements/developments need to be made. Alongside the technical infrastructure and content development that are outlined in the stages described here, there need to be means by which teachers can share their experiences, report on outcomes and inform decision-making. Again, this can be understood in terms of the composite COI-TAM model, with teacher accounts of what made MOOCs useful, easy to use and effective, feeding into broader sector-wide decisions about adoption and implementation.

### **8.3 Stage 1: Pilots and Preliminary Research**

Summary:

- IT Infrastructure Required: Existing Infrastructure
- IT Training Required: Early adopter teachers with limited training needs; students supported through courses
- Numbers of Teachers and Students: Very Low
- Educational Contexts: Variable, dependent on current opportunities, organisational context and location of early adopters.
- Costs: Low, although evaluation and research costs involved

This stage of implementation would seek to address the gaps in knowledge identified which have emerged from this research, including those identified by stakeholders themselves. The strategy for this stage is to be implemented at an institutional level. The 'boundary object' model presented in this thesis would frame these enquiries, through stakeholder analysis; analysis of existing knowledge and gaps in knowledge; the identification of



contributory factors, barriers; and the involvement of participants in design and evaluation. Additional information gathered would allow policymakers to develop cost-benefit-analyses and would inform their decision making.

The work already conducted by participant M, and undertaken in the course of this research, and the scenarios for embedded and blended learning MOOCs outlined in section 7.6 of chapter 7, already represent already-existing Stage 1 activity; however, these denote a very small evidence base and have involved only a small number of teachers and students. Stage 1 therefore is focused on developing a wider base of users, exemplars and case studies in order both to familiarise the stakeholders with MOOCs in Mauritius, and to begin to develop a larger evidence base.

Following the pattern of this research, to be able to use existing MOOCs, without customising them, teachers would need to understand which MOOCs would suit the curricula they follow; which might be the most appropriate platform for the MOOCs to be used from; and how to make these MOOCs effective for Mauritian learners. Small-scale MOOC integration into existing curricula is suggested for users to explore the use of MOOCs because a more massive one would require customisation, content development and potentially might represent too great a risk for teachers who are themselves not experienced in developing e-learning content. Furthermore, from the data collected from the educational leaders and policy maker, it was clear that a high risk project is not preferred.

The evidence of this research suggests that the most appropriate platforms that could be used at this stage are EdX and Coursera because of the support for the levels of structured teaching presence that they allow. Even then, as the analysis of student data in terms of presence has clearly demonstrated, a high level of presence by local teachers is suggested. Simply using the existing MOOCs is not sufficient; and at this stage teachers will require support and guidance in order to provide the patterns and level of teacher presence that the Mauritian learners require.

The kind of small-scale MOOC integration suggested above is mentioned by Israel (2015). He proposed the single MOOC and multiple MOOCs' adaptation. The single MOOC models enable the integration of one MOOC whereas the multiple MOOCs models have the integration of several MOOCs in the curriculum of a course. Since this stage is about piloting and carrying out preliminary research, a single MOOC integration model is suggested.

A key concern that emerged in this research was the level of participation in discussion forum activities, which were taken up only by a small number of students. This confirms findings by Caulfield, Collier and Halawa (2013), who describe how when a teacher asked the students to complete a MOOC alongside their other assignments, the teacher reported being able to have more time to plan for classroom discussions and other activities since the MOOC already had the course materials prepared. However, it was also seen that actual participation was limited.

A similar situation may arise when using the single 'wrapped MOOC' model for implementing MOOCs in Mauritius: students may see participation in the MOOC and particularly in peer-learning activities as being of limited importance compared with conventional assignments and assessments. Again, support for teachers in encouraging and participation in online discussions will need to be built in to any pilot studies in order to ensure that the Mauritian learners receive the teacher presence that they require.

One of the issues that the local teachers may face is that they may not agree with the teachers on the MOOCs who are in fact external to the Mauritian institution (Israel, 2015). In such situations, the local facilitator will have to make a decision on the basis of what his/her learners need.

At Stage 1, large-scale integration of MOOCs into existing university infrastructures is of less importance than developing teacher competence and confidence and testing out pedagogical practice. Issues identified by Bruff, Fisher, McEwen and Smith (2013), such as the fact that it is difficult to transfer the grades of the students from the MOOC to institutional

systems and consequently the monitoring of the students' progress becomes difficult, may arise, but these will be addressed at later stages. But, at this stage of implementation, informal assessment of the MOOC sessions will suffice. However, another factor identified by Bruff et al (2013), that it is difficult to match the content of MOOCs with local curriculum content, was already emerging in the course of this research, and this may be the incentive and driver for local teachers to begin to think about how they might develop their own MOOC content.

At this stage, the model of action research as described by Somekh and Zeichner (2009), and the specific limitations of the MOOC implementation model of Caulfield, Collier and Halawa (2013) will suit MOOC implementation in Mauritius. In addition the composite COI-TAM model will act as a boundary object whereby different stakeholders can see how best they can participate in the effective implementation of the stage, and will help decision making about what areas need further attention and enquiry. For example, if specific contextual factors such as student IT skills, or expectations of teacher expertise or presence appear to be important in specific pilot studies, these can inform further research. The exploratory nature of the research described in this thesis will therefore continue, providing a basis for more systematic evaluation and experimental studies at a later stage.

Another element of Stage 1 would be a larger-scale review of the features of different MOOC platforms to be undertaken by a wider range of stakeholder perspectives than a single researcher. This was another factor mentioned educational leaders and policy maker when discussing the implementation of MOOCs in Mauritius, and their need for comprehensive information. Additionally, at this stage, institutions would need to review issues relating to intellectual property rights of MOOC content as well as to matching the timing and the content of the MOOCs with those of their on-campus courses.

## 8.4 Stage 2: Integrating MOOCs into Practice

Summary:

- IT Infrastructure Required: Existing Infrastructure
- IT Training Required: Training for teachers in using MOOCs; students supported through courses
- Numbers of Teachers and Students: Rising
- Educational Contexts: Low-risk, generic, skills-based courses in Higher Education
- Costs: Low

This stage emerges from the previous stage and might involve implementing a MOOC for specific skills-based courses such as access to higher education, or those that can be delivered to large numbers of students at the beginning of their higher education. As such, stage 2 will also be implemented at the institutional level. These might include courses related to study skills, mathematics for specific subjects, regulatory frameworks for professional courses, health and safety training, training on equality and diversity, courses on teaching and learning approaches, courses on using technology in different professions, among others.

The specific scenario identified in this research was using MOOC in a fully blended course as explained in 7.6.2. Thus, the MOOC will be delivered online and in face to face sessions. In that, the MOOC itself will be from the current MOOC platforms such as EdX and Coursera. On the other hand, the face to face sessions will be delivered by a local facilitator. The scenario was indeed derived from one of the educational leaders' experience, namely M. As suggested in chapter 7, a flipped model classroom model can be used where students engage on the online content and then discuss about aspects requiring clarification in face to face sessions.

While these courses might be short in duration, they might be either embedded within existing courses, or might be standalone courses which are undertaken by students as part of a higher education programme.

While the content provided at this stage might still be generic, the emphasis is on:

- Identification at institutional level of opportunities for MOOCs to be used
- Identification and curriculum mapping of MOOC content to learning outcomes
- Increasing the number of students engaging in study through MOOCs
- Increasing the number of teachers involved in teaching with MOOCs, and supporting their professional development and pedagogical practice
- Providing an evidence base large enough to allow more systematic evaluation of student preferences, experience and outcomes.

The outcome of stage 2 will provide information about the usefulness of MOOCs to the educational leaders. They will be able to have evidence about the scope of opportunities and possible issues that they can expect from MOOCs. From the evidence obtained from this stage, they will then be able to see the value of customising MOOCs, and committing time and staff to MOOC development and training.

## 8.5 Stage 3: Customising and Developing MOOCs

Summary:

- IT Infrastructure Required: Content development but no new infrastructure
- IT Training Required: Training for teachers in MOOC design; student training to locate, access and use MOOCs
- Numbers of Teachers and Students: Rising
- Educational Contexts: Courses reflecting specific Mauritian educational needs
- Costs: Rising

If Stages 1 and 2 are successful, they may generate proposals and allow the identification of opportunities for the development and customisation of MOOCs with localised or original content. In the course of the research project, the specific scenario that has already emerged is that of employability skills for graduates.

The institution can then create a MOOC delivering employability skills to Mauritian graduates. However, it is suggested that the specific skills to be included in the MOOC could be identified by surveying employers or by using existing international frameworks of graduate attributes. The model in figure 7.3 can be used to identify factors to be considered at this stage of the MOOC implementation, as seen in 7.6.4.

The initiative for this stage will be from an institutional level with possible support and involvement from the government. Indeed, the educational leaders and the policy maker interviewed for the purpose of the current research indicated their willingness to collaborate with each other.

The purpose of this stage will be to bring the users of MOOCs in Mauritius closer to a complete integration. So now that they are familiar with the MOOCs on Coursera or EdX, the

institutions will have to make the MOOCs more suitable for Mauritian learners, either by localising content; by continuing to provide teacher presence either online through online or blended means; or by developing original content for new, locally authored MOOC courses. The degree of integration will be higher because instead of just adapting the way that the MOOCs are delivered through the support of local facilitators, the latter will see an increase in their responsibilities on MOOCs. In that, the local facilitators will also have to localise content which might include changing it so that, for example teaching cases are appropriate, language is suitable, cultural references are sensitive and so on.

Again the data from tables 5.1 and 5.2 in chapter 5 suggests that the tools have to be used to provide the teacher presence required by the Mauritian learners.

The development of the MOOC for this stage can be done via the Learning Management Systems (LMS) that the local facilitators are currently using. Then they would have to clearly state which outcomes of the curricula the MOOCs are fulfilling. Although creating the MOOC will be more expensive than stages 1 and 2, as Cooch, Foster and Costello (2014) suggest, it will be easier and less costly for an institution to use a platform that they know, rather than a new one. Therefore, at this stage, the institution may be more comfortable using their LMS. The institution will be using their knowledge from Stage 1 and Stage 2 to develop something that is MOOC-like using familiar technologies. The costs will be higher because they have to develop content, support teachers, provide backup, and will include all the aspects involved in being the course creator. However, it will not be as costly as buying in Coursera or other platforms. Another benefit to be obtained from this stage is the experience and confidence that the institution will develop, leading them to the delivery of longer term courses and possibly placing Mauritius on the global market with regards to education.

At this stage, the results from the different perspectives of the current research can be used. Firstly the model developed will help in deciding how to adapt and implement MOOCs in a way that is appropriate for the skills and preferences of Mauritian learners. Then there is the

assessment of the extent to which the courses can be converted into MOOCs which can be done using the tool built during the conduct of this research. The tool will help to see how to convert the courses into MOOCs.

As mentioned in stage 2 above, the data collected for the purpose of the current research suggest that a high level of teaching presence is required for perceived ease of use and perceived usefulness of MOOCs to be addressed. At stage 2, it was pointed out that training teachers and academics is important so that they are able to provide the support needed by Mauritian learners. At stage 3, preparation for stage 4 can be done in two ways namely developing content and in building up the number of teachers and students who are using MOOCs. Firstly, although the content will be developed on the institution's LMS, the experience will inform content creation by, for example, supporting teachers who are used to face-to-face teaching in developing video lectures and online activities. Then the number of teachers and students who are using MOOCs can be based on selective adoption of existing MOOC content in embedded models.

The experience of implementing MOOCs with larger numbers of students (Stage 2), and developing new content (Stage 3), while still encouraging the continuation of 'bottom-up' teacher experiments and pilots (Stage 1 ongoing) would provide both the evidence base and the community of practice of teachers and developers to enable the development of Stage 4: A MOOC for Mauritius.



## 8.6 Stage 4: A MOOC for Mauritius

Summary:

- IT Infrastructure Required: new infrastructure: hosting for MOOCs; content production studios; integration with student management and assessment systems; e-Portfolio systems for persistent learner records.
- IT Training Required: Comprehensive training in MOOC design; teacher training to support learning in MOOCs; student training to locate, access and use MOOCs
- Numbers of Teachers and Students: Significant Numbers of pre-HE and HE students and Lifelong learners
- Educational Contexts: Courses reflecting specific Mauritian educational needs as well as localised higher education content.
- Costs: High but potentially stabilising as business models emerge.

Stage 4 is speculative because its implementation will depend on the outcomes of stages 1, 2 and 3. The educational leaders and policy maker from the current research mentioned that they will require more information with regards to implementation. Indeed stages 1 to 3 will provide the case studies and scenarios on the basis of which the implementers will be able to make an informed decision about how to carry out stage 4. In that, these stages will enrich the model described in section 7.2 (figure 7.3).

The initiative will be at an institutional level with, possibly, more support from the government. The consideration of the government support is made for this stage on the basis of the argument that MOOCs can make higher education more accessible to Mauritians. The types of information that the educational leaders and policy maker identified include the costs, the business model, the benefits, the information required and barriers. These points, together with some mentioned by literature, are discussed below.

### **8.6.1 The costs**

As seen in sections 8.3-8.5, stages 1 and 2 involve less cost because of the use of existing MOOCs. Even though stage 1 comprises of evaluation and research costs, and stage 2 will incur some staff training and content development for the face to face sessions, the costs are much less than if the implementer has to shoulder the responsibilities of developing the course. On the other hand stage 3 will incur high costs in terms of creating course content and administering and managing the MOOC. The model developed in chapter 7 is used to see how stages 1, 2 and 3 can help inform stage 4.

Stage 1 can provide models of implementation at course level because it will generate empirical evidence of what the teachers can do and what the learners expect. However, it will not give information at the level of the institution where long term costs are involved. The importance of the model in figure 7.3 is to be able to consider the pedagogical factors at the course level as well as the acceptance factors at institutional level. It can then be seen that the stages proposed in chapter 8 follow the same line of thoughts whereby stage 1 enables a better understanding of possible pedagogies and hence helps to inform stages 2 and 3. Stages 2 and 3 then enable the exploration of factors at institutional level (although stage 3 may be supported by the government) and consequently are able to guide the implementation of stage 4. In that, stages 2 and 3 are considered when discussing the acceptance factors.

Stages 2 and 3 will provide information about the cost of setup, infrastructure and training in implementing the MOOC. While for stage 2, the infrastructure to be considered will be more about the face to face sessions, stage 3 will provide insights on how the LMS's infrastructure and devices are catering for the needs of the course and the students. As Bailey, Schneider and Ark (2013) suggest (and as seen from the model in chapter 7) human capital, professional development and cost of communication and evaluation are important elements of costs to be considered. In that, stage 3 will be more indicative of the cost involved in training the teachers and any other member of staff to be part of the MOOC creation,

development and implementation. Another important cost information provided by stage 3 is the costs on running the MOOC in the longer term. Indeed in stage 3, it should be clearer to the implementer how the MOOC could be developed for longer term use and what will be required for such an endeavour to take place. Stage 3 will also enable evaluation to be done by the providers and the users. The stages will also demonstrate the business model which is likely to work at stage 4.

### **8.6.2 Business model**

Stages 2 and 3 can be used to test business models. At stage 2, the Freemium to Premium model can be evaluated and stage 3 can assess Rebundling and Unbundling (Yuan, Powell and Olivier, 2014).

With Freemium to Premium, the institution can provide MOOCs freely. Then if the users want premium services, they would have to pay for them. However, while the service is free, the costs will have to be borne by the institution. Since at stage 2, the scale of the project is still small, this particular business model can be tested.

At stage 3, the number of students and teachers involved in the project will be more. Furthermore, as seen in the previous sections, the costs will be higher. In that, bearing the costs for the “Freemium” part of the business model may be difficult for the implementer. Then the latter may be inclined to charge for services which are essential for the achievement of the course. Such a move will go against the “freeness” of the MOOCs which are to be used for socially beneficial purposes such as allowing more learners to access higher education or improve their skills. In that, the institution will benefit if they use this stage to test another business model which will be more aligned to the purpose of making the society more productive. Consequently, ‘Rebundling and Unbundling’ can be evaluated at this stage (stage 3). The institution can determine the various elements of the online course and how these elements can be unbundled and then rebundled to reduce cost and to

provide revenue for the project. At this stage, the scale of the project is larger than stage 2 but still small enough to be able to test the above business model.

Apart from what is suggested by literature, another possible business model is sponsorship from employers and support from the government. Firstly, since it is about developing employability skills, the employers can be approached with regards to funding. Furthermore, the policy maker interviewed in the current research indicated the willingness of the government to support the MOOC endeavour if it benefits the society. Since a MOOC on the development of employability skills does benefit the Mauritian society, government support can also be sought.

From the above, the implementer will be able to identify which business model is most likely to be successful at stage 4. The educational leaders and policy maker who participated in this research also spoke of other information that they require, including the benefits. The benefits will indeed be part of the cost benefit analysis that YB, the Vice Chancellor, mentioned.

### **8.6.3 Benefits and other information**

The key benefit for conducting stages 1,2 and 3 is that they will provide valuable information required by the institutions who want to implement MOOCs. Stage 1 will enable the implementer to see whether it is beneficial for the institution to do a blended course (stage 2). Then stages 2 and 3 lead to a better understanding of how MOOCs work. Referring to figure 7.3, the stages will indicate how the contextual factors that affect perceived usefulness and perceived ease of use are being addressed. In that, there will be information generated regarding whether the MOOC content is supporting the government skills agenda (stage 3), whether the users are finding it easy to navigate through the contents, the range of IT skills of the students and how teachers are demonstrating their ability to support the learners and provide the teacher presence that they require. Also, stage 3 will show how the pedagogical needs of the learners change over a longer period of time.

With regards to the factors relating more specifically to implementation, apart from information about costs and business model discussed above, stages 2 and 3 (stage 3 to a larger extent) will demonstrate how the MOOC implementation is integrating with the other systems of the institution and whether the organisational culture is being influenced. Stage 3 will also give the institution more insights in terms of how they are going to deal with legal and administrative aspects such as copyrights. An important contribution of the stages 1, 2 and 3 to stage 4 is the information provided on barriers. Therefore the possible barriers that the implementer may face at the different stages are discussed.

#### **8.6.4 Barriers**

At stage 1, the purpose is to explore the use of MOOCs further by piloting them within the course delivery as it was done for the purpose of this research. Since there were no barriers as such faced by the researcher, it can be said that stage 1 may not give substantial information about barriers. However stage 2 is about another course structure, namely blended learning.

It is interesting to see that the thoughts of some authors in terms of blended learning are similar to what the educational leaders and policy maker identified as barriers for MOOCs. The approach will require a high level of motivation from the learners both for the online part and the face to face sessions (since the latter are likely to be linked to the online activities) (Llyod-Smith,2010). Maintaining the level of motivation for learners is a factor that has to be considered at all of the different stages. The implementers can use stages 1 to 3 to determine what motivational strategies will work for learners at stage 4. Secondly, Saade and Kira (2009) speak about the frustration and emotional turmoil that students may face if they do not have the technological ability to operate the online tools. The educational leaders and policy maker interviewed for the purpose of the current research also discuss about the computer using skills of the learners. The IT skills of the learners may be a barrier for both stages 2 and 3. As mentioned in 8.6.3, stages 2 and 3 will give the institution the

opportunity to see the range of IT skills that they are likely to have to deal with and the technical support that the learners may need.

The educational leaders and policymaker also mentioned the speed of the internet and authentication of students to be possible barriers. However, as M mentioned, the issue is mainly with Rodrigues, another island which is part of Mauritius. Consequently, both stages 2 and 3 will enable the implementer to strategise for any lack of internet speed. Then the authentication of students will be more relevant at stage 3 where the institution is fully responsible for the MOOC content and assessment. Therefore stage 3 will enable the institution to consolidate its student authentication methods to be used at stage 4.

Other barriers that the implementers will have to consider are the cultural issues and teacher dependency. The stages preceding stage 4 will allow the institution to identify any cultural issues that the users may face when dealing with people globally. Additionally, as mentioned above, stage 3 will provide insights on whether the students' dependency on the teacher is changing over a longer MOOC and how such a barrier can be overcome for a smoother stage 4.

As Corcoran (2009) state, the skill levels of teachers creating the MOOCs at stage 3 because there may be an issue arising from the teacher having to design the course and develop videos to be included on the MOOC. However, as mentioned before, the costs of training teachers for the purpose of designing a MOOC will be an aspect that the implementer will have to invest in for the MOOC endeavour to take place.

From the above it can be seen that stage 2 will indicate the costs and staff commitment that will be required for larger and longer courses. Then more robust information will be provided by stage 3 about the cost and outcome indicators across a whole year group, rather than just a few selected classes. Using the outcomes of stages 1,2 and 3 to inform stage 4 aligns with the exploratory nature of the research conducted for this thesis.

## **8.7 Conclusion**

This chapter elaborates on how the scenarios mentioned in chapter 7 can be implemented. An action research approach is suggested. In that, there are stages that the implementer can go through. After piloting MOOCs further in stage 1, a blended approach can be implemented and evaluated in stage 2, followed by creating a MOOC in stage 3. The outcomes of stages 1 to 3 will help in the implementation of stage 4, which this chapter describes as being speculative. Indeed, the stages prior to stage 4 will give information regarding the costs, business model, benefits, further information required, possible barriers and how to overcome them. Such information will increase the chance of success of stage 4.

The next chapter concludes the thesis in terms of how the research objectives were met, contributions made by the current research to the knowledge base relating to MOOCs and reflection on and limitations of the research conducted.

## Chapter 9: Conclusion

This chapter summarises the research by stating the extent to which it has been able to achieve the research aim and objectives and the other outcomes that it was able to achieve. The chapter also elaborates on the contributions that the research made to knowledge relating to MOOCs and reflects on the research journey of the researcher, as well as critically assessing its limitations. This in turn allows the identification of future research opportunities, which would also form part of the ongoing strategy outlined here.

### 9.1 Evaluation of the Research

#### 9.1.1 Achievement of the Research Objectives

The broad aim of the research was to offer an evidence-based assessment of the potential of MOOCs in Mauritian Higher Education and to make recommendations about features that will address any challenges identified and contribute to their adoption, student enrolment, retention and positive learning experiences and outcomes. It had the following objectives:

1. To explore the importance attached to indicators, (as defined by Garrison et al, 2000) by Mauritian HE (Higher Education) students
2. To explore the extent to which specific presence indicators contribute to attitudes towards and acceptance of e-learning environments including MOOCs
3. To review the extent to which current MOOCs allow specific presence indicators and technology acceptance factors to be implemented
4. To offer an evidence-based assessment of the potential of MOOCs in Mauritian HE and to make recommendations about features that will address any challenges identified and contribute to their adoption, student enrolment and positive learning experiences.

The first three objectives were answered from the data collected with the Mauritian learners. It was found that the Mauritian learners needed MOOCs with a high degree of teaching presence, and that this meant the personal involvement of teachers online to guide, mediate and validate learning; other forms of teaching presence widely used in MOOCs, such as video lectures were seen as potentially problematic by learners, and their introduction would



have to be carefully managed. The learners needed the teacher to validate their discussions and learning achieved and to support them in case of any difficulty that they might face, be it technical or academic. Thus the first research objective was achieved because from the data analysed, it was clear that there was a high degree of importance linked to COI elements by the Mauritian learners. Then the second research objective was addressed through an explicit linking of pedagogical presence indicators and factors known to encourage the adoption of emergent technologies.

The next step in the research was then to see whether the current MOOCs could provide for the needs of the Mauritian learners which leads to the next tool used with the Mauritian learners and consequently how the third research objective was achieved. What emerged here, from student interviews, audits, and scenarios proposed by educational leaders, was that while existing MOOCs might be useful to introduce concepts, develop practice and train staff, wider acceptance and integration into higher education and lifelong learning would require customisation of content, provision of continuing support, and training.

Drawing on the perspectives of the educational leaders and policy maker extended the composite model that was developed. These demonstrated the need for evidence-based assessment of the potential of MOOCs in Mauritian HE and for any recommendations about features that will address any challenges identified and contribute to their adoption, student enrolment and positive learning experiences.

We thus have both the data from the educational leaders and the policy maker and those from the teachers answering the fourth research objective. Firstly, the data from the educational leaders and the policy maker changed the model into a boundary object which allowed the different stakeholders to see that they all have interests in successfully implementing MOOCs in Mauritius and how they could do so. The educational leaders and the policy maker identified contextual elements affecting the acceptance of MOOCs as a new technology and broader factors that could influence the implementation of MOOCs in Mauritius. Secondly, the teachers helped to demonstrate the usefulness of a tool that can measure the extent to which a course can be converted into a MOOC. Consequently, the

data collected from the educational leaders and policy maker and the teacher enabled the researcher to create a model that would allow different stakeholders to understand each other's views with regards to the implementation of MOOCs. Furthermore, the educational leaders and policy maker suggested possible scenarios which formed the basis of the stages of implementation recommended in chapter 8 of this thesis. In that, there were the blended approach suggested by M, the creation of a MOOC to develop the employability skills of Mauritians mentioned by DH and the provision of courses that could facilitate the access to Higher Education for potential students as proposes by YB and HB.

The thesis recommends an action research approach to be used for the implementation of the MOOC project. Each stage proposed in chapter 8 can lead the implementer to the subsequent one. It was seen that the research conducted for the purpose of this thesis formed a reliable basis for strengthening the knowledge about MOOC's implementation in different contexts.

The achievement of the research objectives by the data analysed can be illustrated as follows:

<b>Research Objective</b>	<b>Main Findings</b>	<b>Described in:</b>
RO 1: To explore the importance attached to indicators, (as defined by Garrison et al, 2000) by Mauritian HE students	Teacher presence (and not teaching presence) predominates the online pedagogy that Mauritian learners need. The overlaps among the presence indicators also have a high level of teacher presence required for Mauritian learners.	Chapter 5: Data from semi structured interviews
RO 2: To explore the extent to which specific presence indicators contribute to attitudes towards and acceptance of e-learning environments including MOOCs	The pedagogical needs of Mauritian learners influence their acceptance of MOOC as a new learning technology. They also see teacher presence as an important contributor to perceived ease of use and perceived usefulness of MOOCs.	Chapter 5: Data from semi structured interviews
RO 3: To review the extent to which current	Mauritian learners found some of the COI and TAM elements that they need on the MOOC. However, there were	Chapter 5: Learner Audit of MOOC features using questionnaire

MOOCs allow specific presence indicators and technology acceptance factors to be implemented.	many elements that they needed that they could not find.	
RO 4: To offer an evidence-based assessment of the potential of MOOCs in Mauritian HE and to make recommendations about features that will address any challenges identified and contribute to their adoption, student enrolment and positive learning experiences.	The interviews with the teachers, policy maker and educational leaders gave rise to many factors that have to be considered for a successful implementation of MOOCs in Mauritius. As discussed in chapter 7, the points made by the teachers, policy maker and educational leaders transformed the model resulting from this research into a boundary object. Indeed the model shown in figure 7.3 demonstrates how communication among the various stakeholders is crucial for the implementation of MOOCs in Mauritius to be successful. Furthermore, on the basis of the data analysed in chapter 6, section 7.6 elaborates on possible MOOC scenarios and chapter 8 recommends stages of implementation.	Chapter 6: Interviews from teachers, policy maker and educational leaders

**Table 9.1: Data analysis and achievement of research objectives**

The research is evaluated by reviewing its limitations and thus showing possible research avenues to be taken.

### **9.1.2 Limitations of the Current Research and Future Directions**

The current research contributed to the knowledge on MOOCs in a number of ways. Furthermore, its limitations paved the routes for future directions to be taken for personal research. The contributions are discussed in section 9.2. In this section, the limitations resulting in future research are described.

#### ***9.1.2.1 Hype factor and over enthusiasm of participants in phase 1 of the research (first pilot)***

At the first phase of the research, the Mauritian learners indicated a high level of enthusiasm towards MOOCs. However, the reasons for their enthusiasm were not clear. To understand what the Mauritian learners needed, they had to be asked. Consequently, questionnaires were seen to have reliability issues and interviews were used. As seen in section 2.8.1, the reaction of the Mauritian learners towards MOOCs without having experienced the technology indicates the characteristics of early adopters. In that, it is clear that when implementing stage 1 described in section 8.3, support will be required to ensure that the data collected are reliable.

Stage 1 is about conducting pilots and preliminary research. Therefore, a research can be conducted to determine how early adopters and pilots can be supported so as to ensure that their data are not affected by the hype cycle and are consequently reliable.

### ***9.1.2.2 Trying to implement an intervention in a risk averse environment***

When conducting the current research, it was seen that the teachers were risk averse. Indeed, the teachers were willing to give only a small part of their teaching plan for the research. Furthermore, they were concerned about how the inclusion of MOOCs in their teacher strategies would affect the grades of the learners. Consequently, it would not have been possible to measure the impact of the MOOC on the learning achieved. However, measuring the impact of MOOC on learning was not an objective of the current research. It can, nonetheless, be the basis of a future research to be conducted. When a whole course is implemented at stage 2, mentioned in section 8.4, the impact of the MOOC part of the course on the learning achieved by the learners can be measured.

### ***9.1.2.3 Small scale study over a short period***

The research was a small scale study for a fixed time period with Mauritian learners from three classes of a higher education institution, three teachers, three educational leaders and one policy maker. The study is therefore seen to be of a small scale. However, the samples were appropriate for the purpose of the current research. Nonetheless, it will be interesting to collect the opinions of a wider range of participants. The data from the current research helped build a model whereby different stakeholders can communicate with each other. Then a possible direction that the researcher can take from this point is to explore what would be the outcome of a research conducted at a larger scale, which will inform the design and wider use of MOOCs 'at scale'. Indeed, the timescale of the current project meant that MOOCs have been continuing to develop and research has been emerging as the project has been ongoing. The researcher has responded to this by having an exploratory and responsive research design. However a larger scale quasi-experimental or experimental study with full evaluation of learning outcomes over full courses will further contribute to the knowledge on MOOCs. The outcome(s) of the study will then inform the implementation of stages 3 and 4 mentioned in sections 8.5 and 8.6.

#### ***9.1.2.4 Participants' lack of awareness about MOOCs***

Another characteristic of the current research is the fact that there was a general lack of awareness about the MOOCs so that many of the suggestions made by participants are speculative or based on only partial understanding or information. For example, although the Mauritian learners had some sort of experience about e-learning, it was the first time that they participated in a MOOC. In that, the research mentioned in 9.1.2.2 will enable the researcher to study the pedagogical experiences of learners over a longer period of time. The research can be done at stage 2 of the implementation process mentioned above to then better inform the implementation of stages 3 and 4.

Another area relating to lack of awareness was the teachers who lacked the skills required to use the MOOCs because they were also new users. In that, as Ferguson, Coughlan, Herodotou and Scanlon (2017) suggest, the development of the skills of those involved in MOOCs can be researched upon. The skills will not only include using the MOOCs but also all the skills that are needed to create MOOCs as well. Consequently, the new research will support the implementation of stages 2, 3 and 4. Further research can also be identified via the limitations of the pedagogical part of the model in figure 7.3.

### ***9.1.2.5 Lack of particular features needed to create the expected pedagogical experience for the learners***

The current research enabled the development of a model that shows how the pedagogical needs of the learners contribute to the acceptance of MOOC as a technology. The Mauritian learners emphasised on the teacher presence that they require. They also indicated teacher presence indicators as seen in chapter 5. Furthermore, they mentioned how they needed their teacher to support the development of their social presence. Therefore the current research provides a good basis for further research that could populate the pedagogical part of the model illustrated in figure 7.3. Indeed, few of the learners interviewed indicated exactly what they would want the teacher to do and how the latter could support them in using tools such as discussion forums.

The further research with regards to teacher presence can include two aspects. Firstly it can explore what the teachers would want the learners to do online and how they could guide them to do so. Indeed, it was seen that the Mauritian learners require more teacher presence. Therefore a possible research route can be developing ways of providing teacher presence. In that, in agreement with Ferguson et al (2017) regarding the role of peer support, ideas, other than the teachers being constantly present online, can be generated from the opinions of the participants. Ferguson et al (2017) mention that students are willing to pay for extra tutoring and suggest that this could be a possible research area. Another aspect of teacher presence to be researched upon can be developing the teaching and learning strategies that the teachers and learners require on MOOCs (Ferguson et al, 2017). The teaching and learning strategies will be specific techniques suggested on the basis of empirical evidence.

In terms of the social presence, the suggestion made by Ferguson et al (2017) will be helpful in the Mauritian context too. Indeed the authors mentioned that another possible research area for MOOCs can be about how to “support discussion more effectively” (Ferguson et al, 2017, p. 4). In that, the new research can include exploring how discussions can be

supported more effectively for Mauritian learners. Ferguson et al (2017) state that early socialising may help learners feel more comfortable with each other. They mention that more experienced MOOC users can be paired with new ones so that they can show them how to use the MOOC tools effectively. Such a suggestion is worth looking into because of the point made by the Mauritian learners who participated in the current research regarding how they would need support from their teachers. In that, there is a niche to explore whether some of the roles of the teachers expected by Mauritian learners can be fulfilled by more experienced learners. In line with using learners' socialisation to improve social presence, another avenue of research may be using social networks. There are many authors, such as Wang, Woo, Quek, Yang and Liu (2012), Zheng, Han, Rosson and Carroll (2016) and more recently Veletsianos (2017), who have researched on the avenue mentioned above. However, a more specific one can be conducted in the Mauritian context. The future research in the pedagogical part of figure 7.3 can further include assessment and accreditation.

The lack of assessment strategies for MOOCs in Mauritius represents another limitation of the current research. As Ferguson et al (2017) point out, approaches to assessment and accreditation in MOOCs can be strengthened. Therefore, the development of strategies for the assessment and accreditation to be used on the Mauritian MOOC represents a possible research area for the researcher. Research conducted in this area suggests peer review as a useful tool (O'Toole, 2013).

As mentioned above, the model generated from the data collected for the purpose of this research has shown how the pedagogical needs of learners have a strong influence on their acceptance of MOOCs. Consequently, specific strategies can now be researched on and built so that pedagogically, MOOCs become more acceptable and are seen to be more useful and easy to use by potential users. The results of the suggested research will enrich the experiences of the participants in stages 2, 3 and 4.



#### ***9.1.2.6 Difference in affordances in MOOCs for different users***

The current study included Mauritian learners in one higher education institution. Its focus was on presence indicators and technology tools available. However, it did not consider how different people can see different affordances in the same technology. Therefore, a micro level study can be conducted to compare the affordances. The data analysed in chapters 5 and 6 have indicated that learners have different ways of learning across the globe. As M mentioned during her interview, we can also expect a wide range of IT skills for the learners if a Mauritian MOOC is built. However there may be other bases for the differences in the affordances such as gender, age, IT skills, among others. Consequently, the first step can be identifying the bases of how affordances can differ, either empirically or via literature. Then, the researcher can evaluate how different users have different affordance in MOOCs.

The current research is seen to lead the researcher towards further research on the basis of its limitations. With the suggestions of future research that can be conducted, section 9.4 demonstrates how the researcher aims to further contribute to the knowledge surrounding MOOCs. Indeed, apart from the action research that will be done through the stages, as mentioned in this chapter, there are other possible avenues of research that can facilitate MOOC implementation in Mauritius.

The above section shows how the outcomes and limitations of the research conducted for the purpose of this thesis, combined with suggestions from literature, lead to possible research areas. In that, the limitations of the research and the resulting avenues for further research create a research agenda. The personal research programme of the researcher, was seen to possibly include studies on effects of the hype cycle, measuring the impact of MOOCs on learning, conducting a wider scale research over longer time period, researching on the development of skills of those involved in the use and creation of MOOCs, identifying specific ways to provide the teacher presence and social presence required by the learners and exploring how different users have different affordances in MOOCs.

Achieving the research objectives enabled the researcher to contribute to knowledge relating to MOOCs in a number of ways.

## **9.2 Original Contribution of the Research**

The original contributions of the research to current debate and to the concerns of different audiences are discussed below in terms of contributions to theory and knowledge and more practical implications.

### **9.2.1 Contributions to theory and knowledge**

The contributions of the research outcomes to theory and knowledge are mainly for the academic audiences for MOOCs, online pedagogy and TAM. Furthermore, the uses of MOOCs mentioned in the research and the possible research agenda described in section 9.1.2 also contribute to theory and knowledge.

#### ***9.2.1.1 Academic audience interested in MOOCs specifically***

The contributions of the research described in this section are summarised below:

- For a successful implementation of MOOCs, learner perspectives have to be considered. Local pedagogical practice and preferences will be of critical importance in the adoption of new learning technologies, specifically MOOCs.
- Apart from pedagogical indicators, a MOOC implementation should take into account technology acceptance elements
- The perspectives of different stakeholders are also important for the MOOC implementation to be successful
- Identification of possible uses of MOOCs which can be a basis for future research
- Limitations of current research creates research avenues for MOOCs

The literature review mentions how dynamic the research on MOOCs is. The research conducted for the purpose of this thesis responds to this dynamism by providing a range of information for MOOC academics.

Rather than focusing solely on potential audience size and accreditation issues, research is needed to explore learner perspectives in order to provide culturally appropriate local MOOC implementations. As it has been explained in the thesis before, if MOOCs are free or cheap,

then the developing economies would be the ones to benefit from them most. However, if the pedagogy existing on current MOOCs does not match the needs of the learners in developing countries, then they will not be useful for them. The current research provides detailed case studies leading to better pedagogical model for learners in countries which are similar to Mauritius in terms of their educational systems. Furthermore, having MOOCs that are more related to what the developing countries need will also help in making learning accessible for a higher proportion of their populations.

Another contribution of the research for MOOC academics is that it provides evidence about the importance of planning and implementing MOOC as a technology and the need for it to be accepted by not only one but by different stakeholders such as educators, students or policy makers. Indeed, focusing on the pedagogical needs of learners, while important, is not sufficient for a successful implementation of MOOCs. On the other hand, if only the opinions of the policy makers are considered, the MOOC implementation will not be successful because MOOC will not be accepted by the teachers and learners. Therefore, the current research shows how communication among different stakeholders is crucial for MOOC to be successful. The research also shows the way to further research in MOOCs.

Possible subsequent research are seen in two of the research outcomes. Firstly, MOOC academics can research on whether the possible uses of MOOCs mentioned by the educational leaders and policymaker will be useful in other contexts. It is important to note that the possible ways in which MOOCs can be used falls under both categories of contributions: contribution to theory and knowledge as described in this section and in terms of its practical implication as seen in section 9.2.2.2. The current research also created a research agenda on the basis of its limitations, as seen in section 9.1.2. In that, the academics interested in MOOCs will be able to use the current research as a basis for further studies.

As mentioned above, the academic audience who are concerned more generally about online pedagogy and technology acceptance can also benefit from the research.

### ***9.2.1.2 Academic audience interested in online pedagogy and technology acceptance***

The research contributed to the academic audience for online pedagogy and technology acceptance as per below:

- The current research enabled the creation of a hybrid model of TAM with pedagogical factors alongside other social factors

The literature review describes pedagogies of e-learning and models of technology acceptance and the different ways that the models have been expanded, either by increasing the acceptance elements or by combining models. From the technology acceptance models developed, it is seen that the social and cultural factors are important for a technology to be accepted (Venkatesh and Davis, 2000; Venkatesh, Morris, Davis and Davis, 2003; Venkatesh and Bala, 2008). Furthermore creating hybrid models enabled a wider range of factors to be considered for technology acceptance (Taylor and Todd, 1995; Venkatesh, Morris, Davis and Davis, 2003; Wixom and Todd, 2005; Moore and Benbasat, 1996; Shih, 2004). Drawing from the attempts to develop TAMs, a hybrid model was created in this research. Among the factors that are seen to affect the acceptance of MOOCs as an emergent technology, the hybrid model considered both the social and cultural factors and pedagogical needs of the learners. This research has therefore offered a contribution to the literature around technology acceptance and the family of TAM models, for the first time proposing how pedagogical presence indicators contribute alongside other contextual factors to the acceptance and adoption of emergent technologies. It proposes a new composite pedagogically informed technology acceptance model.

### ***9.2.1.3 Summary of original contribution to theory and knowledge***

The original contributions of this research to theory and knowledge are as follows:

- Model resulting from the research includes factors to be considered when implementing MOOCs in Mauritius
- As seen in figure 7.3, a new version of TAM is created with pedagogical and TAM elements combined
- Research avenues in terms of possible uses of MOOCs
- Further research agenda for MOOCs as described in 9.1.2

The research outcomes include a model of implementation of MOOCs in Mauritius, a new version of TAM, possible research on suggestions for use of MOOCs and a research agenda for MOOCs.

The model in figures 6.2 and 7.3 is based on the data from Mauritian learners and then expanded using the data from educational leaders and policy maker. Therefore, firstly it shows that the Mauritian learners need a high level of teacher presence. Indeed they need to have interactions with the teacher and not only use the teaching tools and resources. Secondly, it clearly demonstrates the need for the different stakeholders to communicate and work with each other to ensure an effective implementation of MOOC. In that, it is not sufficient to look only at the students' perspectives because the implementers also have needs that have to be considered. Similarly, implementing a MOOC only on the basis of what implementers need, may lead to students not wanting to participate and complete the MOOC. Consequently, the model in figures 6.2 and 7.3 stresses on the importance of inter stakeholder communication for effective MOOC implementation. Furthermore, the model has a different kind of hybridity as explained below.

As mentioned in section 9.2.1.2, the model forms part of the TAM family. However, it has a unique hybridity characteristic in that it shows how pedagogical needs of learners affect their

acceptance of MOOC as a learning technology. This uniqueness is in itself an original contribution to the literature on TAM.

The research created a research avenue in terms of possible uses of MOOCs. The data from the educational leaders and policymaker suggested many uses of MOOCs. MOOC academics can research more on the suggestions made by the educational leaders and policymaker in this research.

The limitations of the current research also contribute towards further research to be conducted. This research has initiated MOOC research in Mauritius and has set out what a future research agenda might involve (section 9.1.2).

The research, additionally, has other beneficial outcomes which are more practical.

## **9.2.2 Practical Implications**

### ***9.2.1.1 Teachers and educational leaders***

The research informs the knowledge of teachers and educational leaders in the following ways:

- Pedagogical model for teachers to design their teaching and learning strategies: predominantly influenced by teaching presence indicators. The research shows how crucial it is for teachers to guide, mediate and validate learning. Furthermore, the hybridity and overlaps between teaching presence and other presence indicators indicate the importance of teacher presence in the application of other indicators
- Model developed in this research informs educational leaders about pedagogical needs of the learners and views of other stakeholders
- The model points out that the teachers and educational leaders need to also consider the practical acceptance of the online course (TAM2 elements)

The pedagogical and the other technology acceptance parts of the model illustrated in figure 7.3 can support teachers and educational leaders when they are implementing MOOCs.

The pedagogical part of the model will inform models of practice that the teachers can employ in their teaching. Indeed the teachers will first recognise that the presence indicators are important for MOOCs to be useful for and accepted by their learners. Furthermore, they will also need to consider the importance of teacher presence as seen from its predominance in the hybrids resulting from the research. Secondly, they will be able to realise the extent of teaching, social and cognitive presence that they have to include for effective learning to take place. Also, the educational leaders will be able to see the needs of other potential users and stakeholders. In that, when the teachers and the educational leaders plan for pedagogical aspects of MOOCs at their respective levels, they will be able to develop models that would enable better acceptance of MOOCs by the users.

The teachers and educational leaders will also be able to recognise their role in influencing the perceived ease of use and perceived usefulness of the MOOCs. The model, built on the basis of the current research, will enable the educators to see that apart from educating the learners, it is also important for them to facilitate the use of the MOOC and guide the learners in terms of how useful the MOOC can be. In that, they will be able to see that the whole experience of e-learning is not only about teaching, learning and assessment but also includes more practical acceptance elements. The research therefore identifies new areas of pedagogical practice that teachers will need to develop, new forms of interaction with students, and training needs associated with both of these.

While the above is about the e-learning experience of the learners, it can also be seen that the educational leaders, with policy makers, can use the research at a more strategic level.

#### ***9.2.2.2 Educational leaders and policy makers***

The research informs the knowledge of educational leaders and policy makers in the following ways:



- Success of MOOC implementation depends on factors such as more research in areas identified in this research and communication with teachers and other stakeholders
- Chapter 8 suggests stages of implementing MOOCs in Mauritius based on evidence collected
- The possible uses of MOOCs in Mauritius are identified by the educational leaders and policymaker
- The research also defines the role of the teachers with regards to the perception of the ease of use and usefulness of MOOCs by Mauritian learners

The research has highlighted areas where policymakers will need to review existing research as well as technical audits, conducting audience research and stakeholder analysis to fill the gaps in current knowledge. Furthermore, the model created in this research on the basis of empirical evidence indicates other factors that can influence the success of the MOOC implementation.

The educational leaders and policy makers will be able to recognise the importance of communicating with teachers so that they can include the evaluation of the learning experience as a factor that will affect the success of the MOOC implementation. They will also be able to see what the users need and what the implementers should do for MOOC to be implemented effectively. If a MOOC implementation was to be proposed on the basis of the results of phase 1 of the research, where all the learners were enthusiastic about MOOCs, the proposal would not have been sufficiently informed. The researcher would not have been able to convince the educational leaders and policy makers with regards to what the learners need and how the project can be successful. With the model illustrated in figure 7.3, the researcher is able to bring forward empirical evidence in terms of what would influence the acceptance of MOOCs by users and implementers.

Another contribution that the research is making to the knowledge of the educational leaders and policy makers with regards to MOOCs is that it is proposing stages of implementation

(chapter 8) using action research. In that, they can carefully plan for the MOOC implementation and see how each stage informs the subsequent ones.

The plan for the implementation of MOOCs in Mauritius is seen to be supported by the possible uses of MOOCs in Mauritius as identified by the educational leaders and policymaker. Section 9.2.1.1 elaborates on how academics interested in MOOCs can further research on the uses of MOOCs. However, it can also be seen that the points mentioned by the educational leaders and policymaker will have a more direct and practical impact on MOOC implementation in Mauritius. Indeed apart from accessing Higher Education, MOOCs are recommended by the educational leaders and policymaker to develop specific skills such as employability, literacy and numeracy. Hence, such suggestions can form part of the plan to be developed for the implementation of MOOCs in Mauritius.

Apart from the above, the research also indicated what teachers using MOOCs might need to do for the Mauritian learners to use the tools effectively and the extent to which policy makers and educational leaders require knowledge relating to MOOCs. Thus, this PhD research contributes to the knowledge that the educational leaders and policy makers need to implement MOOCs effectively.

It can be seen from the above that the outcomes of the research form original contributions to theory and knowledge relating to pedagogy, to MOOCs and to more general aspects of e-learning and technology acceptance. Furthermore, the research has more practical contributions to implementation of MOOCs. The research journey has been both challenging and enriching as explained in the reflection below.

### **9.3 Reflection**

The research experience informed different aspects of the research. Firstly, focusing only on teaching presence was seen to limit the research and statistical analysis of pilot data (Phase 1: pilot 1) suggested that this might not capture learner experience to any meaningful extent. Also, the literature review indicated that acceptance of MOOC as a technology is important. Consequently, TAM2 was used to cater for the technology acceptance elements of the model to be constructed. Secondly, Phase 1 (pilot 1) of the research showed that the Mauritian learners were over enthusiastic about the MOOC and it was not clear whether this was only because it was new to them. Therefore, the data were not valid enough to build a compelling case that could be brought forward to policy makers. This leads to the third point which is about including more participants in the research to demonstrate views from more perspectives. Additionally, another result of Phase 1 (pilot 1) was that the use of only questionnaires was seen to be insufficient. Indeed, as a case study researcher, and with my interest in informing policy and building a compelling case, different data collection tools had to be piloted as shown in Phase 2a (pilot 2) of the research. In that, it was seen that a qualitative approach would suit the research objectives, which were also amended as described in the next paragraph.

The changes made to the research objectives were directly related to the above exploratory process. The scope of the research was broadened to include the categories of COI and TAM2. The change in the scope of the research resulted in a change in the first three research questions which had to be broadened as well. Another change made in Phase 2a was including the viewpoints of two additional stakeholder groups relating to the introduction of MOOCs in Mauritius, namely educational leaders and policy maker and teachers in the Higher Education sector of Mauritius.

Including two more sets of participants was a result of an additional research question which was “To offer an evidence-based assessment of the potential of MOOCs in Mauritian HE and to make recommendations about features that will address any challenges identified and

contribute to their adoption, student enrolment and positive learning experiences". The framework then consisted of Phase 2b (main data collection) where the methods and approach used in Phase 2a (pilot 2) were carried with a larger group of participants. The results of the research were used to achieve the research objectives as discussed above.

The research was started to see how MOOCs could benefit people in Mauritius. Access to higher education is important for developing countries such as Mauritius. The fact that MOOCs are free courses made the researcher think about whether they could be used to enable more Mauritians to access higher education. It was encouraging to see that the educational leaders and policy maker also had similar thoughts. As mentioned in section 9.2.2, it would not have been advisable to recommend MOOCs based on the initial pilot at stage 1 of the research, where all the learners were enthusiastic about MOOCs. Such a step would leave too many areas unknown such as:

- Are current MOOCs sufficient for them?
- What are the views and thoughts of potential implementers?

With the insights gained from the research conducted for the purpose of this thesis, an evidence based strategy can be envisaged so that the likelihood of successful MOOC implementation in Mauritius is higher.

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# Appendices

## Appendix 1: Interview Protocol

<p><b>Hello. How are you?</b>  <b>My name is Sharvaani. I am conducting a research on MOOCs. Have you heard of MOOCs?</b>  <b>Well they are free online courses. You only need to have an internet connection. The courses are delivered by world known universities on platforms such as Coursera, EdX and Udacity. The key differences between a MOOC and any other online course are that it is Open and hence Massive.</b>  <b>The purpose of the interview is to determine your perception of what is important on an online course. I want to see how MOOCs can be useful to Mauritians. It is completely confidential and there will not be any information given that may identify you as a respondent. Also, if you want, I will give you a copy of the transcript before using it.**</b></p>	
Question	Answer
Have you ever studied online?	
What was the name of the platform? Do you remember? (prompts may be given such as Moodle, Blackboard, Sakai, WebCT, Coursera, Udacity, EdX,...?)	
How long was the course for?	
Describe your experience.	
How much social interaction did you have? Tell me about it?	
How valuable was it?	
Were there any problems?	



How did you develop your learning on the online course/other form of learning?	
What aspects were important to you?	
How was your teacher “seen” on an online course?.....Was it only through interactions?	
How was his/her presence important to you on an online course?	
What else could your teacher have done to help you?	
What would motivate you to do an online course?	
What kind of courses would you find useful as online ones? E.g. introductory courses to a particular qualification, prerequisite courses, literacy, numeracy, ICT courses,.....?	
What free online course would encourage you to study further? This and the above brought similar responses. Therefore, this question was removed.	
Give me a couple of examples of technology that is easy to use? Why? Changed because the responses were similar.	

*\*Note: Additional follow-up questions will be asked, as appropriate, with each participant.*

*\*\*The Mauritian learners were asked to go through the information sheet and consent form prior to the interview.*

## Appendix 2: Student Audit Document

<p><b>Please complete the questionnaire below to state whether you experienced the indicator mentioned or not. Any comment will be appreciated.</b></p> <p><b>Please note that any information given by you will be used for the purpose of the research only as indicated in the information sheet provided.</b></p> <p><b>No data will be used without your consent as per the consent form you signed.</b></p>		
<b>CP</b>	<b>Found on MOOC</b>	<b>Comments</b>
<u>exchanging information with teacher</u>		
exchanging information with peers		
<u>asking questions on discussion boards</u>		
<b><u>having outcomes and assignments on the MOOC and</u></b>		
using the resources on the online course independently.		
<b>SP</b>		
greeting each other		
<u>being addressed by first name</u>		
Invitations to discussions		
<u>participation in discussions</u>		
<u>messages from others – to and from and</u>		
<b><u>respecting others.</u></b>		
<b>TP</b>		
sequential structure of the course		
course instructions		
having resources available		
<b><u>adding a glossary of terms</u></b>		
the teacher participating in discussions		
<u>the teacher to validate the discussions</u>		

<u>the teacher to summarise discussions and videos</u>		
the teacher to encourage participation in discussions		
<b><u>the teacher to give reminders on deadlines on announcements and posts</u></b>		
the teacher to write to students		
assessment tasks set.		
<u>the teacher to give regular feedback</u>		
<u>the teacher to give tutorials</u>		
<u>the teacher to describe the usefulness of the course and having support teachers and</u>		
<b><u>the teacher to guide the learners on how to achieve learning outcomes.</u></b>		

## **Appendix 3: Information Sheet and Consent Form for Participants**

### **Research aims and objectives**

#### **To whom it may concern**

My name is Sharvaani and I am conducting research on the extent to which learners require teaching presence on an online course, specifically a MOOC (Massive Open Online Course). The aims and objectives of the research are explained below.

#### **A pedagogical framework for MOOCs (Massive Open Online Courses) to suit developing countries: a Mauritian case study**

MOOCs are free online courses accessible by anyone who has an internet connection. The courses are delivered by world known universities on platforms such as Coursera, EdX and Udacity. In contrast with other conventional online learning environments, MOOCs are based on building networks, not only with online resources, but also with online learners. The pedagogy thus enhances critical thinking development.

Current research suggests the introduction of MOOCs in developing countries. However, we need to research whether the manner, in which MOOCs are delivered, is appropriate for learners in developing countries such as Mauritius.

This study compares the teaching presence requirements of worldwide MOOC learners and Mauritian learners in face to face settings in order to develop a pedagogical framework for MOOCs which suits learners in developing countries.

A preliminary literature review indicates that MOOCs are not widely used by the Mauritian population.

The outcome of the research will be a new MOOC pedagogy suitable for developing countries and will help the universities which deliver MOOCs to reach potential learners in developing countries.

The research questions for both MOOC users and Mauritian learners are as follows:

1. What is the degree of importance of each teaching presence indicator<sup>1</sup> to each respondent?
2. How can the teaching presence requirements of MOOC learners and Mauritian face-to-face learners be compared?
3. What changes need to be made to the MOOC pedagogy to ease its introduction in Mauritius?

### **Briefing Letter/Information Sheet**

I would very much appreciate your assistance in the above evaluation project.

If you are prepared to assist with this project it would involve you in:

- completing the consent form;
- completing questionnaires to determine your background and
- being interviewed about the reasons for the ratings given to each indicator of teaching presence;

All of the above responses will be recorded anonymously.

- Confidentiality will be maintained in relation to the names of all participants.
- Please note that you may withdraw your consent to take part in this research at any stage before and during the research. In this case any data that has been collected in relation to you will be destroyed.
- All data collected for this project will be kept securely in a locked cabinet and will be destroyed after a period of 5 years.

**The nature of the research and its aims has been explained above. The outcomes will be disseminated as follows:**

- You will be informed via email when your transcript is ready and you will have the right to request a copy of the interview transcript and analysis relating to your own particular interview.

A consent form to be signed by you is attached. Please complete the latter to confirm the terms of agreement with regards to my research.

Thank you very much for your co-operation.

Sharvaani D Ramkissoon, Research student

University of Bedfordshire, Polhill Avenue, Bedford, MK41 9EA, United Kingdom

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<sup>1</sup> Garrison et al, 2000

## Consent Form General (CFG)

Material gathered during this research will be treated as confidential and securely stored. Please answer each statement concerning the collection and use of the research data.

Kindly indicate your category by ticking the appropriate box:

1. Student registered on a MOOC	
2. Teacher delivering a MOOC	
3. Student at a Mauritian University	
4. Teacher at a Mauritian University	
5. Policy maker in the educational field in Mauritius	

1. If you are a policy maker in Mauritius, would you like to state your position?

Yes No N/A

If yes please write your job title \_\_\_\_\_

2. I have read and understood the briefing sheet Yes  No

3. I have been given the opportunity to ask questions about the study. Yes  No

4. I have had my questions answered satisfactorily. Yes  No

5. I consent to completing the questionnaires. Yes  No

6. I consent to being interviewed. Yes  No

7. I understand that I can stop the interview at any point if I feel too stressed to answer Yes  No

8. I agree to the interview being recorded and to its contents being used for research purposes. Yes  No

9. I agree to the transcripts being archived in line with conditions specified on the briefing letter. Yes  No

10. I agree to my recordings being archived and used for other bona fide research. Yes  No

11. I would like to see a copy of my transcript. Yes No
12. I agree to the use of the data related to me even if I am no longer reachable for me to see my transcript before Yes  No
13. I would like my name acknowledged in the report (without linking it to content or quotation) Yes  No

Name (printed) \_\_\_\_\_

Signature \_\_\_\_\_ Date \_\_\_\_\_

Please feel free to contact us if you have any further questions.  
The name of the main investigator, along with telephone and email contact details is:

Name: Sharvaani Devi Ramkissoon

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If you have questions or concerns about your role and rights as a research participant, would like to obtain information or offer input, or would like to register a complaint about this study, you may contact, anonymously if you wish,

Professor Angus Duncan  
Head of the Research Graduate School  
University of Bedfordshire  
University Square  
Luton  
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Email: [angus.duncan@beds.ac.uk](mailto:angus.duncan@beds.ac.uk)

## **Appendix 4: Consent Form for Gatekeepers**

### **Briefing Letter**

#### **To the Vice Chancellor/Director General**

#### **University name and address**

Date:

Dear Sir/Madam,

I would very much appreciate your assistance in the above evaluation project.

If you are prepared to assist with this project it would involve your learners and teachers in:

- completing the consent form;
- completing questionnaires to determine their backgrounds and
- being interviewed about the ratings given to each indicator of teaching presence.

All of the above responses will be recorded anonymously.

- Confidentiality will be maintained in relation to the names of all participants.
- Please note that you may withdraw your consent regarding any of your learners and/or teachers to take part in this research at any stage before and during the research. In this case any data that has been collected in relation to that respondent will be destroyed.
- All data collected for this project will be kept securely in a locked cabinet and will be destroyed after a period of 5 years.

**The nature of the research, and its aims, has been explained below. The outcomes will be disseminated as follows:**

- The participants will be informed via email when their transcript is ready and they will have the right to request a copy of the interview transcript and analysis relating to their own particular interview.

An example of the consent form to be distributed to your learners and teachers (CFG) is attached to this letter.

A consent form to be signed by you (CFVC) is also attached. Please complete the latter to confirm the terms of agreement with regards to my research.

Thank you very much for your co-operation.



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## **Research aims and objectives**

### **To the Vice Chancellor**

I am conducting research on the extent to which learners require teaching presence on an online course, specifically a MOOC (Massive Open Online Course). The aims and objectives of the research are explained below.

### **A pedagogical framework for MOOCs (Massive Open Online Courses) to suit developing countries: a Mauritian case study**

MOOCs are free online courses accessible by anyone who has an internet connection. The courses are delivered by world known universities on platforms such as Coursera, EdX and Udacity. In contrast with other conventional online learning environments, MOOCs are based on building networks, not only with online resources, but also with online learners. The pedagogy thus enhances critical thinking development.

Current research suggests the introduction of MOOCs in developing countries. However, we need to research whether the manner, in which MOOCs are delivered, is appropriate for learners in developing countries such as Mauritius.

This study compares the teaching presence requirements of worldwide MOOC learners and Mauritian learners in face to face settings in order to develop a pedagogical framework for MOOCs which suits learners in developing countries.

A preliminary literature review indicates that MOOCs are not widely used by the Mauritian population.

It is expected that the research will help influence developments in Mauritius in particular and that the new MOOC pedagogical model developed will also be relevant to other developing countries with similar history, educational structures and economic and social profile to that of Mauritius. It will also help the universities which deliver MOOCs to reach potential learners in developing countries.

## *Template of Consent Form General (CFG): to be given to potential participants in your organisation*

Material gathered during this research will be treated as confidential and securely stored. Please answer each statement concerning the collection and use of the research data.

Kindly indicate your category by ticking the appropriate box:

6. Student registered on a MOOC	
7. Teacher delivering a MOOC	
8. Student at a Mauritian University	
9. Teacher at a Mauritian University	
10. Policy maker in the educational field in Mauritius	

7. If you are a policy maker in Mauritius, would you like to state your position?

Yes    No    N/A

If yes please write your job title \_\_\_\_\_

- |  |                              |  |                             |
|--|------------------------------|--|-----------------------------|
| 8. I have read and understood the briefing sheet   | Yes <input type="checkbox"/> |  | No <input type="checkbox"/> |
| 9. I have been given the opportunity to ask questions about the study.                                 | Yes <input type="checkbox"/> |  | No <input type="checkbox"/> |
| 10. I have had my questions answered satisfactorily.   | Yes <input type="checkbox"/> |  | No <input type="checkbox"/> |
| 11. I consent to completing the questionnaires.  | Yes <input type="checkbox"/> |  | No <input type="checkbox"/> |
| 12. I consent to being interviewed.  | Yes <input type="checkbox"/> |  | No <input type="checkbox"/> |
| 7. I understand that I can stop the interview at any point if I feel too stressed to answer            | Yes <input type="checkbox"/> |  | No <input type="checkbox"/> |
| 8. I agree to the interview being recorded and to its contents being used for research purposes.       | Yes <input type="checkbox"/> |  | No <input type="checkbox"/> |
| 9. I agree to the transcripts being archived in line with conditions specified on the briefing letter. | Yes <input type="checkbox"/> |  | No <input type="checkbox"/> |
| 10. I agree to my recordings being archived and used for other bona fide research.                     | Yes <input type="checkbox"/> |  | No <input type="checkbox"/> |
| 11. I would like to see a copy of my transcript.   | Yes <input type="checkbox"/> |  | No <input type="checkbox"/> |

12. I agree to the use of the data related to me even if I am no longer reachable for me to see my transcript before

Yes

No

13. I would like my name acknowledged in the report (without linking it to content or quotation)

Yes

No

Name (printed) \_\_\_\_\_

Signature \_\_\_\_\_ Date \_\_\_\_\_

Please feel free to contact us if you have any further questions.

The name of the main investigator, along with telephone and email contact details is:

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If you have questions or concerns about your role and rights as a research participant, would like to obtain information or offer input, or would like to register a complaint about this study, you may contact, anonymously if you wish,

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## *Consent Form to the Vice Chancellor requesting permission for data collection in their institution (CFVC)*

Material gathered during this research will be treated as confidential and securely stored. Please answer each statement concerning the collection and use of the research data.

- |   |     |                          |    |                          |
|---|-----|--------------------------|----|--------------------------|
| 1. I have read and understood the briefing sheet  | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |
| 2. I have been given the opportunity to ask questions about the study.                                | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |
| 3. I have had my questions answered satisfactorily.   | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |
| 4. I consent to the distribution of questionnaires.   | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |
| 5. I consent to my students and teachers being interviewed.   | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |
| 6. I agree to the interviews being recorded and the contents being used for research purposes.        | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |
| 7. I agree to the transcripts being archived in line with conditions specified on the briefing letter | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |
| 8. I agree to the recordings being archived and used for other bona fide research.                    | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |
| 9. I would like my name acknowledged in the report (without linking it to content or quotation)       | Yes | <input type="checkbox"/> | No | <input type="checkbox"/> |

Name (printed) \_\_\_\_\_

Signature \_\_\_\_\_ Date \_\_\_\_\_

Please feel free to contact us if you have any further questions.

The name of the main investigator, along with telephone and email contact details is:

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## Appendix 5: Tool to Convert Courses into MOOCs

### Appendix 5(a): Management

<b>Purpose of tool: Determine the TP, SP and CP of a unit to assess its “MOOCability”.</b>				
<p><b>Instructions</b></p> <p>Complete all sections.</p> <p>Section A: Give a brief introduction of the curriculum</p> <p>Section B: Indicate the degree of TP(Teacher Presence), SP(Social Presence) &amp; CP (Cognitive Presence) required for a unit in terms of a proportion to total up to 10, for example a particular unit can be apportioned as follows SP2:TP5:CP3., thus the total is (2+5+3=10).</p> <p>TP: How much of the unit needs the guidance of a teacher</p> <p>CP: How much of the unit can be learnt independently by the learner</p> <p>SP: How much of the unit depends exclusively on learning from peers</p> <p>An effective way of going about it is to first see how much can be done independently first (CP).</p> <p>Section</p>				
<p><b>Section A: The curriculum</b></p> <ol style="list-style-type: none"> <li>1. Who designed it?</li> <li>2. Description of the students             <ol style="list-style-type: none"> <li>a. Average age:</li> <li>b. Educational System (western or eastern):</li> <li>c. Entry requirements:</li> </ol> </li> </ol>				
<b>Section B: Apportion units –TP, SP, CP (1 to 10)</b>				
Management		TP	SP	CP
Units	Can be online? (Yes /No/Partly)			
Organisation and Management				
Organisational Behaviour				
Accounting and Financial Analysis				
Economics for Managers				

Foundations of Mauritian Law				
Marketing Fundamentals				
Managerial Communications				
Statistics I				
Introduction to Information Technology				
Basic Computer Applications				
Marketing Management				
Human Resource Management				
Operations Management				
Research Methodology in Management				
Strategic Management				
International Business and Management				
Managing Quality				
Practical Training Dissertation				
ELECTIVE MODULES				
Organisation Development and HRD				

Business Ethics and Good Governance				
Managing the Employment Relationship				
Marketing Communications				
Buyer Behaviour				
Destination Management Sustainable Tourism				
Operations Research				
Service Quality Management in Tourism and Leisure				
Strategic Marketing Management				
e-HR and Knowledge Management				
Managerial Economics				



**Appendix 5(b): Tourism**

<b>Purpose of tool: Determine the TP, SP and CP of a unit to assess its “MOOCability”.</b>				
<p><b>Instructions</b>                  Complete all sections.                  Section A: Give a brief introduction of the curriculum                  Section B: Indicate the degree of TP(Teacher Presence), SP(Social Presence) &amp; CP (Cognitive Presence) required for a unit in terms of a proportion to total up to 10, for example a particular unit can be apportioned as follows                  SP2:TP5:CP3., thus the total is (2+5+3=10).                  TP: How much of the unit needs the guidance of a teacher                  CP: How much of the unit can be learnt independently by the learner                  SP: How much of the unit depends exclusively on learning from peers                  An effective way of going about it is to first see how much can be done independently first (CP).                  Section</p>				
<b>Section A: The curriculum</b>				
<p>3. Who designed it?                  4. Description of the students                  d. Average age:                  e. Educational System (western or eastern):                  f. Entry requirements:</p>				
<b>Section B: Apportion units –TP, SP, CP (1 to 10)</b>				
	Can be online? (Yes /No/Partly)	TP	SP	CP
Introduction to Information Technology				
Accounting for Tourism & Hospitality				
Economics for Tourism & Hospitality Managers				
Tourism, Leisure & Recreational Law				
Principles of Tourism Management				

Organisation and Management				
Statistics for Tourism and Hospitality				
Marketing For Tourism & Hospitality				
Human Resource Management for the Service Sector				
Sports and Recreation Management				
Operations of Services Cultural and Heritage Tourism				
Financial Management in Tourism & Hospitality				
German for Tourism and Hospitality				
Italian for Tourism and Hospitality				
Sustainable Tourism				
Service Quality Management in Tourism, Leisure & Recreation				
Events Management				
Research Methods for Tourism and Leisure				
IT Applications in Tourism & Hospitality Sectors				

Tourism Planning				
Transport & Travel Management				
Strategic Management for Tourism, Leisure & Recreation International Tourism				
Dissertation				
Practicum				
ELECTIVE MODULES				
Outdoor Recreation & Leisure Programming				
Destination Management				
Resort Management & Wellness Tourism				

## Appendix 5(c): Education

<b>Purpose of tool: Determine the TP, SP and CP of a unit to assess its “MOOCability”.</b>				
<p><b>Instructions</b></p> <p>Complete all sections.</p> <p>Section A: Give a brief introduction of the curriculum</p> <p>Section B: Indicate the degree of TP(Teacher Presence), SP(Social Presence) &amp; CP (Cognitive Presence) required for a unit in terms of a proportion to total up to 10, for example a particular unit can be apportioned as follows            SP2:TP5:CP3., thus the total is (2+5+3=10).</p> <p>TP: How much of the unit needs the guidance of a teacher</p> <p>CP: How much of the unit can be learnt independently by the learner</p> <p>SP: How much of the unit depends exclusively on learning from peers</p> <p>An effective way of going about it is to first see how much can be done independently first (CP).</p> <p>Section</p>				
<p><b>Section A: The curriculum</b></p> <p>5. Who designed it?</p> <p>6. Description of the students</p> <p>g. Average age:</p> <p>h. Educational System (western or eastern):</p> <p>i. Entry requirements:</p>				
<b>Section B: Apportion units –TP, SP, CP (1 to 10)</b>				
	Can be online? (Yes /No/Partly)	TP	SP	CP
Subject specific units				
EDUCATION & CURRICULUM STUDIES CORE				
Pedagogy				
Curriculum Studies, Assessment & Evaluation				
Research Methodology				
Teaching the Adolescent: Psychological Perspective				
OTHER CORE MODULES				
ICT in Teaching				
Communication and Language Skills				
Teacher Leadership				

## Appendix 6: Indicative questions to Educational Leaders and Policy Maker

<p>Have you heard about MOOCs?</p> <p>Yes. What do you think is the current situation of MOOCs in Mauritius?</p> <p>No. Well it stands for Massive Open Online Courses.....</p>
<p>If you were to look for information on MOOCs or even online learning, where would you try to find information from?</p>
<p>What is the future of online learning in Mauritius? Any concerns?</p>
<p>How do think MOOCs can help?</p>
<p>How would we fund such a project? (business models)</p>
<p>What do you think are the potential barriers?</p>
<p>What information would the decision makers need?</p>
<p>Who do you think would be the key stakeholders – who has a role in decision making, or an interest in the outcomes, or might be concerned about direction of travel? – this can be researched by myself.</p>
<p>What (kinds of information) would help them:</p> <p>Make decisions?</p> <p>Formulate policy?</p>
<p>What are their sources of information? Advisors? Research? Commercial concerns?</p>
<p>What business model are they assuming? What other models might be better?</p>
<p>What are the key drivers – ‘concerns’ ‘the problem’?</p>
<p>What are the key enablers?</p>
<p>What are the barriers?</p>

## Appendix 7: Community of Inquiry Elements

Community of Inquiry Coding Template		
Elements	Categories	Indicators (examples only)
Cognitive Presence	Triggering Event	Sense of puzzlement
	Exploration	Information exchange
	Integration	Connecting ideas
	Resolution	Apply new ideas
Social Presence	Emotional Expression	Emotions
	Open Communication	Risk-free expression
	Group Cohesion	Encouraging collaboration
Teaching Presence	Instructional Management	Defining and initiating discussion topics
	Building Understanding	Sharing personal meaning
	Direct Instruction	Focusing discussion

Community of Inquiry: Garrison, Anderson & Archer (2001:4)

## **Appendix 8: Interview Transcripts Examples (Students)**

### **22: Student 22 from the class “Education”.**

#### **SR: The researcher**

SR: Hello. How are you?

My name is Sharvaani. I am conducting a research on MOOCs. Have you heard of MOOCs?

Well they are free online courses. You only need to have an internet connection. The courses are delivered by world known universities on platforms such as Coursera, EdX and Udacity. The key differences between a MOOC and any other online course are that it is Open and hence Massive.

The purpose of the interview is to determine your perception of what is important on an online course. I want to see how MOOCs can be useful to Mauritians. It is completely confidential and there will not be any information given that may identify you as a respondent. Also, if you want, I will give you a copy of the transcript before using it.

Have you ever studied online?

22: Yes I have studied online before. On the computer sorry internet you mean, isn't it. Yes I have.

SR: What was the name of the platform?

Do you remember?

(prompts may be given such as Moodle, Blackboard, Sakai, WebCT, Coursera, Udacity, EdX,...?)

22: Uni platform. It was on the platform that we use for uni. Do not know the name.

SR: How long was the course for?

22: short course we did. it was a short course that we did, not too long.

SR: Describe your experience.

22: hmm we had exercises to do to achieve. It was good. I think. Okay. So we did what we had to do. See I would prefer when the teacher is in the class and we are all in the class. We are together discussing. I think it is called face to face.

SR: why?

22; I want to see who I am talking to not through a screen ta. I want to see my teacher and the other students as well. face to face to whom I am talking and learning from.

SR: How much social interaction did you have? Tell me about it?

22. I did not have a lot at all what you call it? Social interaction. haha. I was not interested.

SR: why?

22. for me it is a waste of time. Waste of time! We do what? Discuss, discuss. What if we were wrong when we were discussing? Then what? We are wasting our time. You get it right?

SR: How valuable was it?

22. The teacher has to be there. Otherwise we are wasting out time. For me the teacher has to be there. I told you. Otherwise what we are doing is wasting time. What if what we are saying is wrong? I told you before.

SR: Were there any problems?

22. the others they were talking nonsense sometimes. They were saying things that did not make a whole lot of sense. As I said they wasted their time.



SR: How did you develop your learning on the online course/other form of learning?

22. from the slides and articles I had to read

I learnt from the slides I learnt from the articles. They were there for us to read.

SR: What aspects were important to you?

22: my research based on the instructions given

they gave us some instructions about the research that we had to do. I did the research and for me that was important. I worked on it.

SR: How was your teacher "seen" on an online course?.....Was it only through interactions?

22. through the videos. And the instructions

Haha. I saw the teacher but it was through videos. Oh yes. Also the instructions, I think the teacher gives.

SR: How was his/her presence important to you on an online course?

22. I don't think that we can do anything without the guidance of a teacher

The guidance of the teacher is very important. We cannot achieve without it.

SR: What else could your teacher have done to help you?

22. the teacher could give more feedback and more often ta. I need this. I want to go fast but feedback would come slowww.

SR: What would motivate you to do an online course?

22: If the course was to be useful for my career and if the course was cheap

SR: What kind of courses would you find useful as online ones? E.g. introductory courses to a particular qualification, prerequisite courses, literacy, numeracy, ICT courses,.....?

22: yes, these skills that I need such as how to write academically. I want to be able to write in an academic manner. Mo envie conner. These kinds of skills I would want to do. Then if it is online then I will like to do.

SR: What free online course would encourage you to study further? This and the above brought similar responses. Therefore, this question was removed.

22: same as what I said.

SR: Give me a couple of examples of technology that is easy to use? Why?

22. my mobile. My laptop . I play games.

## **Appendix 9: Interview Transcripts Examples (Policy Maker: DH)**

### **DH: Senior role in the Ministry of Education**

#### **SR: The researcher**

SR: Good morning Sir. Thank you for having me. I just want to start with the key of my interview: MOOC. Have you heard about MOOCs?

DH: No. I have not. But from our last conversation, it seems to be some kind of online learning?

SR: Yes Sir. MOOC stands for Massive Open Online Courses. They are free and they are held by prestigious universities.

DH: if they are free, then how valuable are they?

SR: they have different values to different individuals and institutions. Some take MOOCs as an initial course, some take them just for the knowledge. And for the institutions, they get people to come to their organisations.

DH: Like a marketing thing?

SR: sort of. But it also helps the society.

DH: hmm we can talk about how this will happen Shaivi. But let us start with your questions.

SR: Yes Sir. Well my questions would indeed then be how can something which is free and then can hold massive number of students be helpful to Mauritius.

DH: ohh. You turned my question on me! Laugh. Okay Shaivi, let us explore this. You say that it is free. Of course then it means that more people can benefit from it. Now the question is what does the country need at the moment. More literacy? Some courses that will increase their employability? Maybe accountancy courses, maybe accountancy

softwares, what else. Let me see, other functional skills, anything on farming, what about transferable skills, soft skills, bookkeeping, there would be more. But why would the government do that and how? The government would need to do it with another institution, maybe. Oh yes also, to address public health issues.

SR: If you were to look for information on MOOCs or even online learning, where would you try to find information from?

DH: First of all, I would have a team who will “google” it I suppose. We would need to look at the history of Mauritius and this would mean looking at old reports such as when online learning was introduced and then what created barriers at those times. We then need to see if these barriers exist still. Also, we would look into what other similar countries are doing, their reports and what research is saying.

SR: what do you think can be the barriers?

DH: internet access can be one. Yes Mauritius is much better now in terms of internet access. But I think that it will be better if people come to a particular spot to work on the online course.

SR: anything else

DH: let me see now. Oh of course, Shaivi if you were to do something like that we need to see the cost, and if we are able to bear it. If we are forming the courses, then it will cost us more than if we just use the ones on the platforms that you told me last time.

SR: What is the future of online learning in Mauritius? Any concerns?

DH: We talked about what online learning can do for the public interest. Concerns we said the cost and internet access.

SR: what kind of costs?

DH: legal fees, cost of researching, admin costs, cost of having teachers

SR: so how can such a project be funded.

DH: see now this becomes interesting. Have you spoken to any university yet?

SR: briefly to one and I am going to talk to him soon.

DH: See how helpful MOOCs can be for them. What I think is that a collaboration with a university will be good.

SR: What information would the decision makers need?

DH: well they will need to know 2 basic stuff: the cost and benefit, public benefit, long term sustainability, whether they can quantify the value gained. The tools that are needed, man power, how much time and money is it going to need to be maintained. Any legal implication would have to be seen as well intellectual property and copyrights and such things. They will want to know who will be affected, who will be targeted as possible consumers, how is the information going to go to them. We also need to see the international influence: what happened where.

SR: thank you Sir. Where would they get such information.

DH: from research government based and university research.

SR: so in summary what would drive such an endeavour.

DH: I would say the public benefit. See in Mauritius now, there is a lack of trained people. People come out of universities with degrees but no training. Employers are complaining that degree holders do not know how to do basic office stuff. So education has been very academic. Plus, other people who do not work because of lack of basic skills, they can increase their employability. And what can stop this project would be the cost really. So

Shaivi be careful when you talk to other people about this project. The fact that we have the infratruture and the skilled people would ensure that it is possible.

SR: would you say that these will be the enablers?

DH: Yes I would.

SR: Thank you Sir. And thank you for your time.

DH: you are welcome beti (my daughter).

End of interview

Who do you think would be the key stakeholders – who has a role in decision making, or an interest in the outcomes, or might be concerned about direction of travel? – this can be researched by myself.

## **Appendix 10: Interview Transcripts Examples (Educational Leaders)**

### **Appendix 10(a): An official from a Distance Learning Institution (M)**

**M: The official from a distance learning institution (implemented MOOC with Moodle)**

**SR: The researcher**

SR: what do you think about online learning in Mauritius?

M: first about online learning in general and not about in Mauritius in particular it is an avenue which opens up opportunities for people who want to learn not necessarily at first degree for example but those who are in a lifelong learning process. And i think that it is the best thing which has happened to education. People can continue to study if they want to and not give up on their dreams. If I take my own example I remember when I was at uni: well online learning is a good idea in the sense that it gives the student the opportunity to learn without going physically to the institution, it saves time and energy and then money also.

If I take my own example, you know I remember when I was at school you know in secondary, you had to take books that were available in the libraries. We did not have anything else.

You did not have anything else and when I finished high school and I was thinking what I was going to do and which higher education I would like to go etc, then there were so many limits, mainly financial limits yea you could not just go somewhere and even at the university in my time there was not even the faculty of French or English at that time so there was not anything for me here. I was in languages so there was not anything for me here. You see so euh time has changed of course and but even then I mean even like last year late last year somebody whom I told about the MOOCs and who heard about my project contacted me to do the course. But he was too late but I told him about where he could go and find some MOOCs and he phoned back to say that he was following 3-4 courses at the

same time, I am so so happy that there is this opportunity, he is a clerical officer in a ministry somewhere and it kind of opened up his avenues. I think really that online learning is a big big thing that happened in education and specially in Mauritius where people cannot afford even the time to go to university even in a physical way so it can kind of sets the trend for a learning society yea and that's why I think also I initiated the project because that is what I wanted the ultimate goal is for us to become part of this learning community and so online learning for Mauritius that's it so and in hope that it opens up and grows bigger and bigger .

SR: then what is the situation of MOOCs in Mauritius at the moment

M: right now I am not really sure I cannot really say because my experience with MOOC introduction to Mauritius was in oct dec 2013 but as I have told you like for example this person who has jumped into the bandwagon of MOOC is continuing now and all those who following that MOOC when I kind of started speaking about it in mauritius. So all of them are continuing on their own now.

M: from what I have seen like euh like 95% of the persons that I spoke to and who came in the blended mooc, 95 or more than that, hadn't ever heard of that. So there is still a little group of these 5 or so % who have heard but they did not talk about it in an official way,

SR: people responsible about education in Mauritius know nothing about it?

M: I cannot say. But but there was not any MOOC being introduced in a formal way in a formal set up because all those who came or those who applied they have not most of them as I have said haven't heard about it.

SR: do you think that your institution would want to do its own MOOC



M: yea we started thinking about it last it last year. Well I know that the director wants to but of course you need time, you need you know you need to have time for that but I do not know what is on his mind but I know that the mentioned that he would like the institution to go into MOOCs.

SR: what would be the difference between the online courses at the university at the moment and then MOOCs

M: first the MOOCs as they are right now, they are free, completely free and our courses are not, right and for us it is mostly a blended mode because our courses are I would say distant education mode. So we give the manuals already prepared but then they do come for physical face to face tutorials on a very regular basis. So that is the blended way. It is not the MOOC way you see. And then we do give some other courses free but call them short courses which are employability skills but we give it to students who are already enrolled on a degree course with us you see. It is not like we have opened it up to everybody. We have not reached that level yet.

It cost a lot even for the online course. But if you say that it is free to a certain extent then I think that it would boost the number of students, it is going to motivate them to start those courses even if later on they have to pay. But they will have an idea and they will be used to the system it be easier for them to cope with but to start with if it is free, I think that it is a good idea for them. A good incentive

SR: hmm so that is an avenue isn't it

M: yes of course

SR: things like employability skills, functional skills

M: yea but we know that all the tertiary institutions euh I believe are you do need to survive also economically

SR: that was going to be my next question

M: so I think that is why nobody yet has really gone into giving everything freely

SR: but okay. There are different business models being used by MOOCs at the moment, for example they do course free, if you want certification you have to pay an amount of money

M: like EdX

SR: yes, coursera and udacity and they will tell you that if a university wants to use the resources of a particular resources of a university from the platform, they pay an amount of money. There is upgrading things as well, you pay an amount for free then you pay for the rest. Have we thought of a business model at the university here or not yet

M: here I am not aware in terms of MOOCs.

SR: okay. What is your opinion? What can work?

M: you know you have to look at this issue from several perspectives, like the first one would be at policy level, at government level, what does, for example, the state would like for the people. Let us say that the policy would be to empower the Mauritians and to create this learning society then I believe that there would be investment in that area.

Then you have to look at it from the perspective of a tertiary institution when you have to pay the salary of people you have to run the institution. So you need the money. So that is why

you can't afford to give courses like free MOOCs. Let us say even for starting one MOOC for free, well you need time you need to invest in terms of time, energy, resources for that. So I think that first it would have to be at government level.

SR: what kind of information do you think they will need, let us for example I want to bring forward a project for them. What kind of information do you think that they would want at government level. I mean the cost obviously, how is it going to help them.

M: it depends from which perspective you look at it also. Let us say that you want free education, free transport, free health. Let us say you want to do something which is really for the welfare state. Then maybe then it does not matter how much it costs

SR: we get funding

M: yea. So it all depends on which direction we want to go

SR: if we are talking in terms of the government, of course it will be welfare. Universities, they can think about if you open your courses all over the world, then your market increases

M: definitely yes I do believe that it is like a marketing tool for a tertiary institution.

: certification, advertisement, pay money to use the resources, the universities' research facilities to the students, they give them access to different resources, creates an incentive to write articles. The publisher (the university) will make money out of articles.

SR: isn't it. Like it is an incentive for people to come in the institution

M: and just an information not directly related to that, for example the government of Mauritius does offer scholarships for tertiary education institutions regionally for example Africa.

SR: Mauritius changed since I came last time

M: things are moving and quite quickly.

SR: what kind of information will be needed?

M: it is only about providing us with the access. Yea the universities will not have all databases but they can be the intermediary to provide databases to the students. This will motivate the learners and universities.

M: types of facilities the uni is offering, the cost (no hidden cost), the course is about , what are the benefits and what you expect from us and they need to be specific about what they require, assessment criteria.

SR: okay. I think that you answered many of my questions already. Hmm I do not know if this one you can answer, but I would certainly ask you to try to answer. We are talking about policies and how the government has their say, if it has a particular direction then all institutions will follow the same direction. So let's say if they were to adopt something like MOOCs where does the government get their sources of information.

M: no I would not know that really. Because there hasn't been much contact. I had the teachers to come to follow the course. There was not really a marked interest for what has been done. I believe they know, but ..

SR: maybe they do not know about their usefulness yet

M: but at the same when the teachers go back to school and they start to talk about it to their peers, colleagues, school leaders, inspectors, somehow it has to reach up the levels at the decision levels but like I know for example people have talked to me but in a very informal way you know. Like we heard what you have done and that the teachers have learnt so much but nothing in a formal level. But also maybe because before December like all the tertiary institutions were under ministry tertiary education and secondary, primary and pre primary were under the ministry of education and human resources you see so it was like 2 separate ministries. We have only one ministry of education now.

SR: if we were to introduce MOOCs, well you did already, what do you think would enable it? And what do you think would create barriers for it to succeed.

M: from my experience with this blended MOOC, first in terms of difficulties it was for those learners who never been on an online course before and some of them who were not even really familiar with anything that has to do with the internet. Like some very few but some did not even have an email address. Yea so just to give you an idea of the spectrum of the profiles of learners that you may be facing like those who were not accustomed at all with what they had to do with online learning and online communication and internet. And then you have on the other end those who are already IT people, IT familiar. So I believe that MOOCs are useful for those who are already IT familiar but for those who are at the other end of the spectrum. These are the ones who really need us to adapt the MOOCs as they come from Coursera and EdX so that they do have this face to face. But at the same time the group that I met for this MOOC, there were already versed with IT. But what I noticed that they said that they too benefitted from the blended mode. So it means that the blended mode really helps everybody mainly those who are not IT familiar but also the other group. The problem was when they were doing skype because normally the English that we speak at times was communication barrier. We can understand English, but it is not the same words and accent so at times there is a problem that they do not really understand what they

mean. And then the work that they were submitting was not really up to the expectations of the examiners. More guidance from the teachers would help. To tell you what they expect from the assignments. We need to think about what it will cost. We need to see the cost of creating and maintaining the course. Also the teachers that would be needed.

SR: yea so what are the things that would make it easier do you think?

M: the fact we have the blended mode so that they can come and meet other people, people meaning their facilitators and their peers. I think that's the rich part of the blended mode and it was what really helped when I looked at the MOOC participants, they were so happy for example even to share for example we had face to face session not only about experts coming to share but also about others coming to share what they did in class, just one aspect of a topic and it was such a big success, it was like everybody felt they belonged I think, like we all felt like we owned it. They were so much comfortable. It was not like we just came as participants as passive participants just waiting for people to tell them things and give them things. And sometimes one face to face sessions I would have like 10 who have volunteered. Because I would have 2 sessions per day, so I would have 5 in the morning and 5 in the afternoon to share whatever they wanted to share with their peers. I was surprised how people who were quiet online volunteered to talk! So it was really something which works.

SR: why do you think that people who were quiet online talked face to face?

M: I thought it was because they were not too sure how to use computers and also you know they are used to see people physically when they discuss. so...you know they are used to this.

SR: how is the wifi in Mauritius?

M: here it was most of the time okay. But you know I had a third group in Rodrigues. This was an issue, the internet was an issue because like for example our first face to face session, I had a group in a physical set up and the group from Rodrigues was listening live, from video conferencing and the internet broke down, first here but it was back to normal very quickly then it broke there. So they lost it, you see. So what I had to do was like record, video tape our face to face so that they could catch at least something but it was an issue for Rodrigues it was an issue like at least twice. Like another time the participants came and they never got to listen to anything because the internet just broke down.

SR: I did not think of Rodrigues. So do they participate a lot?

M: they were supposed to. Like the tutorials we had here they were supposed to have it parallel in a live way like sometimes the internet broke down and they could not get it live. They got it from audio or video. It was supposed to be synchronous but it did not work out, not always. So what I had to do was to record everything and put it on the Moodle platform so that they could get something.

SR: that would be the next best thing

M: yea

SR: do they have dial up or wifi?

M: well they have started to have wifi well at the centre where we met there was wifi there was always. But many rodriguan people have the dial up. Last year they were talking about fibre optic but I am not much has been covered.

SR: but in Mauritius mostly everywhere they have wifi

M: yea but not free. But I am not sure about what I said about Mauritius.

SR: there are different strengths.

M: yea.

SR: thank you very much.



**Appendix 10(b): Vice Chancellor (VC) of a University in Mauritius (YB)**

**YB: VC of a university in Mauritius**

**SR: The researcher**

Policy maker 2: VC of uni

SR: good morning Sir. Thank you for your time. First of all, have you heard about MOOCs?

YB: Yes I have. They are online course which are free.

SR: Yes indeed Sir. So what do you think is the current situation of MOOCs in Mauritius?

YB: People mostly do not know anything about them. Yes they know about online learning and open university courses. But MOOC per say is not known.

SR: okay Sir. If you were to look for information on MOOCs or even online learning, where would you try to find information from?

YB: well I will go online. It is very recent so mainly I would look at journals.

SR: According to you Sir, what is the future of online learning in Mauritius? And do you have any concerns?

YB: online learning is the alternative to face to face learning at universities. Online courses are taken by those who want to study in their own time and such courses are also less costly. For institutions such as this one, online learning is a bit of a threat. People will not come to us if they have the same thing online.

SR: then Sir how do you think MOOCs can help?

YB: will MOOCs not be a threat as well? It seems as though. But then if we think about it, the best way to compete is to adopt. I think we can use MOOCs to reduce the cost of our courses. Then more people can access it. Increase our market.

SR: But then would that not reduce your profits?

YB: Yes definitely in the short run. But it seems worthwhile to see if we use MOOCs and more students can have an initial access to our courses then more students would enrol. In the long run it may be more profitable. But we cannot just decide like this while talking. A cost-benefit analysis would have to be done. If your project helps in terms of the pedagogy that would suit Mauritians, then it may reduce the cost of "finding out" what is best for us.

SR: yes Sir. Then what would be the costs?

YB: see we have the different costs of creating, maintaining the courses. Then the usual costs of developing a course: materials, human resource. Then you say that you are developing a pedagogy Shaivi? We have to see the role of the teacher on MOOCs and how much it will cost. How would you fund this project?

YB: see the initial courses would be free, we will bear the cost. Then if students want further stages of the course they can pay. This cost will be lower than if they were to take the full course. We will be at an advantage and so will the student.

SR: would you consider a collaboration with the government?

YB: to do what? And why will they want to do so?

SR: well if it is in the public interest, they may fund some research.

YB: Yes yes, that is true. Hmm interesting. Why not?

SR: What do you think are the potential barriers?

YB: the potential barriers? Well internet access probably. And convincing the university that it is worthwhile. We need revenue models.

We also need to have appropriate accreditation and progression to new courses.

This would also help in the completion rates.

Other things would include authenticating the identity of the student. This would be needed when a payment is being asked for a progression course.

SR: What information would the decision makers need?

YB: well the committee would consider the stakeholders such as the students, teachers, parents, public (if public money is to be invested), the government, legal issues. Therefore, the information that the committee would need market research data, effectiveness compared to face to face, influence from competitors, feedback obtained from student surveys, is it part of innovation and continuous improvement, ease of use, the tools required, the pedagogy needed and evidence based research, return on investment (financial and human resource), the need to upgrade.

SR: what are their sources of information?

YB: I said: reports, research both primary and secondary. Your research is on MOOC pedagogy?

SR: Yes Sir

YB: Let us see what it brings to us.

SR: Yes Sir. Thank you very much for your time.

YB: Keep in touch Shaivi. I want to know what happens with your research. If you can do something that is helpful for us, we can see how we can collaborate. But then maybe you can do it here only.

SR: Okay Sir, I will certainly consider.

**Appendix 10(c): Director of a Higher Education institution (HB)**

**HB: Director of the Higher Education in Institution**

**SR: The researcher**

SR: Thank you for your time Madam. First of all have you heard about MOOCs?

HB: Yes I have Shaivi. It is to do with online courses. They are free isn't it Shaivi?

SR: Yes Mam. They are free.

HB: And you can have many students?

SR: Yes mam as many as you want. What do you think is the current situation of MOOCs in Mauritius?

HB: I do not think people know about it. A teacher at Open University did a course, a blended course, I think 2 years ago?

SR: yes mam, I have spoken to her.

HB: yes. So then I did not hear about it.

SR: okay mam. If you were to look for information on MOOCs or even online learning, where would you try to find information from?

HB: I would go online Shaivi. I would look for research, especially in developing countries, if possible African countries.

SR: why African countries?

HB: because I want to compare like to like. What would have happened in an African country is likely to happen here as well.

SR: What is the future of online learning and MOOCs in Mauritius? Any concerns?

HB: the future of online learning. Hmm. It is quite steady, I would say. It has a certain market that it targets, people who either cannot afford the time or money to go to universities.

In terms of concerns, I would say that mainly it would be about the accessibility of learning in Mauritius. Not everyone can access higher education despite good HSC (A'level) results, you know. That seems to be a waste to me.

SR: How do think MOOCs can help?

HB: you say that it is free. Then these people can access such learning. Maybe to get better employment or to get lower cost courses. I imagine that the universities do have like a progressive thing where the learners would have to pay for a certificate or any further course?

SR: yes mam, some universities have.

HB: this is possibly how funding is obtained I guess.

SR: what do you think are the potential barriers?

HB: Barriers? For an institution like mine, it will be the cost and the know how. We would need an expert who will be local. Also, the benefits to such a project would have to be clear for the students and the institution. I am not sure if we would create a course here in our institution. But we can deliver some of the courses online already. Maybe we can use these courses and provide an upgrade face to face one? This would be less costly for the students. If MOOCs are coming, we might as well embrace them and use them.

SR: yes mam. Then what information would the decision makers need?

HB: the cost and benefit to each of them. Simple decision making concept Shaivi. Who will be the decision makers? In my institution it will be myself and by advisory board. They will

need to know if this is something which is worthwhile to put in our current profile. We need to know how computers are used in Mauritius maybe by age? The speed of internet by region?

SR: what would be the costs, you think?

HB: it depends how you are introducing. See if you take the existing moocs, you need to see how they fit in the curricula. Then this will cost us in terms of the experts. We may need facilitators who are local. If we create then there are usual costs such as legal and admin and human resource.

SR: What are their sources of information?

HB: Advisors, our experts and of course research, including yours Shaivi. The fact that we have to computers and high bandwidth here will of course help.

SR: what can be the barriers mam?

HB: barriers? For me the cost and yes the ability of the potential students to navigate round the online course.

SR: thank you mam

HB: you are welcome Shaivi. Email me the transcript please.

## **Appendix 11: Discussion with Teachers**

### **Appendix 11(a): Teacher 1 (JT)**

#### **JT: The teacher**

#### **SR: The researcher**

SR: thank you for your time.

JT: you are welcome. Thank you for your help as well.

SR: Please talk to me about your experience

JT: Quite interesting Shaivi. Well the course was a short one, only 2 weeks. But the information given online was massive. It was so sequential and in order. The students said that they found it easy to follow.

SR: anything that was difficult for you and the students?

JT: well the students were not talking to others so much Shaivi

SR: others?

JT: well the international people. You know, that would have helped them so much! They just were discussing among themselves and asking me all the time about my opinion.

SR: was that difficult for you?

JT: no not difficult. It is just that this is such an opportunity to explore the minds of others. What do they think? How do they connect the learning dots? But they kept reverting back to me.

SR: Do you think that this is bad?

JT: no no. Not bad. But this is a chance for them. Anyways, I cannot expect them to change straightway. But it is a good experience.

SR: Was the MOOC useful?

JT: definitely! It is free! We could use some courses. But we have no control upon when they are being delivered and their learning outcomes. Probably they follow the learning outcomes of some other universities. To be fair we do follow UK educational system.

SR: so you think that the learning outcomes will be similar.

JT: I think so. Well the ones for the course we did were.

SR: anything else you want to add?

JT: just this, when can such courses be delivered from our institution? I think we can have so many more students if this happens and think of the learning? Oh my God. That would be amazing.

SR: I cannot tell you when. But i am working on a pedagogy that would suit Mauritian learners. Then i would bring my idea with the information that decision makers need, if I can. We will then see.

JT: well done Shaivi. Keep me informed.



## **Appendix 11(b): Teacher 2 (FD)**

### **FD: Teacher2**

#### **SR: The researcher**

SR: hello. Thank you for being here and also for helping me.

FD: it is a pleasure. Thank you for helping me with my work.

SR: no problem

So this is an open discussion. Please talk to me about your experience with MOOC

FD: well to start with it was easy to access. For myself it was the first time. I had to go online and register you know to help my students.

The resources are very good and advanced. The discussions were easy to use for me. My students were asking me questions when they were stuck. I could not always be there though.

SR: were they going only when you were there?

FD: no no. only the first time. I wanted to show them how to use it. Then they were okay.

They did want me to be there, they kept saying in class. So I tried to participate in their discussions.

SR: was it helpful?

FD: yes it was. You know you get to learn from others. I think that is really good. The students go their horizons widened you know. That is so good.

SR: any problem for you or your students?

FD: For me not really just that I had to try to be the "expert". The students were okay. I think that they enjoyed it and always talked about it in class.

SR: do you think that this is something that the uni would like to do?

FD: Shaivi I think that they might. But it depends on the cost okay. The way that you did was fine as that did not cost anything. If we were to do a MOOC, it will cost right? Then VC will want to know the benefits.

SR: true. Okay. Anything that you would like to add.

FD: just thank you. And do keep me in the loop!

SR: will do

**Appendix 11(c): Teacher 3 (GK)**

**GK: Teacher 3**

**SR: The researcher**

SR: Thank you for being here

GK: Shaivi I do not have much time. You know I have load to assess. And thank you for helping me in the assessment but there is still a lot. I can give you only a few minutes.

SR: no problem. Whatever you can will do.

Just tell me about your experience.

GK: oh it was good, I think that this MOOC of yours has potential. The students seemed to enjoy. But it is time consuming for me because I had to be with them on top of doing my other stuff.

SR: why did you have to be with them?

GK: well they need to know if they are doing well, isn't it? They needed my help. But you know, the students from the other countries had very good ideas. The educational systems are so diverse.

SR: do you think that this is something that would interest your department?

GK: what MOOC?

SR: yes please

GK: yes why not. See Shaivi, if it replaces a few sessions, it is better and cheaper. I would advise you to check the cost though.

SR: any problem that you had?

GK: there on the MOOC? Oh it was okay. Just the students kept talking among themselves and did not branch out too much. Next time I will try to encourage them to do so. I don't think that they will change overnight!

SR: next time? So you want to do another one?

GK: yes I told you it is good if it replaces some of my sessions. That's it Shaivi I need to go.

SR: Thank you. No problem

## Appendix 12: Ethics Approval



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Miss Sharvaani Ramkissoon  
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6<sup>th</sup> February 2014

Dear Sharvaani

### Research Degree Registration

I am pleased to inform you that at the 21st January 2014 Research Degree Committee, acting on behalf of Academic Board, it was agreed that you may be admitted to candidature for the degree of Master of Philosophy with the possibility of transfer to Doctor of Philosophy, full time, at the University of Bedfordshire. This follows approval by the Research Institute on 13th December 2013

The details of your registration are:

**Candidate:** Sharvaani Ramkissoon

**Student ref:** 1223074

**Title of Programme of Research:** A comparison of the learners' experience on Moodle and MOOC regarding teaching presence

**Effective Date of Registration:** 14th October 2013

#### Supervisory Team:

Director of Studies: Dr Jenny Gilbert

External Advisor: n/a

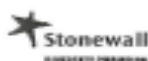
Second Supervisor: Prof Marilyn Leask

**Collaborating Establishment:** Not Applicable

The standard programme length for a full-time overseas PhD<sup>1</sup> student is generally 3.5 years. You should therefore aim to submit your thesis by 11<sup>th</sup> May 2018 which is three months prior to the 3.5 year end date thus allowing time for your viva to take place.

Please note that the maximum period of registration for a full time candidate for the degree of PhD is 4 years. The full fee is due until such time as you submit your thesis.

<sup>1</sup> Please note that time schedules for a Master of Philosophy are shorter. Please consult the Research Degrees Handbook.



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Vice-Chancellor  
Bill Ramwell

Your attention is drawn to the requirement that all research degree candidates complete an annual monitoring report and training needs analysis form, which must be submitted to the Research Graduate School on time.

You are reminded that, if you wish to adjust your registration in any way (e.g., to alter your programme, to change your supervisor, to transfer to PhD, etc.), you should complete the appropriate form, which is available from the Research Graduate School site in BRED. Additionally, you should notify the Research Administrator in writing of any change of address.

Please check that the information which appears in this letter is correct, particularly that your name appears correctly, as this will be printed on your graduation certificate.

I should like to take this opportunity to wish you well in your studies at the University of Bedfordshire.

Yours sincerely



Ms Jenny Jenkin  
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cc: Dr Jenny Gilbert