

**LECTURERS' PERCEPTIONS AND EXPERIENCES OF OPEN EDUCATIONAL  
RESOURCES IN TEACHING AND LEARNING**

by  
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## DECLARATION

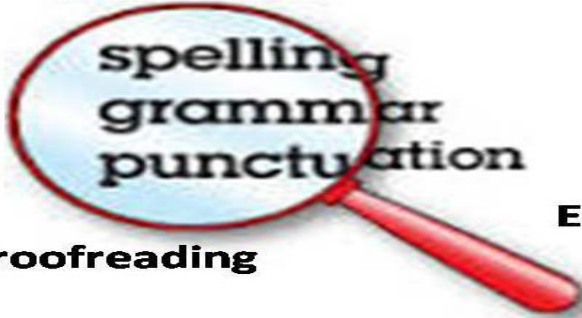
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I convey my sincere thanks and gratitude to the following people:

God Almighty for His guidance and unwavering support. There were times when the going was tough and I would draw strength from Mary Mary's song.

*There will be mountains  
that I will have to climb  
and there will be battles  
that I will have to fight  
but victory or defeat  
it's up to me to decide  
but how can I expect to win  
if I never try? (Mary Mary 2000).*

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*I just can't give up now  
I've come too far from where  
I started from  
Nobody told me  
The road would be easy  
and I don't believe He's brought me this far  
to leave me (Mary Mary, 2000).*

## **ABSTRACT**

Teaching and learning in the 21<sup>st</sup> century has undergone changes that have been brought about by a number of innovative tools. Information Communication Technology (ICT), for example, has assisted in many ways to enhance teaching and learning by allowing for the integration of Open Educational Resources (OERs). Although the concept of OERs was coined in 2002, there are different views on why such educational resources have not been widely embraced as the solution to the lack of free, copyright free, relevant and high-quality educational resources in Higher Education Institutions (HEIs).

On the one hand, these mixed views with regard to the integration of OERs in teaching and learning in HEIs are coming from the lecturers who are sceptical and do not trust that such educational resources may have an impact on their daily activities. On the other hand, the long-held belief pertaining to the superiority complex of the copyrighted educational resources in comparison to the freely available OERs continues to be a bone of contention in a number of HEIs. The uneasiness surrounding the abandonment of traditional ways and the difficulty of embracing change are also contributing factors that emerge from every discussion on the integration of OERs in teaching and learning.

This study sought to gather the perceptions and experiences of some lecturers from the University of the Free State (UFS) with regard to the integration of OERs in teaching and learning.

The study is informed by an interpretivist paradigm that falls within discursive qualitative research. It is also centred on the Knowledge Management (KM) processes model that consists of knowledge discovery, knowledge capture, knowledge sharing and knowledge application (Becerra-Fernandez & Sabherwal 2010:56).

The investigation consisted of semi-structured interviews conducted with eighteen selected lecturers who met the specified criteria. The findings from this case study indicate that there is still a lack of awareness among lecturers on what OERs are or how they can be integrated into teaching and learning. There is also evidence of the

sporadic usage of OER principles by lecturers in their daily teaching and learning activities. Many of the lecturers who responded showed a willingness to participate in initiatives that would lead to the development, promotion and implementation of OERs in teaching and learning at the UFS. The KM processes model has also revealed that, although not inadvertently, lecturers acknowledge and can identify, at various levels, with the 5Rs principles of OERs. The poor presence of the KM processes is an indication that OERs need to be properly introduced to solidify their usage and integration in teaching and learning at the UFS.

## OPSOMMING

In die 21ste eeu het onderrig en leer veranderinge ondergaan wat veroorsaak is deur 'n aantal innoverende instrumente. Inligtingskommunikasietegnologie (IKT), byvoorbeeld, het in baie opsigte bygedra tot die verbetering van onderrig en leer deur ruimte te maak vir die integrasie van Ope Opvoedkundige Hulpbronne (OOH). Alhoewel die konsep van OOH in 2002 geskep is, is daar verskillende beskouings oor waarom sulke opvoedkundige hulpbronne nie wyd aanvaar is as die oplossing tot die gebrek aan gratis, kopieregvrye, relevante en hoëgehalte opvoedkundige hulpbronne in hoëronderriginstellings (HOL's) nie.

Aan die een kant word hierdie gemengde beskouings ten opsigte van die integrasie van OOH met onderrig en leer in HOL's geopper deur die dosente, wat skepties is en wat nie vertrou dat sulke opvoedkundige hulpbronne 'n impak op hul daaglikse aktiwiteite kan hê nie. Aan die ander kant bly die langdurige opvatting ten opsigte van die meerderwaardigheidskompleks van onderwys hulpbronne met kopiereg in vergelyking met gratis OOH 'n twisappel binne 'n aantal HOL's. Die ongemak wat heers rondom die agterlating van tradisionele metodes en die uitdaging van verandering is ook bydraende faktore wat voortspruit uit elke bespreking van die integrasie van OOH in onderrig en leer.

Hierdie studie het onderneem om die persepsies en ervarings van enkele dosente aan die Universiteit van die Vrystaat (UV) ten opsigte van die integrasie van OOH in onderrig en leer, op te teken.

Die studie word besiel deur 'n interpretivistiese paradigma wat binne diskursiewe kwalitatiewe navorsing val. Dit is gesentreerd rondom die prosesmodel van kennisbestuur (KB), wat bestaan uit kennisontdekking, kennisvaslegging, kennisdeel en kennistoepassing (Becerra-Fernandez & Sabherwal 2010:56).

Die ondersoek het bestaan uit semi-gestruktureerde onderhoude, wat gevoer is met agtien geselekteerde dosente wat aan die gespesifiseerde kriteria voldoen het. Die bevindings uit hierdie gevallestudie dui aan dat daar steeds 'n gebrek aan bewustheid onder dosente bestaan oor wat OOH is of hoe dit in onderrig en leer geïntegreer kan

word. Daar is ook bewyse van die sporadiese gebruik van OOH-beginsels deur dosente in hul daaglikse onderrig- en leeraktiwiteite. Baie van die dosente wat geantwoord het, was gewillig om deel te neem aan inisiatiewe wat sou lei tot die ontwikkeling, bevordering en implementering van OOH in onderrig en leer aan die UV. Die prosesmodel van KB het ook onthul, alhoewel nie onbedoeld nie, dat dosente in staat is om, op verskeie vlakke, die 5R-beginsels van OOH te identifiseer en te erken. Die swak teenwoordigheid van die KB-prosesse is 'n aanduiding dat OOH deeglik voorgestel moet word om hul gebruik en integrasie in onderrig en leer aan die UV vas te lê.

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## LIST OF ACRONYMS

CC	Creative Commons
DHET	Department of Higher Education and Training
HEIs	Higher Education Institutions
ICT	Information Communications Technology
KM	Knowledge Management
L3T	The textbook on learning and teaching assisted by technology project
MIT	Massachusetts Institute of Technology
MOOCs	Massive Open Online Courses
OCW	OpenCourseWare
OJS	Open Journal System
OERs	Open Educational Resources
OSI	Open Source Initiative
SAIDE	South African Institute for Distance Education
UNISA	University of South Africa
UNESCO	United Nations Education, Scientific and Cultural Organization

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## CHAPTER 1

### ORIENTATION TO THE STUDY

#### 1.1 INTRODUCTION

Many higher education institutions (HEIs) find themselves in the midst of transformation which is influenced by global, as well as teaching and learning research trends (Department of Higher Education and Training, 2013:1; Siemens & Tittenberger, 2009:1). These changes are both conceptual and technological in nature (Siemens & Tittenberger, 2009:1). In response to these trends, new and relevant concepts are being created to meet the demands of the knowledge economy. Hence, lecturers are expected to introduce new ways of teaching in alignment with these new trends; for instance, through the use of e-learning (Siemens & Tittenberger, 2009:1).

E-learning refers to:

[A]ny form of teaching and learning which uses digital materials such as tutorials, online readings, simulations and performance support applications which incorporate a combination of instructional models, personal or organisational goals (Clark, 2014:874).

E-learning has broken boundaries which prevented teaching and learning resources from being offered equally and freely across the world (Haythornthwaite, Andrews, Fransman & Meyers, 2016:9). For instance, the Open Educational Resources (OERs) movement advocates for the use and modification of learning resources in teaching and learning.

According to the United Nations Education, Scientific and Cultural Organization (UNESCO) (2015:12), OERs are:

[O]pen digital publications of high quality materials organized as courses that include lectures, related reading materials, snapshots of discussions,

assignments, evaluations, and so on, used in academic environments such as universities, training institutions, schools and colleges.

What distinguishes OERs from other resources is that they are freely accessible, without legal requirements (South African Institute for Distance Education [SAIDE], 2014:3). SAIDE (Ibid) further emphasises that OERs are not synonymous with online learning in that they are also available in offline formats such as the CD-ROM.

Higher Education Institutions hold various views regarding what OERs are and their role in teaching and learning (Allen & Seaman, 2011:24). In some institutions, OERs are not considered to be teaching and learning materials, whereas others are willing to integrate them into the curriculum (Ibid). Despite varying levels of OER usage, the commonly cited reasons for non-usage include unavailability or difficulty in accessing them (Ibid).

The introduction of the World Wide Web (www) to the public in the early 1990s by Tim Berners-Lee revolutionised the Information and Communication Technology (ICT) industry (Griset & Schafer, 2011:353). Berners-Lee conceived an idea which led to the creation of an ICT system which has the ability to simultaneously connect two or more computers anywhere in the world (Ibid). In agreement with Berners-Lee, OERs are regarded as an answer to the universal call for educational resources to be considered as public goods (Ibid).

Furthermore, institutions, which include the Massachusetts Institute of Technology (MIT), heeded the call and are now offering OER courses which range from the sciences to the liberal arts (UNESCO, 2015:12-13). The OER movement endeavours to spread its advocacy programmes across the world. The Cape Town Declaration confirms that 'educators worldwide are developing a vast pool of resources on the internet, open and free for all to use' (McGreal, Kinuthia & Marshall, 2013: xv). Based on the above declaration, research on emerging technologies indicates that there is a symbiotic relationship between technology and pedagogy in that technology acts as a sculptor of educational practices whereas educational practices assume a moulding role with regard to the use of technology (Veletsianos, 2011:41).

## 1.2 BACKGROUND

With reference to article 26 of the Universal Declaration of Human Rights, human beings are entitled to education and, in addition, 'technical and professional education shall be made generally available' (United Nations, 1948). This declaration played a crucial and influential role in the formation of movements such as the OER movement whose objectives are aimed at challenging countries around the world to work towards the realisation of free access for all (Caswell, Henson, Jensen & Wiley, 2008:1). In this spirit, the pioneers of the OER movement which include the Massachusetts Institute of Technology (MIT), Carnegie, Mellon, Yale and John Hopkins University offer courses that vary from the sciences, technology, medicine, and engineering to the liberal arts. Besides the United States, which is currently a leader in OER initiatives, a number of countries are slowly embracing OERs (UNESCO, 2015:12-13). The OER movement across the world endeavours to spread and gain support from educators at all levels regarding the role played by OERs in the teaching and learning landscape.

The Cape Town Declaration (McGreal, Kinuthia & Marshall, 2013: xv) confirms that

Educators worldwide are developing a vast pool of resources on the internet, open and free for all to use. These educators are creating a world where each and every person on earth can access and contribute to the sum of all human knowledge. They are also planting the seeds of a new pedagogy where educators and learners create, shape, and evolve knowledge together deepening their skills and understanding as they go.

In addition, OERs have drawn the attention of independent and influential world bodies such as The William and Flora Hewlett Foundation (2010), which argues that OERs have the ability to level the teaching and learning playing field by providing equal access across the world. (McGreal, Kinuthia & Marshall, 2013:xvii).

Despite the unavoidable need to adapt to the new ways of teaching, in many institutions of higher education, capacity and ability to engage all of the ICT platforms is still seen as a challenge. Even if there is a willingness to embrace OERs, the lack of human resources and adequate funds to accomplish such dreams still stand in the

way of success in many institutions (Johnson, Adams-Becker, Cummins, Estrada, Freeman, & Ludgate)

With reference to the South African situation, in 2007, the Shuttleworth Foundation supported an Open Scholarship research project whose aim was to investigate the benefits that accrue from the use of digital and open dissemination models. The project further investigated the prevalence of OERs in South Africa (Hodgkinson-Williams, Paskevicius, Cox, Shaikh & Czerniewicz, 2013:34). Drawing from the above, the OERs are entering the teaching and learning landscape as a challenge to lecturers to investigate the role played by digital technologies in the creation, storage and dissemination of valuable knowledge. In addition, the presence of OERs has the potential to allow lecturers to compare their roles in relation to the current paradigms.

OERs are unique in that they are not associated with any specific paradigm or attached to specific learning approaches (McGreal, Kinuthia & Marshall, 2013: xv). They can accommodate and appeal to a variety of theories ranging from behaviourism, through constructivism to connectivism or any other available theory in the education sector (Ibid). This offers lecturers the freedom to mix and match multiple theories to suit their style of teaching (Ibid).

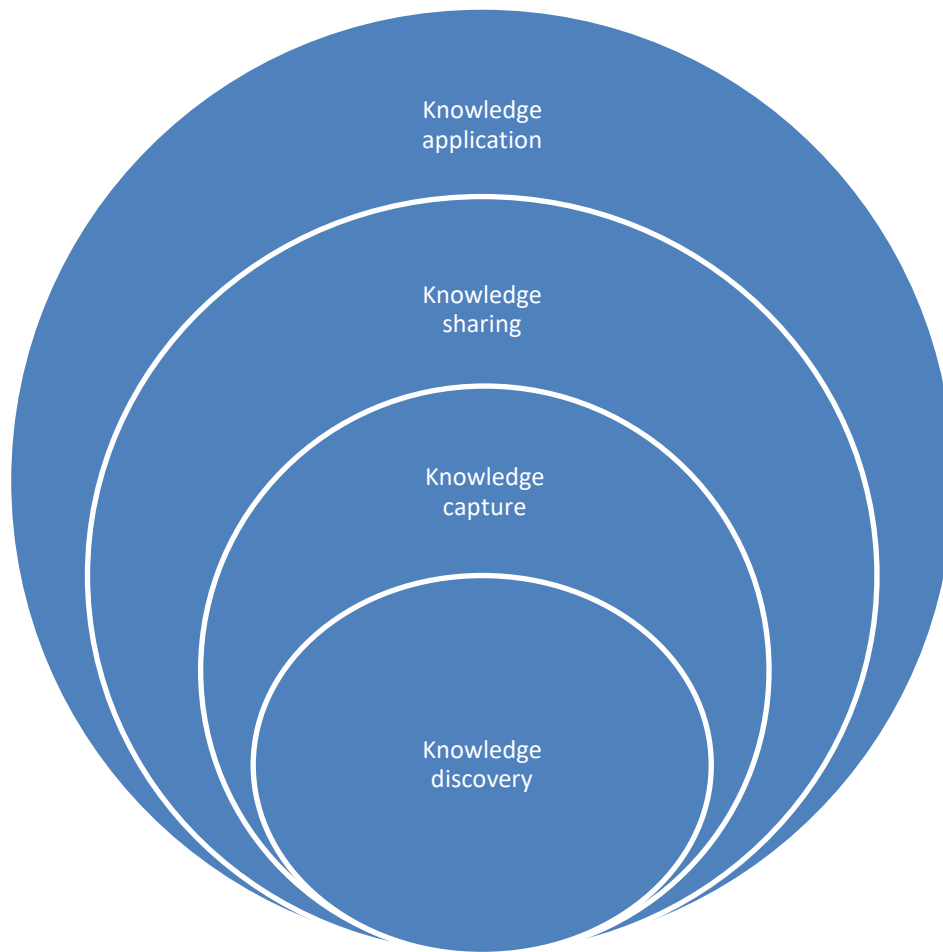
Research on emerging technologies has shown that there is a symbiotic relationship that exists between pedagogy and technology (Veletsianos, 2011:41). The two complement each other in that technology acts as a sculptor of educational practices whereas the latter assumes a moulding role with regard to the use or implementation of technology (Ibid). In the end, the beneficiary is a student who, through the provision of novel learner experiences, is exposed to a new world of student engagement (Ibid).

Even though, in a knowledge economy, more emphasis is placed on the creation and dissemination of information, there is little empirical research on Open Education Resources (OERs). Despite the fact that awareness campaigns are in place on a global scale, a great deal still needs to be done to advance the development and use of OERs in a number of teaching and learning platforms (Bliss, Robinson, Hilton, & Wiley, 2013:1). There is still much to be done to ensure that OERs reach all corners of the world.

Beyond the boundaries of the USA, which is currently a leader in OER initiatives, India has also embraced OERs, and its premier institutions that offer engineering have developed OERs which were introduced as National Programme in Technology Enhanced Learning (NPTEL) (Das, 2014:20). In addition, the Ekalavya Project, which was launched by IIT in Bombay, offered OERs in multiple languages spoken in India on a platform called Open Source Education Resources Animation Repository (OSCAR) (Das, 2014:20). This online interactive platform brings together experienced and newly-graduated educators, as well as students to come up with creative ways to improve teaching and learning content (UNESCO, 2015:12-13). This research is a product of an existing theory whose framework is aligned to a specific paradigm which has influenced the selected design and methodology.

### **1.3 THEORETICAL FRAMEWORK**

Maree (2012:34-35) argues that a theoretical framework creates a space for the researcher in which to formulate a clear plan, and to explain the type of paradigm chosen and whose results can be compared with existing theory. Hence, this study is informed by the interpretivist paradigm whose framework falls within discursive qualitative research (Henning, Van Rensburg & Smit, 2004:16). With reference to Figure 1.1, the study is modelled on Knowledge Management (KM) processes (Becerra-Fernandez & Sabherwal, 2010:4).



**Figure 1. 1 The knowledge management processes**

**Source: Becerra-Fernandez & Sabherwal, 2010:4**

Becerra-Fernandez and Sabherwal (2010:56) define KM as: '[P]erforming the activities involved in discovering, capturing, sharing, and applying knowledge so as to enhance, in a cost effective fashion, the impact of knowledge on the unit's goal achievement'. KM depends on these processes which assist in the discovery and capture of both explicit and tacit knowledge (Ibid). Once captured, such knowledge is shared among the interested parties who are later expected to apply it in order to advance the ideals of the knowledge economy (Ibid). For this study, the KM processes will form a framework around which the lecturers' experiences and perceptions with regard to the use of OERs in teaching and learning will be uncovered.

## 1.4 RESEARCH PROBLEM

Although South African universities have relatively good Internet services, there is little evidence of maximum utilisation of OERs during curriculum design (Czerniewicz, Small & Walji, 2014:124). Haythornthwaite *et al.* (2016:449) note that some lecturers are reluctant to explore and use digital educational resources as they do not see the potential of OERs in teaching and learning (Ibid). In addition, Johnson *et al.* (2013:10) suggest that some resist because they lack the requisite skills and techniques to integrate OERs into teaching and learning. However, there are lecturers who create a number of digital resources for themselves and their students (Hodgkinson-Williams *et al.*, 2013:33). These contextually-based digital resources are created and stored for personal use (Ibid). Unfortunately, such practices deny many students and fellow lecturers free access to valuable knowledge (Ibid) when not shared publicly.

The inconsistencies with regard to the use of OERs across the South African teaching and learning landscape have influenced the researcher to undertake this study on the perceptions and experiences of lecturers regarding the use of OERs in a specific South African university.

## 1.5 RESEARCH QUESTIONS

The primary research question is: What are the perceptions and experiences of lecturers at the University of the Free State (UFS) regarding the use of OERs in teaching and learning?

Subsidiary research questions are:

- What have been the developments in the field of OERs in higher education?
- What are the lecturers' perceptions and experiences regarding the use of OERs in teaching and learning at the UFS?
- How may the UFS strategise for the possible promotion, development and integration of OERs in teaching and learning?

## **1.6 PURPOSE OF THE STUDY AND RESEARCH OBJECTIVES**

The purpose of this study is to investigate the lecturers' perceptions and experiences regarding the use and integration of OERs in their teaching and learning.

In order to address the research purpose and questions, the researcher endeavoured to:

- Investigate the developments in the field of OERs in higher education by means of a literature review;
- Investigate and describe the UFS lecturers' perceptions and experiences regarding the use of OERs in teaching and learning; and
- Develop possible strategies for the promotion, development and integration of OERs in teaching and learning.

## **1.7 DEMARCATION OF THE RESEARCH**

When this study was conducted, the researcher had to, based on the research question, locate it within the body of knowledge. This study overlaps with Tight's (2012:55-57) key theme of teaching and learning in the higher education research domain.

## **1.8 CLARIFICATION OF CONCEPTS**

The following concepts are an integral part of this research, and understanding them as individual concepts will help to make sense of the research in its entirety.

### **Connectivism**

According to Siemens (2005:7), connectivism 'is a learning theory for the digital age'. It encourages learning to take place in an ICT-laden environment where theories are developed and shared across boundaries.

## **Creative Commons**

Creative commons is a worldwide non-profit organisation which was formed in order to allow for knowledge to be created, shared, and re-used with little or no legal obligations attached. It contains legal tools which are flexible enough to allow clients to re-use and modify them in a way that benefits both the original creator and the modifier (Creative Commons, 2001:1).

## **E-learning**

E-learning is digital learning which is conducted through a combination of methods, usually in a networked environment whose tools are used to bring about learning, (Haythornthwaite, Andrews, Fransman, & Meyers 2016:537).

## **MOOCs**

Massive Open Online Courses (MOOCs) can be defined as freely available lessons which can be taken by anyone as they can be accessed through the Internet. Although they usually carry no credit, the participants register for these in order to fulfil a specific requirement. MOOCs have a strong foundation laid on strong Internet connectivity and are aimed at allowing individual participants to embark on a journey of self-discovery (Commonwealth of Learning, 2013).

## **NVivo**

NVivo is a software program which was designed in Victoria, Australia, in order to provide research solutions to both qualitative and mixed research methods. It has the capability to assist researchers in organising, analysing, and uncovering valuable knowledge from qualitative data which has been obtained using data collection methods such as interviews or informal surveys (QSR International, 2016:n.p.)

## **Open Access**

According to UNESCO (2015:5), open access refers to the free and unbridled access to scholarly information. It also means giving users access to information which is unencumbered by the motive for financial gain. In addition, open access' literature is digital, online, free of charge and free of most copyright and restrictions. Open access is sometimes referred to as 'barrier free' access to information (Ibid).

## **Open Courseware**

This refers to an initiative by the Massachusetts Institute of Technology (MIT) to provide free access to courses by students, educators and self-taught learners. This initiative is based on a goal which, according to MIT is:

... to create a vast network of universities around the world offering open access to high quality educational material in a variety of different disciplines, in a variety of different languages, creating a global Web of knowledge that will improve education around the world (Koochang & Harman, 2007: 536).

## **Open Educational Resources (OERs)**

Open Educational Resources (OERs) are defined as free learning resources which are available on the Internet. They are openly licensed and available in the public domain where they can be used, or re-used at no cost. OERs are available in different formats, namely text (print or digital), audio, video, multimedia, or various combinations of these. OERs can be based on a single learning point, a lesson, series of lessons (a module), a whole course or even an entire programme of study. (Commonwealth of Learning, 2013:2).

## **Open Source Software**

Open source software is defined as software that is freely available for use, and shared by anyone. It is software whose developers are found across the world and is distributed under licences that meet the criteria set out in the Open Source definition, i.e. an Open Source Initiative (OSI), which champions for a society with free access to a variety of software programs that are educational in nature (Open Source, 1998:n.p.).

## **1.9 RESEARCH DESIGN AND METHODOLOGY**

Within the interpretive paradigm, a descriptive case study was chosen as a research design for this study, and its focus presented multiple realities as discovered from the viewpoints of the UFS lecturers (Henning, Van Rensburg & Smit, 2004:16).

A research design plays a critical role in guiding and helping to address both the primary and secondary research questions (Henning *et al.*, 2004:30). The previously-mentioned research questions focused on the way in which the lecturers at the UFS perceive the concept of OERs in teaching and learning. In addition, the researcher inquired about the individual lecturers' experiences with regard to the use of OERs in their daily teaching and learning routines. Therefore, the lecturers' viewpoints, as well as their personal practices, were the guiding points during the research process (Ibid).

### **1.9.1 Selection of Research Participants**

In this qualitative research, the focus was placed on collecting data on a naturally-occurring phenomenon with greater emphasis on what participants say than on written numbers (McMillan & Schumacher, 2014:31).

From the lecturing staff at the UFS, the initial target was eight lecturers who were invited to participate in the study, i.e. two lecturers from each of the following faculties: Humanities, Law, Health Sciences and Natural and Agricultural Sciences. The choice of the lecturers was based on the researcher's experience as an acquisitions librarian wherein the buying patterns indicate that lecturers in the Humanities and Law Faculties rely mostly on printed information resources whereas those in the Health Sciences and Natural and Agricultural Sciences Faculties prefer electronic information resources. The Faculties of Education, Economic and Management Sciences and Theology prefer printed information resources and were therefore intentionally excluded. The researcher therefore used purposive sampling where identifiable aspects were used to support the reasons for choosing a particular group of participants (MacMillan & Schumacher, 2014:152). At the end the response rate rose to 18 lecturers and all were included as participants.

The UFS lecturers were selected as they were not only information-rich but were also more suitable than students in terms of sharing their perceptions and experiences regarding the use of OERs in teaching and learning (MacMillan & Schumacher, 2014:152). The first criterion for selection stated that participants were expected to have been in the teaching and learning environment at the UFS for a period of no less than two years but no more than five years, while the second criterion requested

participants to have been teaching at the UFS for more than five years. The Teaching and Learning Managers in the selected faculties were requested to provide the researcher with a list of lecturers who matched the set criteria. Lecturers whose names appeared on the list were then invited via e-mail to participate in the study.

### **1.9.2 Data Collection**

In this study, in-depth, standardised, individual interviews were conducted with the participants all of whom were lecturers at the UFS (MacMillan & Schumacher, 2014:380). An in-depth interview is one of the most commonly-used forms of data collection in qualitative studies as participants are able to give their individual perceptions and experiences of the world around them and how it impacts their daily lives (Ibid:381). This is often referred to as a conversation with a purpose, where individual participants are expected to share their unique experiences or perspectives with the researcher (Merriam, 1998:72). In a standardised, open-ended interview, each participant was offered an opportunity to answer questions which were pre-ordered, thus limiting the influence of an interviewer (MacMillan & Schumacher, 2014:381).

The interviews were conducted on a one-on-one basis, and the lecturers were expected to share their individual and subjective views on the use of OERs in teaching and learning (Creswell, 2014:126). The interviews were semi-structured since the researcher made use of a self-constructed interview schedule containing topics and sub-topics presented in chronological order and in the form of possible probing questions which were guided by the participants' responses (MacMillan & Schumacher, 2014:382). The selection of participants for this study is based on McMillan and Schumacher (2014: 345)'s assertion that qualitative studies are uniquely carried over by interacting with participants in their natural settings. These individual interviews took place in the offices of the participating lecturers, which are their respective familiar environments (Ibid:345). The interviews were audio-recorded, and the audio files were transcribed after the interviews. These captured the complete conversations (Ibid:386), and enabled the interviewer to focus on the discussion rather than being concerned with manual note-taking.

### **1.9.3 Data Analysis**

In a qualitative approach, data analysis is described as inductive when data are divided into identifiable themes that assist in establishing relationships which lead to the formation of useful patterns (MacMillan & Schumacher, 2014:395). Data coding was used to dissect the data that had been collected into manageable themes (Ibid:399). The codes were combined to form categories in order to make sense of the individual codes (Ibid:405). Both the codes and the categories were linked to the components of the KM processes model, namely data capturing, storage, dissemination and application (Becerra-Fernandez & Sabherwal, 2010:56). The created themes were later used as sub-headings during the interpretation and presentation of findings (Creswell, 2014:53).

### **1.10 VALUE OF THE RESEARCH**

The findings of the study is informative to the UFS community about the usage of OERs in teaching and learning at their institution. The findings also informed the recommendations made regarding the strategies that can be used to focus on the development, promotion and integration of OERs in higher education. The study will enlighten those lecturers who may have no knowledge of OERs, and will be an affirmation to those already using them in their teaching practice.

### **1.11 ETHICAL CONSIDERATIONS**

In this study, the following ethical considerations were taken into account:

- Request for permission from the UFS Vice-Rector: Academic to conduct the study at the university;
- Submission of an application to the UFS Faculty of Education Ethics Committee for ethical clearance to conduct this study;
- A request seeking lecturers' informed consent to participate in the study;

- Assuring the participating lecturers that they would remain anonymous and that the information shared would be treated confidentially;
- Ensuring that the research data would be securely stored in protected digital files, and that the printed as well as handwritten information would be kept under lock and key;
- The researcher would take responsibility and be accountable during the entire study process (Creswell, 2014:73);
- The collected data would be an honest and truthful reflection of the responses of the participants, would only be used for this study and not be made available to a third party (Du Plooy-Cilliers, Davis & Bezuidenhout, 2014:273); and
- The participants' anonymity would be guaranteed in that their names would not be identified or associated with the collected data (MacMillan & Schumacher, 2014:152).

## **1.12 TRUSTWORTHINESS OF THE STUDY**

In any study, the trustworthiness of the results not only depends on the researcher's own determination, but also on testing to prove their accuracy and credibility (Creswell, 2012:259). The outcomes of any qualitative research rest heavily on the methods and objectives stated in section 1.12 (Mertens, 2010:254). Hence, credibility and accuracy should always form the basis to prove the trustworthiness of the results (Creswell, 2012:259). This is done to ensure that the researcher's opinions do not interfere with the research data and that the results can stand the test of time (Ibid). To avoid bias, qualitative researchers are always cautioned about the way in which they interpret the data as this has implications for the conclusions drawn from the study. In this study, measures to ensure trustworthiness were also taken into consideration, the details of which are provided in Chapter 4.

## **1.13 LAYOUT OF THE CHAPTERS**

The study is organised into six chapters. Chapter 1 presents the orientation of the study, while Chapter 2 provides an overview of the historical development of OERs. Chapter 3 presents the theoretical framework relevant to this study, whereas Chapter

4 offers a detailed explanation of the research design and methods used. Chapter 5 provides an interpretation of the data collected and an analysis thereof. Finally, Chapter 6 presents the findings and conclusions of the study, as well as recommendations for implementation and further studies.

## **1.14 CONCLUSION**

This chapter introduced the concept of OERs in higher education. The presence of OERs in the education landscape can be associated with the ever-changing technologies and the need for pedagogies to respond positively to such changes. Lecturers are forever researching the new trends in order to remain abreast of what is happening in the world of teaching and learning. However, not all lecturers hold the same views with regard to changes introduced and later implemented in teaching and learning activities. Although OERs have been in the teaching and learning environment for over a decade now, lecturers hold different views regarding their efficacy.

The problem of the poor use of OERs by academics was highlighted, hence, the investigation of the perceptions and experiences of lecturers regarding their use in teaching and learning. The KM conceptual framework guided the investigation, the key concepts used in the study were clarified for ease of understanding, and the research design and methodologies used were outlined. The end of the chapter provides the layout of the chapters to follow. Chapter 2 will present the historical development of OERs.

## CHAPTER 2

### HISTORICAL DEVELOPMENT OF OPEN EDUCATIONAL RESOURCES

#### 2.1 INTRODUCTION

Education is a tool that has the ability to improve the socio-economic and environmental status of many countries, hence, the commitment by various governments to prioritise and improve their education systems (Orr, Rimini & Van Damme, 2015:11). The dawn of the 21<sup>st</sup> century has opened a way for the Internet, the World Wide Web, and various digital technologies to influence the way in which teaching and learning processes are conducted around the globe (McGreal *et al.*, 2013:91).

The sweeping changes in the education sector are therefore, in response to the evolving ICT industry. These changes have led to the implementation of new ways of teaching and learning, some of which are propelled by e-learning and its processes (Haythornthwaite *et al.*, 2016:3). The new millennium has seen the emergence of lecturers and students who rely on the evolving technologies to expand the knowledge base which can be freely accessed under different open licensing practices (McGreal *et al.*, 2013:91). The evasive nature of digitally-created educational resources has a direct influence on teaching, learning and research, and therefore policies aligned to these need to be in place to ensure that implementation and promotion activities are sustained beyond inception (*Ibid*). For instance, the recent introduction of OERs in the teaching and learning environment is in response to the demands of the knowledge economy.

As boundaries are slowly being eliminated, new platforms are created that allow for collaboration, creativity and imagination to thrive (Orr, *et al.*, 2015:11). The new world, which is free of boundaries, is infectious and permeates all sectors including the creation of educational resources that benefit all nations (McGreal *et al.*, 2013: 91). This virtual world has exposed the citizens of the world to digital platforms that allow them to generate, publish, share and distribute different texts, sounds and images (*Ibid*).

Currently, knowledge has surpassed capital, land and labour as the key driver in the creation of new technologies (Cobo, 2013:1). The knowledge economy is characterised by, and places emphasis on, knowledge production, sharing and application processes that lead to new innovative ways of thinking (Ibid). Universities are also expected to play a key role in creating an environment that allows for the development of innovative systems whose influence spans across all corners of the globe (Ibid). According to Hurmelinna, Kyläheiko and Jauhiainen (2007:142), for the knowledge economy to be sustained, 'New mechanisms of knowledge creation, integration and transfer, [need to] play a central role in the evolutionary economics-based dynamic capability [of any country] (Cobo, 2013:1)'. A successful knowledge-based economy therefore takes place on a platform that encourages the discovery, sharing and application of new innovations such as OERs that positively impact on teaching, learning and research in HEIs.

Even though OERs are still relatively new in the education landscape, the current literature provides interesting pointers that would assist in answering the key research questions. It is through this study that the body of knowledge regarding the integration of OERs in teaching and learning at HEIs will be expanded.

An increase in various educational resources, including OERs, could be attributed to, among others, the emergence of ICT-aligned innovations including Web 2.0, digital instruments, learning management systems and various tools that form part of the social media network (McGreal *et al.*, 2013:91). The Internet has made it possible for different educational resources to be accessed and used simultaneously by lecturers and interested students anywhere and anytime around the world (Ibid). When OERs entered the teaching, learning and research sphere, they aimed at promoting both formal and informal learning through flexible and quality-laden educational resources (Ibid).

The continued evolution of digital technologies poses a challenge to various HEIs to strategically reposition themselves by encouraging lecturers and students to come up with creative and innovative ways that will propel them to fit into this ever-changing teaching, learning and research environment (McGreal, *et al.*, 2013:91). Such changes

further challenge policy makers to re-examine their visions and mission statements and to align these with the vast opportunities associated with ICT (Ibid). These developments compel HEIs to revise or create from scratch new pedagogical theories whose principles support the integration of ICT into teaching, learning and research (Ibid). Siemens (2008:6) argues that although the current generation in HEIs embraces technology, it is not fully equipped with the skills needed to prepare it for the global economy. This gap is caused by an ever-increasing disconnect between the current generation's lifestyle and the tools and methodology currently being offered by HEIs (Ibid:7). Through Connectivism, a theory introduced by Siemens (2005:5), there is a possibility of correcting all these imbalances between information overload and lack of proper skills to navigate through this labyrinth by making use of proper and suitable networks.

Furthermore, some students at HEIs struggle to access relevant educational resources for their studies (Keats, 2003:1). The escalating costs of textbooks, for example, sometimes compel some departments in these institutions to stretch themselves to the limit when it comes to the application of principles of fairness (Ibid). They allow students to use photocopied course materials and sometimes teach using older editions whose content may not be in line with current trends (Ibid). In some cases, departments are forced to use learning materials that are not properly designed (Ibid).

In addition, Mtebe and Raisamo (2014:249) contend that some lecturers are reluctant to use educational resources that are accessible through the web due to a lack of knowledge about their source of origin and fear of using low quality resources. However, the recent introduction of OERs is seen as the game-changer in many HEIs, many of which are in the developing world, in that they are able to access and acquire teaching and learning resources that are on par with the rest of the world (Ibid).

The past decade has seen an increase in the influence of OER movements on teaching, learning and policy formulation in HEIs (Orr, Rimini & Van Damme, 2015:3). Although, at first, many doubted the sustainability of OERs, one important comment made in a workshop hosted by the Organization for Economic Co-Operation and

Development- Centre for Educational Research and Innovation (OECD-CERI, 2006:3) states:

If we look 7-10 years back, the same question was asked by many institutions regarding websites. Today it is almost impossible for a well-established institution to be without a good website, even if very few can show that this is a sound economic investment. It was suggested that the same will be true regarding Open Educational Resources in maybe 7-10 years ahead.

Although doubt is usually the first reaction when a new phenomenon is introduced as indicated in the above quotation, Cobo (2013:4) cites D'Antoni who observed a decade of exponential OERs' growth in many countries across the globe. This growth is seen as encouraging as it happens in a sector such as education that has always been slow to embrace change (Ibid). The introduction of digital technology has led to the creation of educational resources which are freely accessible through open licences (Ibid). In addition, the presence of the web and Internet platforms have made it possible for these freely-created educational resources to be discovered, stored and shared iteratively. This not only contributes to the expansion of diverse educational resource packages, but also stretches their accessibility beyond their original borders (Ibid).

It is through active participation in OER activities that many HEIs have been elevated to becoming leaders in a number of digital research platforms due to their excellent and high-quality educational resources (Geser, 2012:62). Agbu, Mulder, De Vries, Tenebe and Caine (2016:113) agree with the above assertion by quoting from the 2009 International Council for Open and Distance Education/European Association of Distance Teaching Universities (ICDE/EADTU) conference where a Maastricht message was formulated which states that:

It is evident that the increasing – and increasingly diversified – demand for higher education cannot be met through traditional institutions. OERs offer an unprecedented opportunity to advance both international commitment to Education for all and to building inclusive knowledge societies.

With reference to the African context, the South African Institute for Distance Education (SAIDE) (2009:1) acknowledges the opportunities offered by OERs which include the sharing of online educational resources, as well as the offline usage that includes printing. The presence of such options continues to bridge the gap of inequality between the developed and developing countries, thus ensuring that OERs reach the majority of African countries that are still under-developed.

Another observable pattern which could be traced back to the introduction of OERs is that a number of HEIs that have recently joined the open movement bandwagon tend to come up with more advanced, creative and innovative ways that make it easier for educational resources to be freely accessible using a variety of devices (Geser, 2012:62).

The rapid spread of the Internet across the globe and its promise to revolutionise the provision of education worldwide has seen many collaborations across borders where new ideas on teaching and learning are exchanged (Haythornthwaite *et al.* 2016:3). The e-learning phenomenon has seen teaching and learning reaching wider audiences through the use of video-based resources, gamification, recorded lectures and adaptive teaching and learning systems (Ibid:4).

HEIs have been identified as important stakeholders that have the power to change the socio-economic status of everyone in the world (Donkor & Tagoe, 2010:5). Such institutions have the ability to develop citizens who are well-rounded, creative, critical thinkers who will ultimately contribute by solving challenges that need people with the relevant knowledge (Ibid). The teaching and learning sphere has been directly influenced by ICT in that new methods of instruction, lecturers' notes, seminars, case studies, and a number of related tools and activities have emerged in response to this evolving environment (Ibid).

The education sphere is slowly embracing and acknowledging the presence, growth and influence of the open movement (Olcott, 2013:15). This movement lobbies for a change in traditional teaching and learning methodologies and the acceptance of new innovative ways. These focus on, among others, open education systems, new policies and open content which would appeal to and accommodate citizens of the

world irrespective of their socio-economic status (Ibid). ICT has proven to be fertile ground for the expansion of these newly-acquired and open-aligned innovations whose influence in the education environment is slowly being recognised as a reality that needs attention for the sake of sustainability (Ibid).

Despite notable strides by open education, there are still sceptics who continue to associate open education with anything that is of poor quality (Panke, 2011:3). This belief poses a problem in that such uninformed assertions may make it impossible to secure the buy-in of various stakeholders whenever there are discussions on OERs (Ibid). These baseless assertions may create a space for some stakeholders to question the credibility of these educational resources (Ibid). HEIs are therefore challenged to develop theoretical frameworks that are not only convincing to everyone but which also have the power to transform societies using OERs (Ibid).

Although, through its 2010 Millennium Development Goals, the United Nations made strides in its promise to 'eradicate extreme poverty and hunger' by 2015, many developing countries are still mired in poverty and receive poor education (UNESCO, 2011:6). Ramsbotham, Woodhouse and Mall (2011:240) draw from Degesys' assertion that 'educational systems can sustain conflict within schools, they can also liberate it'. This indicates that the provision of free and quality OERs to the citizens of the world has the capacity to level the playing field.

It is worth noting that the historical development of OERs, which will be thoroughly discussed in section 2.5, can be traced back to the 1970s when one student identified the popular textbooks in the university's library and stored them on a computer (Evertse, 2013:2). Through his acts of kindness and hatred of inequality, such books would be shared among students who were too poor to buy them (Ibid). Such an idea was conceived long before the world recognised Gutenberg and MIT projects on OERs (Ibid). They were subsequently followed by Wiley's 'Open Content' and UNESCO which officially coined the term 'OERs' (Ibid).

## 2.2 THE CONNECTED WORLD

According to Wang, Chen and Anderson (2014:122), both Connectivism and the associated connected knowledge were coined by Siemens and Downes, respectively. This connected world has given birth to the concept of Connectivism where the created knowledge is shared across networks that bring together people and technologies (Siemens, 2005:6; Orr et al., 2015:11). Wang *et al.*, (2014:122) were curious and wanted to know more about the nature and operations of a networked and digital environment. According to Ozturk (2015:4), the concept of Connectivism can be traced back ontologically to the assumption that knowledge is embedded in a number of networks and is a product of objective and subjective views. Such distributed knowledge can be described as part of the Connectivist world provided that it contributes significantly to the expansion of Connectivist views (Ibid). Connectivist pedagogy emphasises the need for strong networks between students and lecturers, and between them and ICT networks that offer them a platform to create, store, distribute and share created knowledge (Wang et al., 2014:122).

The prominent characteristic features that are part of the Connectivist network include being chaotic, fragmented, non-sequential and having a strong context base (Ozturk, 2015:4). The Connectivist approach has the ability to provide knowledge whose roots are in the digital age and learning that takes place in an organically-controlled environment where creativity, sharing and social structure exist (Ibid). According to Downes (2007:48), 'interaction not only promotes human contact, it provides human content... it creates a deep layer of learning content that no developer could ever hope to create'.

The growing communication networks are an indicator of a globally-connected world driven by innovators who believe in providing services to the people. However, despite widening networks, one of the challenges is inaccessibility to valuable educational resources (Yuan, MacNeill & Kraan, 2008:1-34). The provision of such valuable resources is often referred to as game-changing in that it has contributed towards the upliftment of societies across the globe (Ibid).

However, the presence of the unequal distribution of resources continues as shown by a widening gap between the educated and developed North and the uneducated South (Ibid). Such a divide perpetuates poverty and illiteracy among the under-developed countries of the world. Unless educational resources are equally and easily accessible, inequalities will continue unabated (Ibid).

The presence of ICT in the teaching and learning sphere brings endless opportunities to different users who are expected to bring forth innovative ideas in order to enhance the quality of teaching and learning, thus strengthening the current methodologies (Donkor & Tagoe, 2010:4). OERs were born out of such initiatives and continue to change the way in which teaching and learning takes place (Ibid). However, inadequate ICT infrastructure and the lack of an OER policy are seen as stumbling blocks to accessing OER material in University repositories. Once implemented, such policies pave the way for investments to be made to systematically produce and publish OERs throughout the HEI sector (Ibid).

Since OERs can be re-used and shared iteratively, they are guaranteed for sustainable lifelong learning among the disadvantaged societies (Yuan, MacNeill & Kraan, 2008:1-34). They also promise to promote inclusivity and an exchange of ideas among diverse communities and thus enlarge the knowledge base among the citizens of the world (2008:1-34). Such an increase in interaction between technologies and people strengthens the exchange and sharing of resources (Haythornthwaite *et al.*, 2016:9). It further enhances social connections between individuals and promotes online collaborations which encourage knowledge sharing through communities of practice (2016:9).

In a world where the creation of information and knowledge transfer occurs in multi-faceted dimensions, Connectivism is seen as the suitable model to navigate the modern age which is dominated by networks (Orr, et al., 2015:11). Teaching and learning is awash with theories which encourage the mastery of content and context, thus linking them to the people's lived experiences (Haythornthwaite *et al.*, 2016:9). Furthermore, this has shifted the focus towards researching issues pertaining to shared understanding and the bringing together of people with similar ideas, and who are also able to discover and create new vocabularies (Ibid).

This interaction between computers and humans is fast becoming part of the agenda of many research institutions. There is a growing body of published research highlighting the role that technology plays in teaching, learning and research at HEI level. It further explores the human-computer commensalism that helps to shape a new understanding and knowledge on teaching and learning (Ibid:11). Haythornthwaite *et al.*, (2016:11) agree with Garrison and Anderson (2003) that '[T]eacher presence is a necessary part of a successful e-learning implementation, along with cognitive presence and social presence'.

The three elements, therefore, depend on one another for sustained growth and survival of e-learning in a teaching and learning environment. Furthermore, the Internet has allowed lecturers to not only be the consumers of a variety of educational resources but also tap into their creative minds, thus affording them opportunities to create and modify resources to meet their needs (Siemens & Tittenberger, 2009:3). Lecturers have the ability to organise and structure information to suit the changing needs of their students (2009:3). The introduction of OERs in the education sphere can claim its existence from the revolution that was brought about by the Internet.

According to Bell (2010:99), since the beginning of the 1990s, the Internet has managed to unveil unique technical skills in many users who had to learn how to navigate the World Wide Web in search of relevant information. It also added the voice of many users who are now able to contribute through online collaborations and discussions on various topical issues, thus diversifying knowledge creation exercises (Ibid). HEIs have tapped into this unique role provided by the Internet and are now able to get out of the cocoons which have confined them to function in very controlled virtual learning spaces and management learning systems such as Blackboard and MOODLE (Ibid). The boundaries created by out-dated VLEs are spreading knowledge beyond the usually protected walls within HEIs. Furthermore, the introduction of Web 2.0 has contributed to the production of people who create information, share, comment, exchange ideas and improve on the current knowledge base (Ibid:100). Learning in an online environment does not have timeframes and is not confined to specific classrooms; it permeates through the formal and informal settings with the main requirement being the presence of a society that is willing to advance knowledge and benefit in more ways than it used to be (Ibid).

## 2.3 THE CONCEPT OF 'OPENNESS' AND THE OPEN MOVEMENTS

The roots of open education are cemented in the belief that knowledge should be treated as a public good and that it needs to be widely distributed so that it can be equally accessed by as many people as possible (Zancanaro, Todesco & Ramos, 2015:2). It is the presence of the Web in its multiple platforms that allows users to create, re-use, re-mix, and re-distribute knowledge as widely as possible (2015:2). The created knowledge, including Open Educational Resources falls within the 'digital openness family' and is freely accessible through 'Open Access' or 'Open Content' platforms (Evertse, 2013:2). Although there is a thin line separating 'Open Access' and 'Open Content', the former allows free access and copying whereas the latter allows both copying and adaptation of resources content and:

[it] broadens access to education and knowledge, reduces costs, enhances the impact and reach of scholarship and education, and fosters the development of more equitable, effective, efficient, and transparent scholarly and educational processes (Veletsianos, 2015:199).

The popularity of open practices has led to many HEIs offering online courses to beneficiaries located all over the globe (Ibid). One exciting development took place in 2012 when the state of California approved a legislation which supports the creation and adoption of open textbooks (Ibid). Subsequently, in 2014, other prominent political office-bearers followed suit, including the Premiers of Alberta, Saskatchewan and British Columbia who signed a memorandum of understanding that facilitated the creation, sharing and use of OERs (Ibid). Furthermore, in 2009, the Netherlands became one of the first countries to initiate a national policy on OERs (Ibid).

In 1998, Wiley coined the term *open content* in reference to the use of open licences applied to licenced information which is then used freely (Wiley & Gurrell, 2009). In addition, Creative Commons, which relies on structured and consistent legal support, created a flexible set of licences that improved the Open Publication Licence in 2001. Both these contributions and the support of a growing community helped to promote

the visibility and credibility of new forms of academic knowledge sharing and content exchange (Ibid).

On an international level, the OER movement has grown consistently with the new initiatives, declarations, and guidelines being developed on OERs (Cobo, 2013:110). These include the 2007 Cape Town Open Education Declaration, the 2009 Dakar Declaration on Open Educational Resources (D'Antoni, & Savage, 2009:21), and the 2011 Commonwealth of Learning and UNESCO *Guidelines on Open Educational Resources in Higher Education* (UNESCO and Commonwealth of Learning, 2015:v) (Ibid). The common thread among all these initiatives is that they promote open educational resources, open software technology, and new learning possibilities (Ibid).

The OER movements continue to convince the global world and are spreading the idea that knowledge is a public good (Hassler, Hennessy, Knight & Connolly, 2014:6). They do advocacy services by supporting and encouraging organisations and individuals to create, publish and freely share OERs (Ibid). However, for now, the potential of OERs to transform practice has not been realised (Ibid). There is a growing need, across the globe, for innovative forms of support on the creation and evaluation of OERs, as well as evolving empirical evidence-based research on the effectiveness of OERs (Ibid).

As open movements and interested individuals continue to advocate for the free access to various educational resources, they usually base their arguments on article 26 of the Universal Declaration of Human Rights that declares that everyone has the right to education, and that 'technical and professional education shall be made generally available' (United Nations, 1948) (Caswell, Henson, Jensen & Wiley, 2008:1).

In addition to the above declaration, the William and Flora Hewlett Foundation argues that:

At the heart of the movement toward Open Educational Resources is the simple and powerful idea that the world's knowledge is a public good and that technology in general and the World Wide Web in particular provide an extraordinary

opportunity for everyone to share, use, and re-use knowledge. OERs are the part of that knowledge that comprise the fundamental components of education – content and tools for teaching, learning and research (Geser, 2012:16).

Furthermore, many supporters of openness and, specifically, the OER movements, contend that the introduction of the Internet and the subsequent creation of educational resources, have a direct influence on teaching, learning and research in many HEIs. According to Charles Vest (2006), the President Emeritus of the Massachusetts Institute of Technology:

[I]n the open-access movement, we are seeing the emergence of a Meta-university – a transcendent, accessible, empowering, dynamic, communally constructed framework of open materials and platforms on which much of higher education world-wide can be constructed or enhanced. The internet and the Web will provide the communication infrastructure, and the open-access movement and its associates will provide much of the knowledge and the information infrastructure (Goodwin, 2011:30).

Hence, the current strides made by the OER movement and the promise of a brighter future rely mainly on the endless opportunities that have been provided by the World Wide Web. The sustainability of the OER movement rests heavily on the solid global communication networks infrastructure that the Internet continues to provide. New OER models are emerging and are making use of the ever-evolving Internet platforms which have seen the web moving, within a short space of time, from Web 1.0, through Web 2.0 to the current Web 3.0 (Baraniuk, 2007:241-244). A number of initiatives by institutions with vested interests in the advancement of open practices are discussed below.

The birth of the open movement can be traced back, over time, to different initiatives across the globe, by individuals and organisations that had a common dream of producing educational resources that could be easily shared over the Internet.

### **2.3.1 Open Source Initiative**

The Open Source Initiative (OSI) is the brainchild of Eric Raymond and Bruce Perens (Yuan, MacNeill & Kraan, 2008:1). In 1998, they imagined a world in which communities would benefit from the endless opportunities offered by creating educational resources that are free and openly created using the OSI certified Open Source Software (Ibid). They believed that such software would allow for different programs to be created with everyone having free access to the source code, thus creating a platform for the sharing and duplication of resources (Ibid). The OSI further plays a critical role in relevant areas such as community building, education platforms and societal advocacy programmes that promote non-proprietary software (Open Source, 2017:1).

### **2.3.2 Open Content Initiative**

Subsequent to the successful launch of OSI in 1998, was the introduction of the 'Open Content Project' by David Wiley (Yuan et al., 2008:1). He made use of opportunities offered by OSI by calling for the creation of educational resources which would make it easy for users to share and re-mix them (Ibid). Wiley (Open content, 2015:2) defines 'Open Content' and 'Open Educational Resources' as 'any copyrightable work (traditionally excluding software, which is described by other terms like "open source") that is licensed in a manner that provides users with free perpetual permission to engage in 5R activities'. Furthermore, Wiley's licence specifically indicates that all educational resources which fall under open content control should allow users to modify and redistribute them following the flexible and spelt out terms and conditions (Ibid).

### **2.3.3 Open Access Initiatives**

The term 'open access' was formally coined by an international group comprised of Higher Education lecturers, representatives from the publishing industry and librarians (Cobo, 2013:109). It was the 2001 Open Society Institute gathering in Budapest [also known as the Budapest Open Access Initiative (BOAI)] that paved the way for the creation, promotion and scholarly works that are free from any legally binding

agreements (Yuan et al., 2008:2). It was at the same BOAI meeting that all of the boundaries related to Open Access, for example, downloading, copying, distribution and printing, were clearly spelt out (Cobo, 2013:109). It was also emphasised that all OA-related activities should take into consideration and give credit to the originators of these different educational resources at all times (Ibid).

#### **2.3.4 Open Education**

Open education focuses mainly on advocating for the universal breakdown of stumbling blocks that have been standing in the way of free access to educational resources for a number of years (Orr et al., 2015:20). During the drafting of the Cape Town Declaration in 2007, it was noted that there are distinct characteristics between Open education and OERs. The Declaration states that:

Open education is not limited to just open educational resources. It also draws upon open technologies that facilitate collaborative, flexible learning and the open sharing of teaching practices that empower educators to benefit from the best ideas of their colleagues. It may also grow to include new approaches to assessment, accreditation and collaborative learning (Ibid).

One common thread among researchers is the opportunity that OERs present to different communities around the globe to create, re-use, re-mix or re-distribute OERs (Moe, 2015:351). These flexible activities place users at the centre of beneficiaries of open education. In addition, the concept of OER falls within Open Education, and the William and Flora Hewlett Foundation believes that knowledge should be treated as a public good with the World Wide Web providing a platform for the sharing, use and re-use of such knowledge (Ibid).

With reference to the above definition of OERs, Butcher and Moore (2015:8) contend that its content is good enough to provide valid reasons for their creation which was to allow the citizens of the world to access public funded quality research resources for free. Furthermore, Chadwell and Fisher (2016:123) refer to Open Education as a concept that is made up of a number of quality educational resources that are free

from any legally-binding laws and can be shared and modified several times to suit the different backgrounds where they would be used.

Furthermore, and as a way of clarifying the position of OERs in relation to the wider teaching and learning sphere, Mulder and Jansen (2013:39) developed the 'Five Components for Open Education (5COE)'. The first two that represent the demand aspect of education are OERs: Open Learning Services (OLS) and Open Teaching Efforts (OTE). On the other hand, the last three components that represent the supply aspect of education are Open to Learners' Needs (OLN) and Open to Employability and Capabilities (OEC) and Open to employability & capabilities development (OEC) (Ibid).

Mackintosh (2017:102) argues that as an umbrella term, open education includes multiple dimensions, including OERs, open licensing, open policy, open philanthropy and open source software. The foundation is based on the principle of openness which is regarded as the DNA of OER (Ibid). The evolution of OERs continues to have an impact that influences the way in which teaching and learning takes place across the globe.

## **2.4 THE EMERGENCE OF OPEN EDUCATIONAL RESOURCES**

The expansion of ICT in the late 90s and its positive influence on the quality of education at HEIs have revolutionised education forever (Donkor & Tagoe 2010:4).

The emergence of the Open Movement and OERs is seen as an alternative to the traditional ways of teaching and learning (Butcher & Moore, 2015:11). The evolution of OERs is also attributed to the expansion of the Internet in all corners of the globe and whose functions include storage, sharing and copying of resources (Ibid). The ease of access by many people at the same time has made the Internet a breeding ground for freely-accessible OERs. Since their introduction to the world, OERs have played a positive and influential role in many communities with the global North leading the pack (Ibid). The continued growth of OERs in terms of content and quality has equally seen its growth in many HEIs and improvement in the implementation of

policies which address issues such as licensing and integration into teaching and learning (Ibid). ICT has paved the way for innovative and creative ways to be developed and influences teaching and learning at HEIs (Donkor & Tagoe 2010:4).

OER researchers are in agreement that the subject is still new and that a great deal still needs to be uncovered (Orr et al., 2015:17). The same can be said about the lack of a conclusive definition for the concept (Ibid). As a new concept, OERs therefore continue to attract discussions which are aimed at expanding the literature in order to make sense of it. According to Plotkin (2010:1), OERs may be defined as ‘teaching, learning, and research resources which are freely accessible on public platforms and whose licences allow for users to modify, share, and use for collaborative and commercial purposes’. OERs can also be defined as ‘teaching, learning and research materials that make use of tools, such as open licensing, to permit their free re-use, continuous improvement and repurposing by others to further educational aims (Orr et al., 2015:17)’. Tools associated with OERs include open search and management systems, user-friendly content development systems, repositories and portals, and all the online resources that make it possible for users to engage each other using various virtual learning communities (Casserly & Smith, 2008:275).

The above definitions can be traced back to a number of movements and institutions that played a pioneering role which brought life to the concept (Orr et al., 2015:17). The United Nations Educational, Scientific and Cultural Organization (UNESCO), CERI and the William and Flora Hewlett Foundation are some institutions that continue to play a leading role in the advancement of OERs across the globe (Ibid).

Despite varying approaches when defining OERs, the common thread is that they are made up of high-quality content, tools, and implementation resources ((Casserly & Smith, 2008:275). Their content consists mainly of complete courses, courseware, journals, data, modules and learning objects, games, simulations, interactive instructional materials, journals, collections and data (Ibid). Implementation resources are usually made up of easy-to-understand and accommodative intellectual property licences and flexible translation services that make it easier for the resources to be accessed, re-used, modified, contextualised and distributed with ease (Ibid).

The emergence of OERs was not like a meteorite falling from the heavens, but was part of the incremental technological developments that were introduced in the teaching and learning space (Conole, Pepler, Bacsich, Padilla, & Bird, 2016:444). As confirmed in the timeline in Table 2.1, OERs entered the teaching and learning sphere in the early 2000s with the main aim of bringing to the education landscape resources that were freely accessible by members of the public and without licensing rules serving as barriers (Ibid). Table 2.1 also indicates that the introduction of OERs led to other technological advancements in the teaching and learning field, for example, the development of e-books, Massive Open Online Courses (MOOCs) and learning analytics (Ibid).

**Table 2.1: The development of digital technologies over the past three decades (Source: Conole, Pepler, Bacsich & Bird, 2016:444)**

YEAR	DIGITAL TECHNOLOGY
1980s	Tools to create multimedia
1993	The web
1994	Learning objects
1995	Learning Management System
1998	The First Generation of mobile devices
1999	Learning design
2000	Gaming technologies
2001	Open Educational Resources (OERs)
2004	Social participatory media
2005	Virtual worlds
2007	e-books and smart devices
2008	Massive Open Online Courses
2010	Learning analytics

Orr *et al.*, (2015:17) argue that the introduction of OERs paved the way for the use of original works and being able to adapt and re-purpose them to produce new learning resources. In addition, they emphasise that open means free to access and free to change. It is for this reason that one of the central characteristics of an OER is liberal licensing (e.g. through Creative Commons), which facilitates this process (Ibid).

When looking back on the first consultative meeting on OERs, it is clear that great strides have been taken in the creation, development and promotion of these valuable resources. By the end of 2007, over 3 000 courses from over 300 universities were available (OECD, 2007) (Geith, & Vignare, 2008:115). These included 1 900 courses from the Massachusetts Institute of Technology (MIT), 2 500 courses from over 200 universities under the OCW Consortium, and more than 1 500 courses under the Japanese OCW Consortium (Butcher, 2010:4). Others include 750 resources from China Open Resources for Education (CORE) and more than 22 500 resources from Multimedia Educational Resource for Learning and Teaching Online (MERLOT) (Yuan et al., 2008). Moreover, there are already African-based initiatives that have shared thousands of locally-developed OERs. The OER movement in Africa is slowly making inroads through institutions that include OER Africa, Teacher Education in Sub-Saharan Africa (TESSA), and UCT Open Content. (Mtebe & Raisamo, 2014:249).

When OERs emerged, it was naïvely assumed that making resources freely available would automatically result in teachers and learners using and re-purposing them. In contrast, the evaluation of the use of OER repositories and participation in MOOCs, for example, indicate that these resources are not widely used and that there are high dropout rates (McAndrew, 2006). Despite a slow change towards the adoption of OERs, OERs are acknowledged for having changed the education landscape (Wiley, 2012:1). For the first time in the history of educational practices, the whole world is benefitting from freely-available educational resources (Ibid). What also makes them unique is that they cut across educational levels, and can be informally used for lifelong learning (Ibid).

Well-known groups and institutions such as OpenCourseWare (OCW), the Massachusetts Institute of Technology (MIT), the Open University (OU), John Hopkins, Kyoto University, Notre Dame, and the University of Korea have come up with initiatives that support the development and implementation of OERs (Caswell et al., 2008:1). Globally, there are currently over 2 500 Open Access courses which are freely available and a number of institutions developing new initiatives to strengthen the development and use of Open Education Resources at institutions of higher education (Ibid).

Table 2.2 shows the development of OERs in terms of a number of milestones, which indicates that these resources have the ability to assist in solving global problems at a reduced cost (Butcher & Moore, 2015:12-13). This table is a further indicator that OERs not only have global appeal, but are also developing at a faster rate, with advocacy and policy-making efforts gaining momentum.

**Table 2.2: The evolution of OERs 1 (Source: Butcher & Moore, 2015:12-13)**

<b>YEAR</b>	<b>OER MILESTONE</b>
1999	University of Tubingen (Germany) published first lecture video series – first instance of Open Educational Resources
2001	MIT OpenCourseWare announced in the New York Times
July 2002	UNESCO convenes a forum to examine the role of OpenCourseWare at HEIs in the third-world countries – Open Educational Resources/OERs coined
September 2002	MIT releases 32 courses through OpenCourseWare
November 2003	China Open Resources for Education (CORE) collaborates with MIT to provide OERs for Chinese Universities
January 2005	Giving Knowledge for Free: The emergence of Open Educational Resources report from OECD released after a 20-month investigation on the efficacy of OERs
September 2006	Khan Academy launched – provides free online videos on Secondary Schools curriculum
September 2007	University of Michigan Medical School and IT department release dScribe: Provision of pre-clinical materials as OERs
January 2008	Cape Town Open Education Declaration calls on governments and publishers throughout the world to release educational resources on the Internet for free
February 2009	OER Africa, University of Michigan and four African universities receive grants from the Hewlett Foundation to support free health education

August 2009	Governor of California, Arnold Schwarzenegger, releases California's Free Digital Textbook Initiative
September 2010	Stanford University offers free Massive Open Online Course (MOOC), attracting 160 000 students.
April 2011	Bangladesh releases a full set of digital textbooks for Grade 1-12.
May 2011	Commonwealth of Learning develops with a policy that assists in the development, implementation, promotion and usage of OERs.
July 2012	Paris OER Declaration is released: calls on governments around the world to openly license publicly-funded educational resources for public use

Despite OERs spreading and making a footprint across the globe, they are based on a foundation and principles that are simple and common, thus making it easier for everyone to achieve a simplified understanding of them.

#### **2.4.1 Characteristics of OERs**

OERs enjoy worldwide support due to the unique characteristics and services that they offer, which are not only endless but sustainable, and tailor-made to meet the unique needs of different users (OECD, 2007:87-91). It is always advisable that Open Educational Resources practitioners take such characteristics into consideration (Butcher & Moore, 2015:8). The first important feature is that they are accessible on the public domain under free licensing laws (Ibid). They are available for integration into teaching and learning and can be used freely due to the copyright which is no longer active or follows the Creative Commons licensing rules (Ibid). It is under these laws that such free educational resources may be used verbatim or modified to suit the users' needs (Ibid). Although OERs are usually found in digital format, they are

flexible enough to be re-used, shared, modified and redistributed in any format which is different from the creator's original chosen format (Orr et al., 2015:18).

Another distinguishable characteristic of OERs is that they include free textbooks, courses, course materials, streaming audio/videos of classroom lectures, tests, software, and many other tools, materials or techniques. Such educational resources that are used to transmit knowledge are not only freely available but also have a direct impact on teaching and learning (Butcher & Moore, 2015:8). It should also be noted that not all of the free educational resources that are available on the web or Internet are OERs (Plotkin, 2010:1). OERs, therefore, have a unique characteristic which include the open copyright licence or Creative Commons which allows their resources to be placed in the public domain for ease of access and modification (Orr et al., 2015:15).

To confirm the evolving nature of OERs, at first, their licensing was based on the widely known 4 Rs principles which have now been expanded and are known as the 5 Rs (Wiley, 2007:1; 2014:1). The 5 Rs represent the following:

- Re-use: Use the work verbatim, exactly as you found it;
- Revise: Alter or transform the work so that it better meets your needs;
- Re-mix: Combine (verbatim or altered) work with other works to better meet your needs;
- Re-distribute: Share the verbatim work, the reworked or re-mixed work with others (2007:1); and
- Retain: Right to make, own and control copies of the content (Wiley, 2014a:1).

According to Hassler *et al.* (2014:6), the flexibility offered by these resources means that lecturers have the latitude to infuse their creativity and engage people with different ideas to develop new approaches to teaching and learning while making use of the collaborative and interactive tools that are part of OERs. Lecturers who engage in sharing OERs consider these as giving them a platform to not only contribute in a non-profit manner, but also to elevate their status in the specific fields of study in terms of peer review mechanisms (Ibid). As a result of the above distinct characteristics,

OERs have the ability to be easily disseminated to both teachers and learners free of charge using the web (Conole *et al.*, 2016:444).

#### **2.4.2 Distinction between OERs and Other Resources on the Web**

Based on the definitions provided in section 1.1 above, it should be emphasised that not all of the 'stuff on the web' is representative of OERs (Orr *et al.*, 2015:18). For example, even though Wikipedia can be described as an open resource, it can only be referred to as an OER once it has been specifically selected as an educational resource that could assist in achieving a specific learning objective (Ibid).

According to the Commonwealth of Learning (2016:3), OERs differ from other resources in many respects, one of which is being freely available. These make them distinct because not all educational resources that are available on the Internet are freely accessible (Ibid). In addition, unlike other educational resources, OERs allow users to modify, adapt or redistribute without first asking the creator of the resource for permission (Ibid). McGreal (2014:5) emphasises that 'An OER can be a course, unit, lesson, image, webpage, exercise or multimedia clip but it must have a specific pedagogical purpose/context'.

The flexibility that OERs offer allow lecturers to not only modify various educational resources, but also to translate them into different languages or formats in order to meet the needs of their users, including those with different disabilities (Commonwealth of Learning, 2016:3).

According to Tuomi (2013:70):

A major promise of OER is that the creation and refinement of both learning content and the underlying pedagogical approaches can benefit from the distributed co-creation model enabled by open licenses. In principle, a rich developer base facilitates the creation of resources.

Unlike other educational resources on the web, the existence of the copyright or intellectual property rights does allow for the limited, liberal and private usage of such

educational resources, for example photocopying a specified number of pages from educational resources (Orr *et al.*, 2015:18). From the viewpoint of OERs, and in order to mitigate the frustrations linked to intellectual property rights, Creative Commons were introduced to allow for the educational resources to be re-used, re-mixed and re-distributed in transparent forms which have the blessing of the original creators (Ibid). Such regulations are important in order to ensure that the OERs are used under controlled conditions and not manipulated by predatory forces who are only interested in making a profit out of them (Ibid:19).

### **2.4.3 Evolving Traditional Versus OER Value-Added Chains**

The introduction of OERs in the commercial publishing sector has impacted on the value-added chain that has been in existence for some time (Schön, Ebner & Hornung-Prähauser, 2017:169). Traditionally, there were many hard and fast procedures to be followed, including the pre-financing of the authors, illustrators and various researchers with an interest in the development of educational resources (Ibid). Subsequently, the process would be handed over to the sales and marketing departments, who, using their finances, would sell the educational resources in various formats to the customers, who include lecturers and students (Ibid).

Though the OER value-added model still shares some similarities with the traditional one, there are notable changes. OERs offer a great deal of leeway in that they are flexible and can be changed to suit various circumstances. Each user or modifier of OERs is often seen as a marketer who assists in the sharing and expansion of knowledge (Ibid).

## **2.5 OER INITIATIVES ACROSS THE GLOBE**

OER initiatives continue to spread throughout the world with many HEIs focusing mainly on three areas. These include institutions that are creators and publishers of knowledge; those that have specific projects that sponsor or support the creation, provision and sharing of open content; and those that develop software whose standards and licensing tools are aimed at supporting or building knowledge which benefits the public (Yuan et al., 2008:4). OER initiatives aspire to provide open access to high-quality education resources on a global scale. From large institution-based or institution-supported initiatives to numerous small-scale activities, the number of OER-related programmes and projects has been growing fast within the past few years (Ibid). The following are several well-known programmes and projects which illustrate the different approaches, models and scales of current OER initiatives.

### **2.5.1 MIT Open Courseware**

The introduction of the Open Courseware (OCW) project at the Massachusetts Institute of Technology (MIT) in 2001 has contributed towards elevating MIT to one of the most recognised HEIs that offer a wide variety of both formal and informal courses. The MIT's OpenCourseWare (OCW) initiative was established in order to design and make courses freely available. A number of these courses allow anyone, anywhere in the world to access them via the Internet. In 2016, MIT's OCW celebrated fifteen years of offering Open Sharing and more than 100 courses with instructor insights were offered (MIT OCW, 2017:1).

The MIT project is one of the globally-known OCW models which has been copied and modified by many HEIs during the initial stages of their OER projects (Yuan et al., 2008:8). The more than 1 800 courses that MIT offers at no cost (ranging from lecture notes, to videos and audio lectures) are popular among lecturers and students who are using them for education-related activities (Ibid). Some lecturers use MIT educational resources to augment their own curriculum course materials which they, in turn, make freely available on the web (Ibid).

### **2.5.2 OpenLearn Initiative**

This initiative by UK Open University also allows for specific educational resources to be freely accessible to members of the global community with an additional benefit for collaboration, thus expanding the education knowledge base in the teaching and learning landscape (Yuan et al., 2008:8). Modelled on the MIT model, OpenLearn not only provides free courses, but also assists lecturers in developing their own materials by creating a collaborative platform for lecturers from around the world to share ideas and thus form communities of practice (Ibid). It consists of the LearningSpace where lecturers and students can access 5 400 learning hours of materials for learning and a LabSpace where content can be downloaded, re-mixed, adapted and re-used (Ibid).

### **2.5.3 Utah State University (USU) OCW**

Utah State University (USU) offers a variety of OERs which are used by lecturers, students and researchers in both formal and informal teaching, learning and research activities (Utah State University. 2017:n.p.). The university also allow students to receive credits from certain courses which have been done by students through their OpenCourseWare program (Ibid.). USU OpenCourseWare runs on an OCW development tool called eduCommons which is a start-up platform for institutions who are interested in developing their OCW course materials (Ibid). The planning tool used at USU helps lecturers to create and publish their free course materials in line with the rules governing open content (Ibid).

### **2.5.4 OpenStax**

Formerly known as Connexions, OpenStax is the brainchild of Dr Richard Baraniuk, a lecturer at Rice University, in the United States of America (OpenStax 2017:1) He wanted to create a space which would, unlike the traditional copyright route, give knowledge creators a platform to share and modify educational resources, including courses and books (Ibid). On the other hand, the various users are able to access, download and use different devices for free and with no legal obligations at all. OpenStax is unique in that it offers millions of users free access to thousands of textbook-like learning objects in various disciplines (Ibid).

### **2.5.5 Multimedia Educational Resources for Learning and Online Teaching (MERLOT)**

MERLOT, a California State University initiative, which was developed in 1997, is a program aimed at bringing together different institutions, societies and various industries by means of a platform that supports the creation of online courses which are freely accessible to everyone (MERLOT 2017:n.p.). It is made up of different peer-reviewed, free open online teaching, learning and research materials targeted at members of the international community (2017:n.p.).

MERLOT has over fifteen communities of practice that span across different disciplines, each of which is under the tutelage of separate editorial boards whose responsibility is to promote peer reviewing of their educational resources (2017:n.p.). The updated catalogues contain more than educational resources which are diverse and include simulations, animations, tutorials, quizzes, tests, podcasts, lectures and reference materials (MERLOT 2017:n.p.).

### **2.5.6 Open Education Consortium**

Open Education Consortium is a global network of educational institutions, individuals and societal groups, based in the United States of America (Open Education Consortium. 2017:n.p.). Its foundation is based on the principles that advocate for openness, collaboration, innovation, sharing and collective development and use of open educational resources (2017:n.p.). As a non-governmental and non-profit organisation, Open Education Consortium has a vision of a world in which everyone, everywhere, has equal access to high-quality educational resources which are freely shared on a free global platform (Open Education Consortium. 2017:n.p.).

### **2.5.7 The OPAL Initiative**

The Open Educational Quality Initiative (OPAL) is an internationally-funded organisation whose aim is to promote innovation and improve training in all spheres of education (Open Educational Quality Initiative, 2011:2). It was created in order to ensure that free Open Educational Resources of high quality are made and distributed for free, using a platform that is accessible to all citizens of the world (Ibid). Its funders include the European Union, UNESCO, and a number of universities, such as the Open University in the UK. OPAL aims to create collaborations among institutions that are passionate about developing OERs using creative and innovative means (Ibid).

### **2.5.8 The Textbook on Learning and Teaching Assisted by Technology Project (L3T)**

L3T is another example of collaborations by people who have an interest in open practices that resulted in the production of Open access textbook (Schön, Ebner & Hornung-Prähauser, 2017:169). When this project was initiated in 2010, over 130 academics, specialists and researchers participated (Ibid). The 48-chapter textbook that promotes technology-enhanced learning was financed by the editors' private companies including the Graz University of Technology, in Austria (Ibid). In 2013, a new edition was developed under the book sprint project referred to as 'L3T 2.0', a seven-day marathon where different digital tools were utilised and the whole process was operated, monitored and realised online (Ibid).

Technically, the L3T project was conducted from the well-known and internationally-recognised open source platform for journal management and publishing called Open Journal System (OJS) (Ibid). Legally, the textbook is published under the creative commons 'CC BY NC ND' licence (Ibid). During its first year of publication, the textbook was downloaded over 100 000 times (Ibid). In order to meet the ever-changing demands of its users, iPhone or Android apps were developed. Some modification to the company's website resulted in the book chapters being accessible through platforms such as Slideshare.com (Ibid).

Table 2.2 below indicates the results and impact that the L3T project continues to have ever since the textbook was made available.

**Table 2.3: Results and impact of L3T (Source: Schön *et al.*, 2017:169)**

FEATURE	DESCRIPTION
Results	Two issues of an open licenced textbook (nearly 600 pages in print), in several formats (PDF, printed version, e-pub, html, via apps)
Impact	More than 500 000 chapter downloads after five years, perception as one of the OER flagship projects in German speaking higher education, several usages in higher educations, also MOOCs, several awards (e.g. the New German Book Award 2011, the German OER award 2016 for a flagship project)

Table 2.2 proves that the L3T was a resounding success as more than 500 000 downloads took place over a five-year period, thus dispelling the myths that OERs are not popular within the German HEIs. In addition, the project received a number of awards including the 2016 German OER award for a flagship project (Schön *et al.*, 2017:169).

## 2.6 OER INITIATIVES IN AFRICA

Although Africa was a little late in joining the open movement, there are notable initiatives which have their roots in the continent, and great strides have been made even though there is still a long way to go.

### 2.6.1 South African Institute of Distance Education (SAIDE) Initiative

The South African Institute of Distance Education (SAIDE) has its roots in the African continent and its mission states its commitment ‘to increas[ing] equitable and meaningful access to knowledge, skills and learning through the adoption of open learning principles and distance education strategies’ (South African Institute of Distance Education, 2009:2).

In 2008, SAIDE expanded and incorporated OER Africa whose main aim is to connect through Communities of Practice (CoP) and OER practitioners across the African continent. These practitioners are expected to establish platforms which would enable them to create, share, adapt and apply best practices that accommodate OERs in all forms of education on the continent. OER Africa believes strongly in the power of human interaction which enhances collaborations towards the creation of new and innovative educational practices (Ibid).

SAIDE further aims to ensure that education in Africa draws both internal and external stakeholders who will bring the critical skills needed to design, package and deliver quality educational programmes across the continent. It also brings together HEIs, governments and policy makers to pave the way to the creation, promotion and sustainability of OER models (Ibid). SAIDE has been actively involved both in supporting and driving the development of high-quality educational materials, using experience in distance education materials design to help with effective materials development processes. In addition, SAIDE has often been at the forefront of innovations in the use of Information and Communication Technologies (ICT) of different kinds to support the delivery of resources to learners (Ibid:3).

### **2.6.2 OER Initiatives in Tanzania**

One of the challenges currently faced by third-world countries, including Tanzania, is a lack of quality educational resources, which are able to support HEIs to fully implement the curriculum and increase their outputs (Mtebe & Raisamo, 2014:249). Despite the free availability of OERs on the Internet, there is little evidence to suggest their usage or infusion in teaching and learning activities (Ibid). Recent studies on Tanzania's HEIs' reluctance to use OERs indicate that even though the intention to use them exists, this has not been converted into practice (Ibid). There are, however, a number of initiatives in place, which are aimed at encouraging the use of OERs in teaching and learning in Tanzania (Ibid).

Another challenge that Tanzania faces which has an impact on the development and promotion of OERs is the presence of an unreliable broadband. This has, in the recent past, promised to change due to the rollout of SEACOM marine cabling which has

increased the Internet speed by 155 Mbps and reduced costs by 55% (Ibid). Sidler (2015:n.p) indicates that since 2015, SEACOM has increased the Internet speed to countries in Africa to over 1 Gbps.

Moreover, the tax exemption on imported ICT equipment in Tanzania has further spread the implementation of ICT services across the country as it has not only become easier to obtain ICT equipment, but it is also easier to offer Internet services at a reasonable cost (Mtebe & Raisamo, 2014:249). HEIs are expected to take advantage of these developments and embrace ICT services in the education landscape (Ibid).

Currently, Tanzanian institutions are installing, among the various ICT technologies, e-learning systems such as Blackboard (Ibid). Even though many institutions are teeming with the latest technologies, there is little evidence of commitment to developing course content by manipulating the endless opportunities these technologies are providing (Ibid). The traditional usage of expensive pre-packaged printed textbooks which are difficult to share, still dominates in many Tanzanian HEIs (Ibid).

### **2.6.3 OER Initiatives at the University of South Africa (UNISA)**

The University of South Africa (UNISA), one of the biggest Open Distance Learning (ODL) universities in the world, made its intention clear that it was going to actively participate in the initiatives that support the creation, development and promotion of OERs (De Hart, Chetty & Archer, 2015:18). Although OERs have not permeated all spheres within the institution, UNISA started by investigating the possibility of adopting and including OERs in the policies of the institution (Ibid). In 2014, a survey was developed to gather information on OERs, including knowledge of the concept, intellectual property (IP) rights and licensing, participating in the development and dissemination of OERs, and identifying possible stumbling blocks to their implementation across all campuses (Ibid). The outcomes of the survey reveal a lack of knowledge with regard to OERs by many UNISA academic staff members (Ibid). In addition, the number of lecturers who use OERs in teaching and learning was low

(Ibid). Barriers to participation in OER initiatives were identified and recommendations made for the future promotion of OERs across all UNISA campuses (Ibid).

Although UNISA's research on OERs was context specific, many institutions can learn a great deal from its findings as they are likely to provide common problems and solutions that would benefit them. Embarking on this benchmarking exercise would further assist HEIs in creating platforms where there is effective planning, decision making, implementation and evaluation of all activities relating to the adoption of OERs (De Hart et al., 2015:18).

#### **2.6.4 Other African Institutions' Initiatives**

Although, in the beginning, the creation of OERs was partly meant to assist HEIs in the developing world to catch up and access high-quality educational resources, there is little concrete evidence to support its impact on the ground (Unwin, Kleessen, Hollow, Williams, Oloo, Alwala, Mutimucuo, Eduardo & Muianga, 2010:16).

Despite proof that OERs increase collaboration and the sharing of ideas, that reality has failed to gain traction in Africa (Unwin et al., 2010:16). The creation of the African Virtual University (AVU), which was hailed as a solution to accessing open educational resources, had to be restructured several times as it failed to provide the courses which would have benefitted millions of Africans who are finding it difficult to access educational resources in either formal or informal education (Ibid). It also failed, not only because of unreliable bandwidth, but also due to a lack of experience in terms of the creation and distribution of educational resources by HEIs (Ibid).

In Tanzania, for example, despite the efforts made by the Open University of Tanzania (OUT) to adapt and use MIT OCW, only 21.8% of the 150 respondents indicated awareness of its existence (Samzugui & Mwinyimbegu, 2016:6). Similarly, after the University of Dar es Salaam signed an agreement with MIT to use MIT OCW, none of the departments reported using these resources (Mtebe & Raisamo, 2014:249).

This indicates that there is still a great deal of research that needs to be done on OER activities in Africa. However, all the institutions mentioned above are actively involved

with OERs activities and continue to investigate and provide evidence regarding the quality of these resources.

## **2.7 QUALITY OF OERs**

The quality of educational resources and the ultimate ownership thereof have always been subjected to discussions long before the introduction of OERs (Hassler et al., 2014:2). Such discussions can be traced back to the middle ages when institutions of higher education were the main sources of researched information (Ibid).

Although meaningful progress has been made in terms of the provision of quality educational resources to a number of people in the global North, the developing countries are still struggling to reach out to the majority of their respective citizens and provide them with good and easily-accessible educational resources (Richter & McPherson, 2012:201). The issue regarding the quality of OERs always crops up whenever the concept is under discussion.

Evertse (2013:6) argues that the presence of OERs on the Internet and their usage by a number of users has raised several questions about their relevance and, most importantly, the quality associated with them. Currently, there are standard quality control measures in place to ensure that the OERs that are produced and made available on the Internet are universally recognised (Ibid).

Early evidence indicates that OERs foster student success and that the maintenance of high quality has always been paramount (Plotkin, 2010:2). Research reveals that students who accessed the first high-quality OERs ever developed, namely a math course created by Carnegie Mellon University's Open Learning Initiative, learned more quickly and at a much lower cost (Ibid). In this case, students derived benefit from the inclusion of learning paths that were created by a highly-skilled team of cognitive scientists in addition to the open nature of the course itself, which placed success within reach of all students at no cost to them (Ibid). The expansion of collaborative efforts beyond the institution's borders also contributed to the production of high-quality OERs that are developed from the infusion of accommodative and openly-

aligned methodologies (Ibid). These educational materials can be applied to a growing number of courses and course levels (Ibid). When these materials are further developed and used within an appropriate supportive policy framework, they are likely to enable even more rapid and increasingly dramatic, measurable improvements in both the quality and speed of teaching and learning (Ibid). They also substantially reduce and, in some cases, even eliminate entirely, costs for learning materials imposed on students (Ibid).

The important feature of OERs is sharing which promises to break down boundaries that lead to the provision of high-quality resources that are easily distributed (Orr et al., 2015:23). This can build bridges between informal learning and formal education, and facilitate lifelong learning (Ibid).

Many learners are excluded from accessing high-quality learning resources due to strict requirements including place, time and pace of learning associated with traditional teaching and learning methods (Orr *et al.*, 2015:23). OERs that are offered as digital resources enable the extension of educational resources beyond a set place and time of provision, and allow for the provision thereof at an appropriate pace for the learners (Ibid).

Many materials that are released as OERs go through a rigorous process of ensuring that they are of high quality before they are made available to the public (Butcher & Moore, 2015:45). OER practitioners believe that course materials need to be consolidated using high standards of quality in terms of:

- Content: knowledge and skills;
- Pedagogy: sound teaching and learning methods;
- Motivational strategies: intrinsic and extrinsic rewards for students;
- Degree of student autonomy;
- Access to the learning environment (including issues of cost, technology and culture); and
- Management strategies, including administration (Butcher & Moore, 2015:45).

While discussions around the quality of OERs continue unabated, similar discussions dealing with the benefits that accrue from the use of the different Open Educational Resources are still in progress.

According to Hodgkinson-Williams and Gray (2009:102), the entrance of OERs into the teaching and learning sphere brought with it a mixture of beneficial and challenging factors associated with them. Despite the good intentions of making educational resources freely available, there are equally competing factors which are either strengthening or damaging to the role of the 'new culture' which was born from the evolving ICT platforms (Ibid). Sections 2.8 and 2.9 will delve into the pros and cons associated with the use of OERs in teaching and learning.

## **2.8 THE BENEFITS OF USING OERs**

Despite doubts on a number of OERs with regard to quality, research reveals that various educational resources match their sister publications which can be accessed through commercial institutions (De los Arcos, Farrow, Pitt, Perryman, Weller & McAndrew, 2016:2). OERs, therefore, offer clear benefits for institutions, although there are also various aspects that need to be borne in mind when deciding whether or not to use them. It may still be rather complicated, for example, for potential users to find their way around the wide but fragmented range of OERs that are available (Evertse, 2013:1).

Sinclair, Joy, Yin-Kim Yau and Hagan (2013:177) argue that the sharing of Open Educational Resources is beneficial in that as openly-available resources, they are able to transcend continents, nations and cultures and are flexible enough to allow users to re-use and re-purpose them. In addition, the establishment of repositories where OERs are stored makes it easier to find them, thus improving teaching and learning through the use of quality resources (Ibid). Another notable benefit is that OERs increase the credibility and reputation of different institutions and are soon recognised as providers of open and high-quality licensed resources (Sinclair *et al.*, 2013:177). The majority of these resources have a global appeal and can be accessed, shared and re-used in teaching and learning environments (Ibid).

Butcher and Moore (2015:9) list some of the benefits of OERs, including the following:

- Education open to anyone;
- Affordable: ideally, free;
- Students can try the course before signing up;
- Flexible study times not bound by weekly timetables or semester calendars;
- Students work at their own pace;
- Available from anywhere and not restricted by access to school or college;
- Access to a huge amount of study materials; and
- Intellectual capital is available for re-use.

It has also been observed that OERs are being used differently in different parts of the world to address specific needs (Kanwar, 2012:220). In several countries, they are used to expand the pool of people with diverse qualifications and who are part of the evolving workforce (Ibid). They assist in boosting the credentials of many citizens who, within a short period, are able to catch up and be on par, and be part of the new trends (Ibid). They have proven popular in the attempt to reach out to remote people who are able to access new knowledge through the Internet (Ibid).

Furthermore, Perryman (2013:1) argues that OERs make it possible to reach out to millions who would not have benefitted from the traditional ways of teaching and learning (Ibid). They are hailed as a solution to the exclusionary practices which have kept marginalised communities outside and unable to access quality educational resources (Ibid). In 2008, for example, the Indian government, through its National Knowledge Commission (NKC), introduced a 'national e-content and curriculum initiative' that was aimed at promoting a culture of sharing, modification and use of OERs by institutions within the Republic, thus improving the quality of the educational resources (Ibid).

According to Evertse (2013:4), the creation of OERs has not only helped its users to improve their lives but has also contributed to enhancing the reputation of the institutions associated with OERs across the globe (Ibid). The researchers or creators

are benefitting equally in that their profiles are raised to higher levels which may result in them receiving international recognition from their peers (Ibid:5).

Evertse (2013:5) further emphasises this by quoting a member of the board at Delft University who said 'when you give away material, you are seen as an authority on the subject'. As these educational resources can be freely accessed, copied and shared, they reduce the cost of spending on books which are copyright protected (Ibid). The institutions that are actively generating OERs are more likely to attract higher numbers of both prospective students, including Ph.D. candidates, as they are able to see the detailed programmes offered and which differ from the traditionally offered prospectuses on different qualifications (Ibid).

OERs enable large numbers of people, who would otherwise be unable to enter a traditional programme, to participate in higher education and engage in lifelong learning (Evertse, 2013:5). OERs give students who attend formal schooling, as well as those who are self-taught, access anytime and anywhere to high-quality learning materials which they can use to acquire knowledge and skills for their studies, hobbies, or work.

Many OERs are popular because of their repositories which are not only well structured but also easy to navigate in search of relevant educational resources (Evertse, 2013:5). The importance of having an ordered repository is emphasised by Dittrich, chairman of the Dutch-Flemish Accreditation Organization: 'It's not everybody who is capable of browsing round independently in a mountain of information. Students still need structure' (Ibid). This calls for the developers of OERs to take discoverability and traceability of these resources seriously and, most importantly, to focus on search tools and centralisation of these resources (Ibid).

Kurelovic (2016:138) contends that accessing various OERs from all over the world exposes users to different and current teaching and learning styles that, in most cases, make them active participants in the whole education process. In addition, there are many platforms that promote collaboration and future research by lecturers who would not have had the chance to meet their counterparts and exchange ideas (Ibid).

The availability of OERs across continents is seen as an omen for the countries of the south that are now able to access quality educational resources that add value to their content. This may propel them into becoming the creators of their own resources (Kurelovic, 2016:138). This is seen as opening doors in the developing world as participation is expanded, thus exposing the lecturers and their students to the digital world (Ibid).

The nature of OER design is such that the creators bring their own creativity while being exposed to the new and up-to-date methodologies that may have an impact on general learning designs in HEIs (Kurelovic, 2016:138). Studies also reveal that there is a relationship between being disadvantaged and the level of digital skills one possesses (Ibid). In many communities, the introduction of OERs promotes digital inclusion and reduces exclusionary practices that are rife in urban and rural areas (Ibid). When correctly introduced to societies, OERs have the ability to deepen their engagement and succeed in being full members of the digital world (Kozinska *et al.*, 2013:54).

Another important benefit of using OERs is that it eliminates the time that it takes to ask the creators of knowledge for permission to use, share or adapt them to suit individual needs (Bliss & Tonks, 2013:4). In addition, OERs can be updated on a regular basis in comparison to that of traditional publishing which has a waiting period (Ibid).

Despite proof pertaining to the efficacy of OERs in teaching and learning, there are still challenges that impact on their growth across the globe.

## **2.9 HINDRANCES TO THE EXPANSION OF OERs**

The scattered OERs on the Internet sometimes make it difficult to navigate through thousands, if not millions, of educational resources (Mulder, 2011:2). Unless there is a commitment to building OER repositories, finding relevant educational resources will

continue to be a challenge (Ibid). There is also the fear that some OERs are not peer-reviewed, which makes their suitability and relevance suspicious (Ibid).

Lecturers usually show concern about some perceived risks when it comes to the adoption of OERs (Annand, 2015:2). These include their quality, licensing issues and loss of rights, reputation-related fears and resistance in terms of handing over the rights to knowledge which were created while in the employ of an institution (Ibid). According to Annand (2015:2), the Babson report (2014), which surveyed over 2 100 teaching faculty staff, points to unhappiness about the time and effort it would take to search for and identify suitable OERs. In addition, though they do not have problems in terms of using OERs, the lack of technical skills makes it difficult to identify, adapt and use them in teaching and learning (Ibid). Despite the fact that there are a number of well-resourced and quality-laden OERs in repositories across the globe, there is little evidence of integrating them into teaching and learning (Butcher & Moore, 2015:13).

In some cases, the lecturers have confessed to not knowing about OERs in terms of searching, accessing and, worst of all, integrating them into teaching and learning (Butcher & Moore, 2015:13). Some of the frustrations cited by a number of lecturers at all levels of teaching and learning include the following:

- Sourcing appropriate OERs: This is an issue because there is no one-stop shop for OERs. They are scattered across the Internet.
- Understanding open licences: Not everyone is familiar with different open licences and what they permit.
- Adaptation of OERs requires new skills: To adapt and re-purpose OERs, the practitioner needs more than basic ICT skills and practice in revising and re-mixing resources.
- Traditional mind-sets predominate: Many educators feel that it is wrong to use other people's work, and thus they protect, rather than share, their own resources (Butcher & Moore, 2015:13).

Furthermore, a number of professors and lecturers have identified the lack of variety and depth in terms of the content of the disciplines that they teach, as well as the scarcity of and difficulty in tracing OERs, as some of the barriers preventing them from embarking on a full-scale adoption and inclusion of OERs in teaching and learning (Blumenstyk, 2016:1). Butcher and Moore (2015:14) concur with the challenges identified by Hodgkinson-Williams in her 2010 paper. As can be seen in Table 2.3, the challenges which were identified are divided into technical, economic, social and legal challenges as follows:

**Table 2.4: Challenges associated with the use of OERs**

**Source: Butcher & Moore, (2015:14)**

MAIN CHALLENGES	POTENTIAL CHALLENGES
Technical issues	Lack of broadband and other technical innovations
	Interoperability
	Metadata standards
Economic issues	Lack of resources to invest in broadband, hardware and software
	Difficulties in covering costs for developing OERs or sustaining an OER project in the long run
Social issues	Absence of technical skills
	Unwillingness to share or give away intellectual property
	Unwillingness to use resources produced by someone else
	Assuring quality in open content
	Lack of time to produce shareable materials
	Research privileged over development of teaching and learning materials
	Lack of incentives
Legal issues	Prohibition against using copyrighted materials without consent
	Lack of awareness among academics regarding copyrighted issues

The International Council for Open and Distance Education (2014:10) has identified the lack of policies on OERs in many HEIs as stumbling blocks in that their absence makes it difficult to promote or integrate them into teaching and learning. There is also little progress in policy adoption in both the developed North and developing South

and the identified institutions which have developed their own policies, including the Open University in the UK and the University of South Africa (Ibid). With little research to support the importance of policy formulation, OER expansion and promotion becomes difficult as only a few people know about the potential benefits of integrating them into teaching and learning (Ibid).

Linguistic hindrances continue to make access to OERs by some countries a pipe-dream (International Council for Open and Distance Education, 2014:10). Research has proved that 35% of the users of educational resources prefer those that are written in a familiar or indigenous language (Ibid). 21% also cited the dominance of English literature as the main barrier as not all the developing countries use English as the mother or second additional language (Ibid). Translated educational resources will always be found to be lacking in that they do not always convey the original message intended by the original knowledge creator, thus weakening the quality within the OERs (Ibid).

The traditional publishing industry still regards OERs as disruptive technology that poses a threat to the livelihood of the industry (Ibid:11). Their unwillingness to be on board stifles the culture of sharing (Ibid:11). In addition, strict bureaucratic structures imposed by some states and countries make it difficult to expand the use of OERs across the globe (The William and Flora Hewlett Foundation, 2010:8). They usually insist on OER producers, for example, to develop consolidated resources with both content and assessment materials which may not be easy to find or develop (Ibid). In some institutions, faculties refuse to adopt OERs that are not produced in local languages and may not even recognise the researchers who are involved in their development, thus denying them promotion (Ibid).

There is also another barrier pertaining to OERs in that it is difficult to integrate them seamlessly into individual schools' learning and management systems (The William and Flora Hewlett Foundation, 2010:11). It has also been reported that some OERs are not user-friendly, especially for lecturers and students with various kinds of disabilities (Ibid). There is still a need for proper marketing strategies to dispel the myths surrounding OERs and the need to integrate them into teaching and learning (Ibid:8). Some OERs become unpopular when their content is not constantly updated

which, in turn, compromises quality and raises doubts among the would-be-users (Mulder, 2011:2). Even though they may be good repositories, if consistent standards are not applied across the educational resources, one bad apple may spoil the bag, thus damaging the reputation of the repository (Ibid). Where there are repositories, there are sometimes strict rules within institutions when it comes to giving out the right to accessing the educational resources, and it has been reported that some institutions or faculties resist having their content placed on the public platform as open materials (Ibid). This leads to another challenge with regard to how far one can go in terms of opening up the educational resources to the world. This can be linked to barriers that continue to exist regarding MOOCs in many elite institutions but, when advertised, are regarded as open (International Council for Open and Distance Education, 2014:13).

Despite the good intentions behind opening some of these courses to the world, some commentators still regard the process as 'counter-culture' and disruptive. For example, the UCT OER was an initiative supported by outside donors, and they have to devise a means to make the project sustainable and part of the university's culture (Hodgkinson-Williams *et al.*, 2013:44).

The digital divide between the rich North and the poor South is still seen by many as a barrier to levelling the playing field (Kanwar, 2012:218). In the United States, for example, there are over 80 computers for every 100 people, while in many parts of the developing world, the number is about ten (Ibid). The presence of inequalities usually results in many stakeholders being left out during the development, implementation and promotion of OERs (Ibid). In addition, the role played by regional politics, class, gender and ethnicity poses a threat to the use of OERs in many of the developing world's HEIs (Ibid). The traditional governing bodies within the HEIs may be a stumbling block as they may not approve the use of OERs due to lack of knowledge (Ibid:220).

In a study conducted in thirteen Asian countries, barriers to the use of OERs were linked to the following:

- Teachers felt that they neither have the time nor the capacity to locate, adapt, and re-purpose OER material relevant to their work;

- Learners felt that OERs should be fully open – half-open did not help – and materials should be accessible on alternative technologies such as mobile devices;
- Technical support personnel said there were no standard practices in the packaging and re-use of OERs;
- Management was concerned about intellectual property and copyright issues;
- Concerns regarding competition and revenues were also raised (Kanwar, 2012: 219); and
- Policy-makers were concerned about the financial viability of using OER (Ibid:220).

There are many barriers with regard to realising the vision of integrating OERs into teaching and learning. Most educators remain unaware of the growing pool of open educational resources (The Cape Town Declaration, 2007:2). Many governments and educational institutions are either unaware or unconvinced of the benefits of open education (Ibid). Differences among licensing schemes for open resources create confusion and incompatibility. In addition, although ownership of personal computers is on a trajectory, many owners do not have access to the networked world of communication where various educational resources are stored (Ibid:1).

The Cape Town Declaration (2007:2) makes it clear that barriers can be overcome, but only by working together. They crafted three strategies focusing on stakeholders which include learners, educators, universities, policymakers, and others (Ibid:1). They share their vision to commit to the pursuit and promotion of open education and, in particular, the three strategies to increase the reach and impact of open educational resources (Ibid).

Unlike traditional forms of education, OERs are cost effective and flexible enough to be adapted and appeal to diverse global audiences (Kende, 2014:70). Although, English still enjoys dominance in many MOOCs provided by different universities, it creates a barrier because not all countries in the world use English as a medium of instruction (Ibid). Furthermore, the uneven distribution of the fastest bandwidth

continues to make accessibility to OERs difficult as without a reliable Internet service, the dream of providing access to the global community will not be realised (Ibid).

Daniel and Mackintosh (2003:825) highlight that the developing world still lags behind when it comes to ICT due to the fact that many do not have the basic ICT infrastructure, and that this is still the case in many countries. In cases where it is available, it is usually unreliable (Ibid). On the other hand, Daniel, West and Mackintosh (2006:1) believe that many countries in the developing world are catching up and making use of the current generation technologies to improve educational standards. The rapid development and spread of new ICTs in third-world countries promise to increase accessibility to quality educational resources by teachers and learners (Kuboni, Lentell, Mackintosh, Victor, Webb & West, 2014:2). This has the potential to eliminate all the barriers of time and distance, thus opening up possibilities for everyone to access, interact, collaborate and share good educational resources (Ibid).

According to Varian, a Google economist, universal access to knowledge still stands out as the biggest benefit after the revolution which was brought about by the Internet in the education sphere (Kende, 2014:70). Due to the Internet-based changes in education, many countries in the world such as China and India experienced exponential growth. The easy access to information through the use of mobile devices has contributed towards uplifting the literacy and numeracy levels of the citizens of the world (Ibid).

The universal access to information around the world has not yet reached a balance due to the differences in the socio-economic statuses of many countries (Kende, 2014:99). This digital divide is perpetuated by unequal distribution of the fibre-network infrastructure which ensures a speedy and sustainable connection to the Internet (Ibid). The well-resourced and developed countries are already using 4G mobile networks which has left many developing nations far behind as they are still stuck in the out-dated generations of mobile networks (Ibid).

In recent years, UNESCO (2011) has stressed that OERs can offer a new dynamic way of sharing that will provide potential learning benefits to users, particularly in developing regions (Cobo, 2013:110). Despite the promise to add value, OERs have

not yet received worldwide support as statistics still reveal low levels of usage (Ibid). In addition, the heterogeneous nature of the individual countries has also posed a challenge as most of these OERs lack contextualisation (Ibid).

Furthermore, cultural barriers in both developed and developing countries dominate and justify the top-down knowledge flow approach (Cobo, 2013:110). Cultural barriers include language of instruction, contextualisation, and technological infrastructure in remote regions not being sufficiently taken into account, and this imbalance is problematic (Ibid). Consequently, there are still large numbers of learners and educators in developing countries who do not have the skills to effectively use, develop, or re-purpose OERs (Ibid). OERs cannot be used effectively in many developing countries because of the absence of basic infrastructure, such as Internet connectivity, thus potentially widening the gap of inequality (Ibid:111). Internet penetration is 60% in the EU, 78% in the USA, and 89% in Australia, while in Latin America and Africa, it is only 39.5% and 13.5%, respectively (Ibid:111).

The production of OERs in English, therefore, creates barriers to guaranteeing the universal use or understanding of content. Rossini (2010:21) adds that the language barrier should be added as an enormous socio-cultural barrier since the vast majority of OERs are in English and based on Western culture, thus limiting their relevance outside Western culture. This further carries the risk of consigning developing countries to be placed in the role of consumers (Cobo, 2013:110).

Masterman and Wild (2011:5) argue that a lack of comprehensive OER statistics and the adoption of OER practices could be compared to an 'iceberg'. Above the surface is a limited amount of highly-visible licensed OERs that bear the name of a well-known institution. However, below the surface is a much greater volume of re-used, non-OER digital materials that are used by staff and students and which are often invisible beyond a specific course. The invisible OERs are mostly excluded from statistics (Cobo, 2013:112).

The lecturers' skills pertaining to the use of the Internet have also been cited as a contributing factor to slowing the movement towards the full adoption of OERs (Perryman, 2013:4). In some cases, the lecturers may have the highest qualifications,

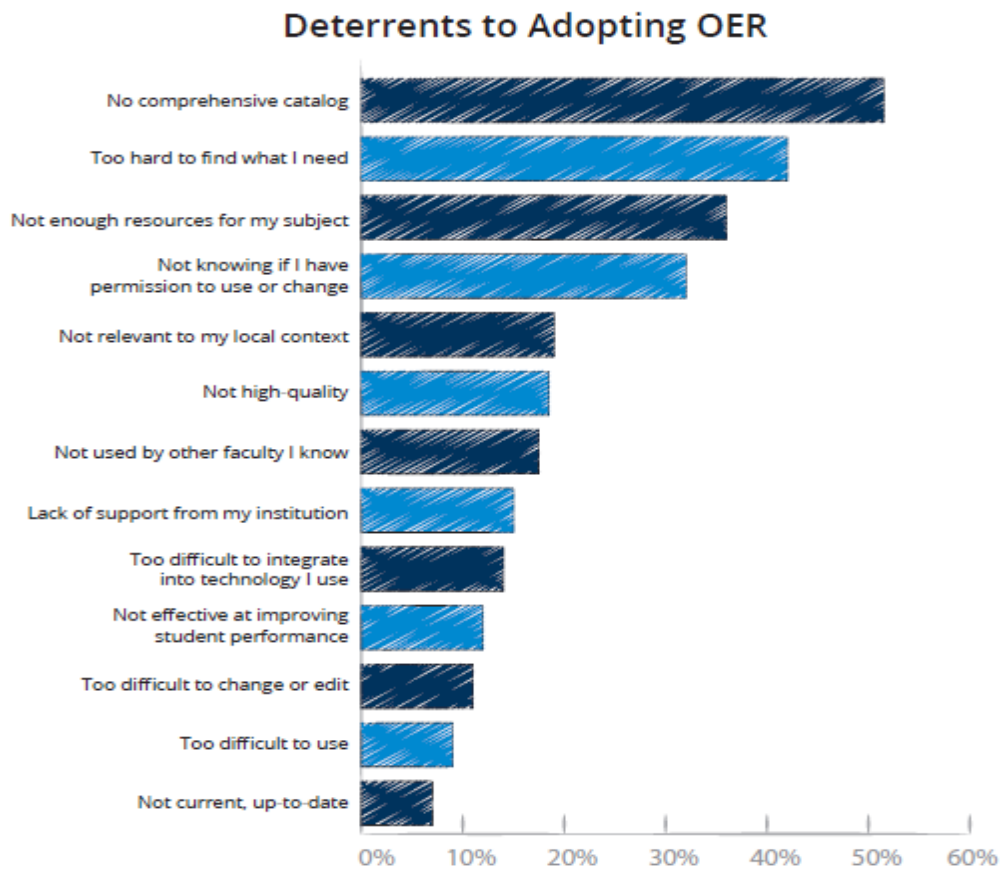
including PhDs, but be lacking in ICT skills (Ibid). Having few or limited skills means they may not have the desire to engage the different OERs and integrate them into teaching and learning (Ibid). In order for OERs to gain popularity and acceptance at all levels, relevant awareness programmes need to be created so as to make people aware of the depth they can reach (Kurelovic, 2016:138). Despite little evidence on the sharing of educational resources within the boundaries of institutions or at national level, there is hardly any engagement in sharing on a global scale. This is seen as a barrier because OERs have both local and global appeal (Ibid).

According to the Classroom Aid (2012:2), the absence of clear guidelines or policy on how to sustain OERs poses a threat to their survival. The lack of a proper framework which should include licensing, acknowledgement, compensation and recognition, causes little motivation among faculty members in many institutions to create, share, and promote OERs in teaching and learning (Ibid). Even though OERs have foundations rooted in the open movement, the principles of openness, collaboration and transparency are practised by only a few, resulting in many institutions operating in 'silos' (Havemann, 2016:2).

McKerlich, Ives and McGreal (2013:91) add that the difficulty in navigating through some repositories stems from their architectural designs which render them less user-friendly. Once a user succeeds in accessing the educational resources, the next barrier is usually cultural or familiarity with local language or content which could be countered by providing tools within the repositories which accommodate users from all walks of life (Ibid). The presence of universally-understood standards would contribute to the further breakdown of the barriers to accessing OERs unlike very conservative and closed standards which are available in e-books sellers such as Amazon and Apple (Sabadie, Muñoz, Punie, Redecker & Vuorikari, 2014:7).

The graphic representation in Figure 2.3 from the Babson Report (Cengage Learning, 2016:4).provides some interesting findings on the barriers that are perceived and experienced by users of OERs which range from the difficulty in allocating a detailed catalogue, to unfriendly navigation of the repositories and absence of up-to-date educational resources (Cengage Learning, 2016:4). Discoverability and difficulty in navigating the repositories were cited as 51.5% and 42%, respectively, which is of

great concern to any evaluator and institutions that are planning to implement and encourage the use of OERs in teaching and learning (Ibid:5).



**Figure 2. 1: Deterrents to adopting OERs**

**Source: Cengage Learning, (2016:5)**

The content in OERs that have been developed in the Northern hemisphere still bears the marks of colonialism. The parent coloniser still has control over former colonies and continues to influence free and easy access to OERs (Richter & McPherson, 2012:204). The new call is for formerly-colonised countries to detach themselves from their coloniser’s agenda and to create a new African-rooted agenda which should be reflected in the OERs. Thiong’o (2005:157) is quoted by Richter and McPherson (2012:204) as arguing that:

The very mandate as African producers of knowledge is to connect with the continent. Linked to the western coated OERs is the barrier of languages that cuts across many countries in Africa but were separated by borders which were imposed by colonialists and OERs promise to break down those barriers and reunite communities which were unceremoniously divided.

The current content of many OERs does not promote national identity. Instead, it is viewed as anti-culture in the area where they are used (Richter & McPherson, 2012:205).

Richter and McPherson (2012:206) assert that the presence of social class in some communities makes it difficult to spread OERs across the class divide. The rich are always the first to access such resources, while the poor are left in the dark and are prone to poor educational resources (Ibid). It has also been noted that registering for MOOCs has slowed down and become stable in the wealthy North and that there is little progress in the developing countries (Jobe, 2014:2420). The provision of OERs in most developing countries, including Brazil, Russia, India, and China, is usually enjoyed by rich families. This means access to developing countries is still enjoyed by a select few and wealthy individuals, while the majority are yet to benefit (Ibid).

One of the hindrances to the use of OERs is the fear around their quality (Wiley, Webb, Weston & Tonks, 2017:63). Wiley *et al.*, (2017:63) further quote lecturers who, when asked about the way in which they view the quality of OERs, 28% expressed scepticism, while 28% said that they were not impressed despite having knowledge about the resources and having read articles to the contrary (Ibid).

### **2.9.1 Massive Open Online Courses (MOOCs)**

In 2008, George Siemens created the first MOOC which he referred to as connectivism and connected knowledge (Conole *et al.*, 2016:444). It was created to break the teaching and learning boundaries by connecting people from diverse backgrounds to form communities of practice where knowledge sharing would be key (Ibid). The abundance of resources that range from videos to interactive tests succeeded in creating a new way of teaching and learning using new educational models that promote access to free quality resources by a wider audience across the globe (Ibid).

The introduction of MOOCs transformed higher education as more people gained access to a variety of resources which were created and taught by highly-qualified

experts in their respective fields of study (Conole *et al.*, 2016:5). This was regarded as a game changer in higher education because it meant that learners now had a choice and could register for certain courses which they considered as adding value to their future aspirations (Ibid:445).

### **2.9.2 OERs versus MOOCs**

There are marked differences between OERs and MOOCs which can be defined by looking at three elements, namely the use of the term 'open', the form of resources and the audience (Orr *et al.*, 2015:19). The introduction of these two forms is part of new educational reforms and a testimony that higher education is undergoing an evolution which is shifting towards openness (Ibid). Although both fall under the umbrella policies which address openness when it comes to the provision of educational resources, they have distinct differences, the first of which pertains to the use of the term 'open' which, in relation to MOOCs, refers to access and use, whereas in terms of OERs, it allows free access with an additional allowance to re-use, re-mix and re-distribute educational resources (Ibid). Such re-distribution and modification is usually undertaken to deliver education-related service (Ibid).

Secondly, unlike the MOOCs, OERs are not identified and referred to as entities (Orr *et al.*, 2015:19). OERs are non-specified educational resources which can exist in many forms, including a complete course (Ibid). On the other hand, MOOCs are specifically created as complete courses whose content consists of a number of elements such as videos, discussion forums and a variety of assessment tools (Ibid).

Lastly, in relation to the targeted audience, MOOCs are fully prepared and complete courses which are not only aimed at addressing a particular issue that affects society but are also aimed at specific learners or people with an interest in that subject (Orr *et al.*, 2015:19). On the other hand, OERs are usually created for teachers who are then expected to modify them to suit their lessons and which will form part of their teaching and learning activities (Ibid).

According to the William and Flora Hewlett Foundation, (2011:20), OERs can be a catalyst for innovation within the current education system and a means to unlock

latent potential. The Hewlett Foundation says that the lockbox on education can be broken through the use of OERs (The William and Flora Hewlett Foundation, 2011:20). Despite these differences, overlaps between OERs and MOOCs exist. If an OER is conceived as a full course, it can be termed a MOOC, and if a MOOC has an open licence, it may be seen as an OER (Orr *et al.*, 2015:20). The introduction of Creative Commons is seen as creating a platform where OER creators can be confident that they will still have control over and be in charge of their created educational resources.

### **2.9.3 Creative Commons**

Creative Commons (CC) is a non-profit organisation that was founded in 2001 with the aim of developing and maintaining the open copyright licences and legal tools that the world would use to share content on more open terms than the default 'all rights reserved' of copyright (Commonwealth of Learning, 2016:10). CC consists of an international network of affiliates who provide legal, educational, and outreach support to creators and users in over 85 countries (Ibid:6). They are an example of free-to-use, open copyright licences that have already been applied to more than one billion copyrighted works across nine million websites (Ibid:10).

In the past, re-use and re-purposing of digital educational resources, primarily in the form of learning objects, has been viewed as difficult due to licensing and the traditional copyrights (Wiley, 2014a:n.p.). Through the introduction of flexible copyright licences such as CC, many educational resources are freely accessible across the globe with little to no cost involved (Ibid). A number of interested parties and institutions, including Connexions and DiscoverEd, have made their educational resources accessible under the CC licensing models (Kelly, 2014:3). The use of such CC-aligned licensing is seen as a contributing factor to increased discoverability and raising the reputation of both institutions and content creators (Ibid).

The open education licensing policy is based on the idea that research which is conducted through public funds or taxpayers' money should be freely available and accessible to all (Commonwealth of Learning, 2016:8). In addition, such created knowledge should be released using a licensing system with no legal strings attached or strict copyright laws (Ibid). Accepting funding from the public purse means that

researchers would be obliged to share content publicly on an open licence platform (Ibid).





OERs need to be made formally 'open' if they are to be genuinely 'freely accessible', but the rights of the original author must not be disregarded. OERs are often made subject to a Creative Commons licence (Evertse, 2013:6). Such works can be used/re-used or adapted – depending on the particular licence – without the author or creator needing to be notified (Ibid).

Before institutions, instructors, or students begin developing and sharing OERs, they therefore need to be aware that they can decide for themselves on the conditions that are applicable to the release of their educational materials (Evertse, 2013:16). It is through CC that both users and creators are able to exercise and apply the provided copyright laws (Ibid). Re-use, re-mix or modification of any educational materials would therefore be guided by the chosen copyright licensing rule and it would therefore be advisable for users to always adhere to such rules (Ibid).

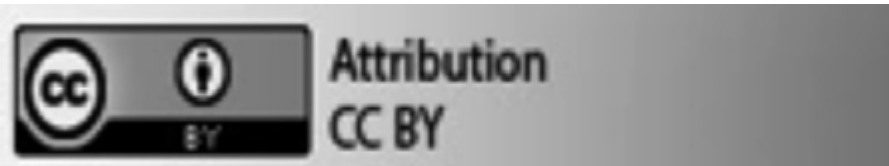
All Creative Commons licences are constructed from a combination of four specific 'rights' or conditions that can be reserved by the creator or author of the resource. These basic rights are indicated in Table 2.4 below (Butcher & Moore, 2015: 24).

**Table 2.5: Four basic types of Creative Commons which are subject to different combinations**

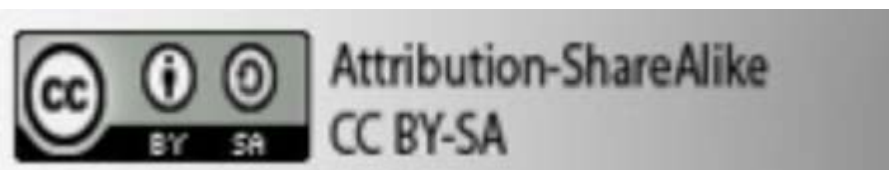
Source: Butcher & Moore, (2015: 24)

The types of Creative Commons licences		
Condition	Symbol	Explanation
Attribution		All CC licences require that others who use your work in any way must attribute it – i.e., must reference the work, giving you credit for it – the way you request, but not in a way that suggests you endorse them or their use of the work. If they want to use your work without giving you credit or for endorsement purposes, they must get your permission first.
NonCommercial		You let others copy, distribute, display, perform, modify (unless you have chosen NoDerivatives) and use your work for any purpose other than commercially. If they want to use your work commercially, they must get your permission first.
NoDerivatives		You let others copy, distribute, display and perform only original copies of your work. If they want to modify your work, they must get your permission first.
ShareAlike		You let others copy, distribute, display, perform and modify your work, as long as they distribute any modified work on the same terms. If they want to distribute modified works under other terms, they must get your permission first.

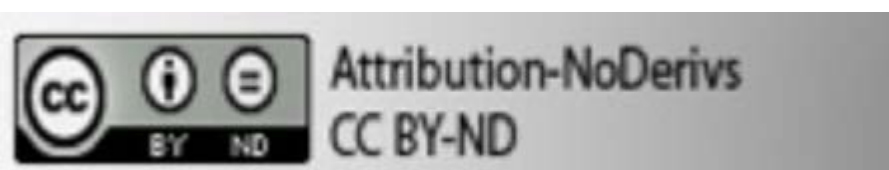
The most popular combinations of Creative Commons' rights or conditions make up these six licences (Butcher & Moore, 2015:24). The license below allows any user to re-use, re-work, re-mix, re-distribute and retain any work provided that they acknowledge the original creator (Belawati, 2014:4). Of all the licences, this is seen as the most flexible as it allows for full usage of the material with acknowledgement as the prior requirement (Ibid).



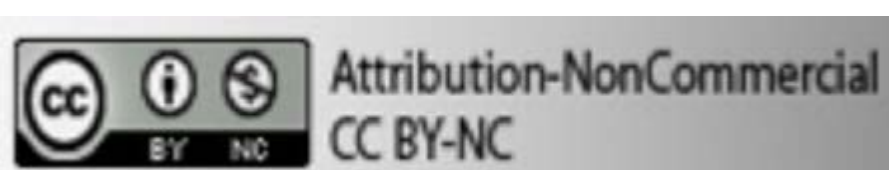
The license below allows for re-use, re-working, re-mixing, re-distribution and retention provided that the original creator is acknowledged in the newly-created works (Belawati, 2014:4). This licence, which is sometimes referred to as 'copyleft', is applicable to all works whose content falls, for example within Wikipedia (Ibid).



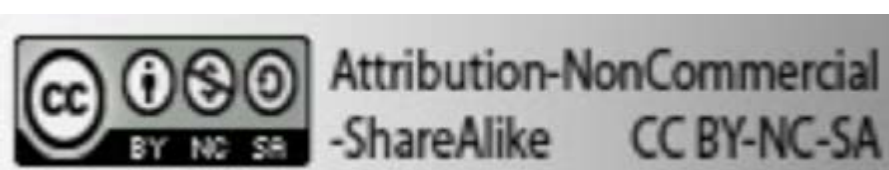
The license below allows for redistribution of created educational resources for commercial or non-commercial purposes as long as there are no changes that would have been made and that the works should still acknowledge the original creator (Belawati 2014:4).



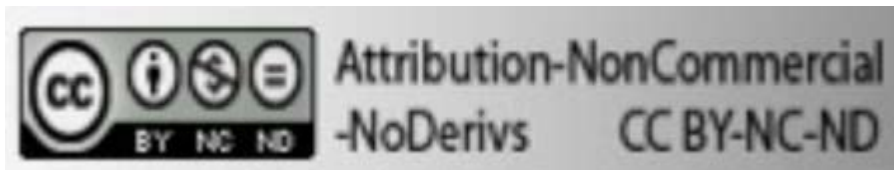
The licence below allows for the original works to be re-used, re-worked, re-mixed, re-distributed and retained for non-commercial purposes provided that they acknowledge the original creator with a different licence to be applied to the modified works or new derivative (Belawati, 2014:4).



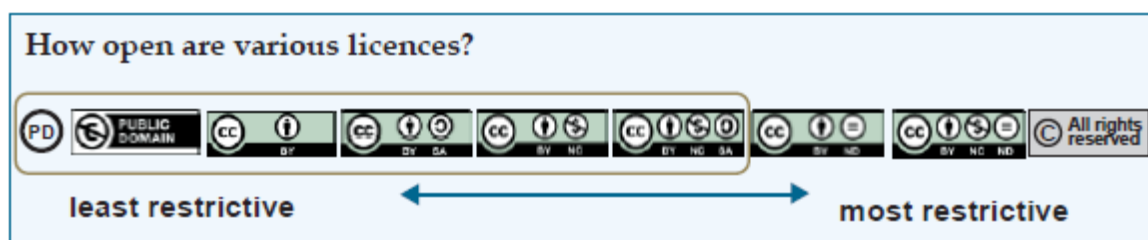
The licence below allows for the original works to be re-used, re-worked, re-mixed, redistributed and retained for non-commercial purposes provided that they acknowledge the original creator and applying the same rules to the modified works or new derivative (Belawati, 2014:4).



The license below allows for the original works to be downloaded and re-distributed provided that the original creator is credited, and does not allow for the application of any changes or use for commercial purposes (Belawati, 2014:5).



Unlike the traditional copyright licences, the CC's six licences differ in terms of restrictions which range from the least to the most restrictive rules as seen in the figure below (Butcher & Moore, 2015:26).



The onus rests with the original creator of the works when it comes to choosing the appropriate licence and, the less restrictive the licence, the more popularity and exposure such educational resources enjoy (Butcher & Moore, 2015:26).

The William and Flora Foundation (2011:13) believes that despite the flexibility offered by the CC licensing options, creators of OERs are encouraged to opt for less restrictive ones as they are likely to expand access and thus increase the knowledge base to all, including the vulnerable and less developed parts of the world. Orr *et al.*, (2015:18) state unequivocally that OERs are dependent on the existence of open licences that support the use of educational resources so that users do not need to pay for access; resources can be copied freely; resources can be re-used without the need to obtain permission first; and derivative works based on the original resources can be created.

The South African Institute of Distance Education (2009:3) maintains that despite strides made in the open licensing field, there is still a great deal of work to be done in terms of convincing the policy and decision-makers of its importance and assuring them that it does not alter course design or development. It has always been a tradition for lecturers to publish their created works within the strict or copyright bound environment, which makes it difficult to share or modify on a large scale (Butcher,

Kanwar, & Uvalic-Trumbic, 2011). However, in licensing OERs, re-use, re-working, re-mixing, re-distribution and retention are allowed, and the copyright owner is still able to enjoy credit during all of the processes and changes in the hands of different users (Butcher *et al.*, 2011).

In order to enable the widest possible use and re-use of the materials, two factors are vital: licence and file formats (African Virtual University 2011:1). Copyright, as it has been understood and applied traditionally, certainly restricts access to knowledge to a privileged few. However, new visions of copyright, as demonstrated by Creative Commons licences, actually open up the possibilities for sharing knowledge and have tremendous positive implications for the field of education (Chow, 2010:2).

The entire open education movement is based on the idea that open licensing leads to far-reaching and beneficial change. By providing an alternative to traditional copyright, open licences make it possible to share and re-purpose materials at marginal cost. (De los Arcos *et al.*, 2016:2). Facilitated by organisations such as Creative Commons, open licences offer creators a ‘some rights reserved’ versus an ‘all rights reserved’ approach to copyright (Bernstein, 2015:477).

Since the bulk of education and research funding comes from taxpayer funds, it is essential to create, adopt, and implement open education licensing policies. The public should have access to what it paid for, and should not be required to pay twice (or more) to access and use publicly-funded educational resources. Every taxpayer in every country has a reasonable expectation of access to educational materials and research products whose creation was made possible through public funding (Commonwealth of Learning, 2016:10).

For many in the education sector, lack of familiarity with this issue can be a barrier to producing, sharing, and/or utilising OERs. It is therefore necessary to clearly inform the potential target group – instructors, students, and others involved within educational institutions – about copyright and OERs, and about the various licences that may apply (Evertse, 2013:6).

## 2.10 INTEGRATION OF OERs INTO TEACHING AND LEARNING

Raneri and Young (2016:581) have observed that the availability of the educational resources that are accessible under open licences continues to grow exponentially with more than 200 universities offering more than 2 500 such courses in 2007. This should be seen as a challenge to the education practitioners to devise well-thought-out plans on how to integrate these OERs into teaching and learning (Karunanayaka, Ratnayake, Naidu & Rajendra, 2016:339). Furthermore, proper plans will also address marketing and promotion strategies which should be innovative enough to reach the targeted audience using the various and current technological devices (Ibid).

Mishra, Sharma, Sharma, Singh and Thakur (2016:56) believe that the successful integration of OERs opens up the lecturers' and students' eyes to a global wealth of knowledge which has a global and local appeal with no restrictions in place and that is seen as a plus in ensuring seamless integration of these resources into teaching and learning (Ibid:55). However, the speed at which such resources would become part of the day-to-day teaching and learning is determined by the reliability of the ICT infrastructure as an important supporting element (Mallinson & Krull, 2015:263). Evertse (2013:1) argues that by adding flexibility factors such as re-use, re-mixing and re-distribution on how the educational resources can be integrated into teaching and learning reduces the times it would have taken to request copyright permissions as is the case with traditional resources.

The Internet has found its way into the teaching and learning sphere as an important tool used by a number of lecturers to search for educational materials that they use as they are, re-mix, share and distribute to those who would benefit, for free (Heinen, Kerres, Schamberg, Bleest & Rittberger, 2016:1). The use of the different digital platforms during the search for quality educational resources in the actual teaching and learning activity has proven to enhance different literacies in both lecturers and students (Ibid). The improvement of these much-needed skills, the different technologies and the evolving pedagogies come together to produce a new way of delivering teaching and learning in both formal and informal environments (Ibid). The digital world provides a flexible world for all stakeholders in teaching and learning to

mine a wealth of knowledge while being given leeway, supported by the open licences, to make modifications, share and use them as they wish (Ibid).

The desire to improve teaching, learning and the resources that enhance education is a priority for educational institutions and their faculty members (Belikov & Bodily, 2016:235). Instructors adopt a variety of learning materials to improve student success, and one of the most heavily adopted learning resources is the textbook (Ibid). In addition, South African institute for Distance Education. (2009:2) has identified OERs as one component which has revolutionised the provision of educational resources in the distance education sector as it relies heavily on such resources. Its presence in distance education has contributed positively towards enhancing curricula through investment in materials development (SAIDE, 2009:2).

It should be emphasised that unlike the traditional ways of teaching, OERs have the ability to assist students in fitting into a knowledge society because they equip them with the relevant skills and competencies which include independent thinking, problem-solving, collaboration, communication, and critical and creative skills (Geser, 2012:16). This will require time and commitment on the part of teachers in terms of mastering and transferring such competencies and skills. This will bear fruit if they are able to allow students to share centre stage in the teaching and learning sphere, an area which they have been occupying for decades, if not centuries (Ibid). In order to see the shift towards the use of OERs in schools taking shape, the commitment of leaders in education will be seen in terms of how they formulate them and create a platform for teachers and learners to be empowered to use them correctly (Ibid:17).

Although OERs are gaining popularity, especially in the developed north, there is still a lack of empirical research regarding the perceptions and experiences of lecturers on their usage and integration into teaching and learning (Belikov & Bodily, 2016:235), hence this investigation.

Although there is agreement with regard to the value of OERs in teaching and learning, the extent of their impact is yet to be confirmed (Mulder, 2011.:2). The arguments made in the open movement circles are that the future of the education resources which are available openly seem promising (Ibid). The hope is that such quality

educational resources will continue to expand and finally reach the majority of the disadvantaged throughout the world and enhance the formal and informal skills of the participating stakeholders (Ibid). Their diversity and flexibility in terms of the use of OERs will assist in expanding the knowledge base (Ibid). According to Harley (2011:10), the ease with which OERs are integrated is attributed to their flexibility and ability to fit beyond specific subjects and, in some cases, they overlap, thus strengthening collaborative efforts within and outside institutions in a country and beyond. Havemann (2016:7) believes that the ability to cut across disciplines, the free access as envisaged by the pioneers of the open movement and the achievement of their vision will be realised once teaching and learning practices embrace such resources to the fullest.

McMurtrie (2017:1) argues that commercial publishers are the latest and most important players who are slowly beginning to acknowledge the role that OERs can play in the teaching and learning sphere. Furthermore, Mr Seaman is quoted as saying that the adoption of OERs is likely to increase because lecturers have the power to select educational resources. On the other hand, he asserts that 'What commercial publishers have that the OER world does not, is a well-established marketing and communications organization that knows how to get information to key decision makers (Ibid). There is still a great deal of groundwork to be done to change the mind-sets of many lecturers who still have different views regarding the efficacy of OERs.

### **2.10.1 Lecturers' Attitudes towards OERs**

Despite the good intentions, there are still sceptical researchers and lecturers who doubt the efficacy of OERs (Veletsianos, 2015:200). This could be caused by a lack of understanding with regard to the capabilities of OERs and the generally confusing messages around sharing using flexible licensing practices (Ibid). These uncertainties are also caused by a lack of empirical research to support the claims made by the Open Movement (Ibid). Although there is slow progress by faculty members in terms of adopting OERs, 6.6% of respondents in a recently conducted survey confirmed that they were 'very aware' of their existence (Blumenstyk, 2016:1). On the other hand, the

expansion of the OER hubs is seen as speeding up the shallow information available on OERs (Veletsianos, 2015:200).

Evidently, many institutions, faculties and lecturers have little knowledge about OERs. Therefore, it is the responsibility of HEIs to see 'Openness as a core organisational value if it desires to both remain relevant to its learners and to contribute to the positive advancement of the field of higher education' (Wiley & Hilton III, 2009:1). The important challenge for researchers is that of deepening the theory and expanding the literature on open practices, thus making the concept well-known and used in many HEIs (Veletsianos, 2015:201).

As a new field in the technological education sphere, OER studies are yet to produce empirical evidence supported by sound methodologies (Mishra et al., 2016:57). This is a challenge to lecturers to go deep and uncover research that will place OERs on a high standard that will translate into positive awareness strategies supported by universally-accepted evidence (Ibid). In addition, the slow pace at which OERs are making inroads is attributed to the attitude shown by some lecturers towards OERs (Raneri & Young, 2016:582). Chief among the questions posed by different lecturers include the following:

- Are general-purpose search tools suitable for academic purposes?
  - Is Wikipedia an OER that should be recommended or shunned?
  - Are there disciplinary differences in the use of OERs?
  - Are there cultural issues in the use of OERs?
  - How useful are OERs if they are not in one's native language?
  - Do OERs require technology not available in some places?
  - How much, if at all, is revised OER material released by secondary users?
- (Raneri & Young, 2016:582).

Lecturers have always misunderstood and felt frustrated about how to strike a balance between determining the quality of educational resources on the open platforms and the maintenance standards that their respective departments or faculties demand from them (Raneri & Young 2016: 582). The fear of incorporating educational resources

whose creators do not hold any reputation is often mentioned as one of the contributing factors that cause some lecturers to resist the use of OERs (Ibid).

According to Blumenstyk (2016:1), even professors are concerned about the escalating costs of educational resources, which has driven some to adopt the free and openly-accessible textbooks as part of their teaching and learning resources. However, despite acknowledging the role that OERs can play, there is no unanimous support among professors and lecturers in general as emphasised by Mr Seaman who says 'They say it's important, but they're really not acting on it' (Ibid).

Such perceptions usually lead to lecturers classifying such resources as sub-standard and only using them as secondary sources of information (Raneri & Young, 2016:582). Some resist participating in the development of OERs as they see them as taking away their valuable time and yet they do not derive any financial rewards from them (Ibid). The lack of proper infrastructure, including repository and funds for sustaining the promotion of OERs, is always seen as a demotivating factor by lecturers as they want to be a part of the projects which not only advance the knowledge base but also lead to them being cited or associated with them forever (Ibid).

It has also been indicated that resistance to embracing change brought about by the introduction of OERs in teaching and learning requires a great deal of convincing on the lecturers' part about their importance (Raneri & Young, 2016:582). Employing a new systems approach in the development, implementation and promotion of OERs at HEIs will contribute to revolutionising the e-learning environment, thus immersing OERs in teaching and learning (Ibid). This is supported by Rolfe (2012:8) who argues that:

[h]ow to grow and sustain these open educational practices is a major challenge, and operational models have described financial, technical, and content based solutions, but more current thinking is placing staff and communities at the heart of the sustainability of OER (Raneri & Young, 2016:582).

This calls for a great deal of ground work to be done to convince all stakeholders, including the lecturers, to show willingness and zeal in terms of integrating OERs into

their teaching and learning activities (Reneri & Young, 2016:582). There is also a variety of attitudes displayed by different lecturers when it comes to the use of OERs, which is related to their emotional preferences and depth of knowledge regarding the effectiveness of these resources (Mishra et al., 2016:55).

Cox and Trotter (2017:152) concur that research in South Africa on, among other things, the lecturers' attitudes, is limited to institutions such as UCT and UNISA as they were the first to completely embrace OERs. There is also little information on their perceptions and experiences, apart from those reported in surveys which focused on these few OER active institutions (Ibid). Prominent questions in the surveys focused on the following:

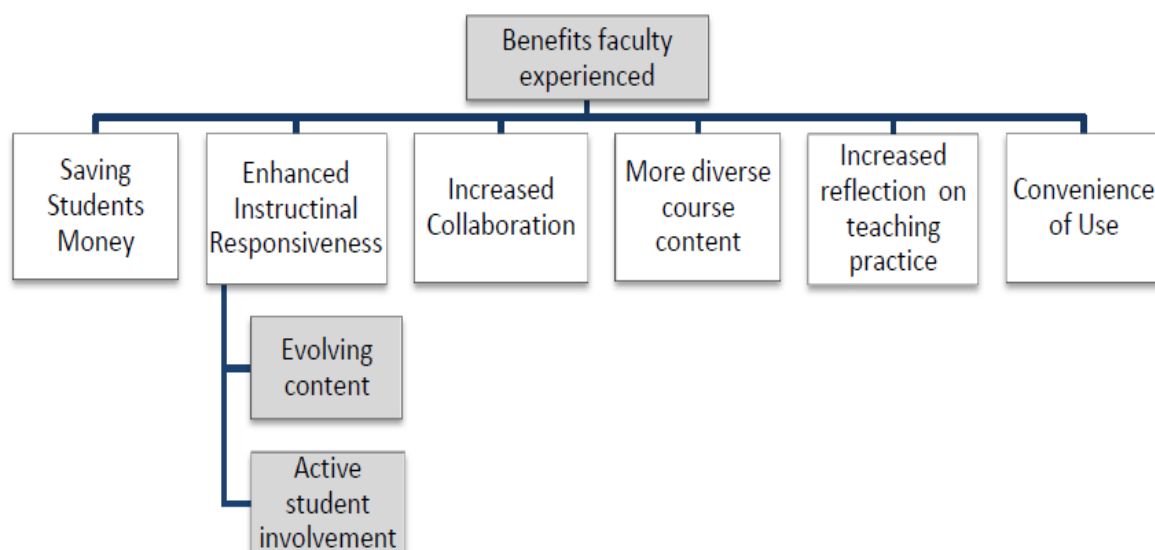
Why lecturers adopt, or do not adopt, OERs at these South African universities; and how such adoption decisions are shaped by a variety of pertinent factors and variables (Cox & Trotter, 2017:152). Bliss, Robinson, Hilton and Wiley (2013:2) recommend that some research be undertaken on the usage of OERs by lecturers and the impact thereof. Such information would add to the meagre/scanty theory on the lecturers' perceptions and experiences of OERs.

Wiley et al. (2017:61) discovered that in several studies where lecturers in HEIs were surveyed, over a quarter seemed to know about OERs in terms of their usage and integration into teaching and learning. Of those with little knowledge about OERs, the common interest and curiosity is usually around their nature and impact on teaching and learning (Ibid). One further agreement among OER researchers is that the usage of these educational resources has positively enhanced teaching and learning with no evidence to the contrary (Ibid). The assurance given, besides adding value to teaching and learning, the use of OERs also has financial advantages in that the beneficiaries are able to access them for free, thus saving money (Ibid:63).

The lack of support systems to ensure the full implementation of OERs in teaching and learning makes it difficult to be fully aware of their implementation and, unless additional research is undertaken, this will forever remain a gap in the research sphere. There is, therefore, a need to create clear guidelines on how to design and implement these support systems (Chae & Jenkins, 2015:9).

In a survey conducted by Chae and Jenkins (2015:11), it was discovered that many lecturers regard OERs either as an alternative or as a recommended resource in teaching and learning. From a pedagogical perspective, these resources are regarded by some lecturers as inferior in terms of forming the backbone of their modules. Those who are willing to use them only include them during the development stages (Ibid:14).

A graphic representation of how lecturers in HEIs perceive or have experienced OERs in teaching and learning is displayed in Figure 2.2. Some of the benefits that lectures associate with OERs include reduction in money spent on resources, opportunities for collaboration within and outside country borders, and user-friendliness experienced by the users of these various resources (Chae & Jenkins (2015:16).



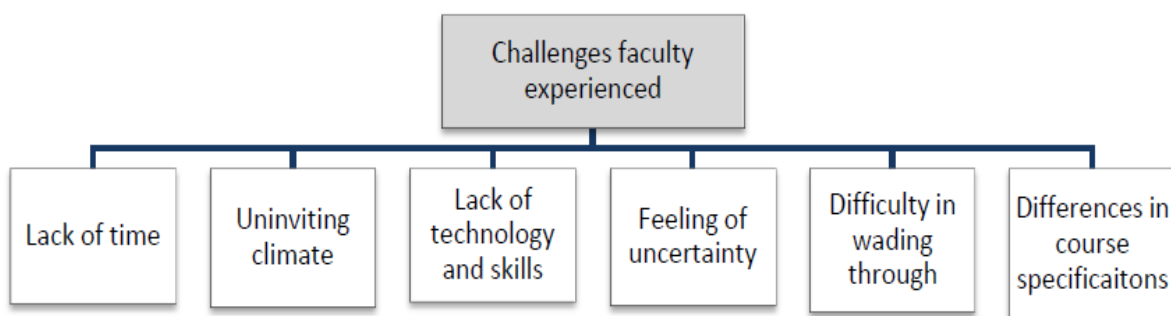
**Figure 2. 2: Benefits for Faculty**

**Source: Chae & Jenkins, (2015:16)**

In addition to the above benefits cited by lecturers, they also indicate some challenges which have been graphically illustrated in Figure 2.3.

Ngugi (2011:280) argues that teachers find it difficult to spend time searching for, creating, sharing and distributing OERs if there is no allocated time to engage in such activities. In addition, they cite unreliable bandwidth and corresponding technology as barriers to accessing and making use of these educational resources (Ibid).

Many lecturers cite, among other things, that they do not have the time to develop, implement and promote OERs in teaching and learning (Chae & Jenkins, 2015:16). In addition, they do not feel confident to navigate through OER repositories due to a lack or limited knowledge of ICT, which is key to accessing, using and sharing them for integration into teaching and learning. Furthermore, they bemoan the lack of common standards across different courses, thus denying them a chance to establish collaborative efforts (Ibid:2).



**Figure 2. 3: Challenges experienced by Faculty**

**Source: Chae & Jenkins, (2015:22)**

As indicated above, the attitudes of the lecturers cannot be ignored by HEIs that are planning to develop, implement and promote OERs (Malaspina, 2009:2). The sustainability of OERs will require a thorough understanding of these views as expressed by different lecturers in order to avoid repeating the same mistakes (Ibid). The evolution of education is always associated with twin factors, namely the Internet and ICT, that changed the education sphere by transforming the traditional ways of creating educational resources to a whole new world that is propelled by the open movement (Ibid).

Kelly (2014:28) argues that proof of the effectiveness of OERs by lecturers depends on many underlying factors that have an influence on their perceptions towards OERs. An understanding of Alfred Bandura's (1977) Social Learning Theory (SLT) and Fred Davis' Technology Acceptance Model (TAM) (1986) assists in making a case for

lecturers' general attitudes towards the integration of OERs into teaching and learning (Ibid). The SL theory and the TAM give a graphic representation of how perceptions can be linked to the level of understanding of technology needed to interact with such resources (Ibid). The behaviour of the individual lecturers towards OERs and the outcomes thereof are linked to what Bandura calls the efficacy and outcomes (Ibid). Graphically, the relationships are demonstrated as follows in Figure 2.4.

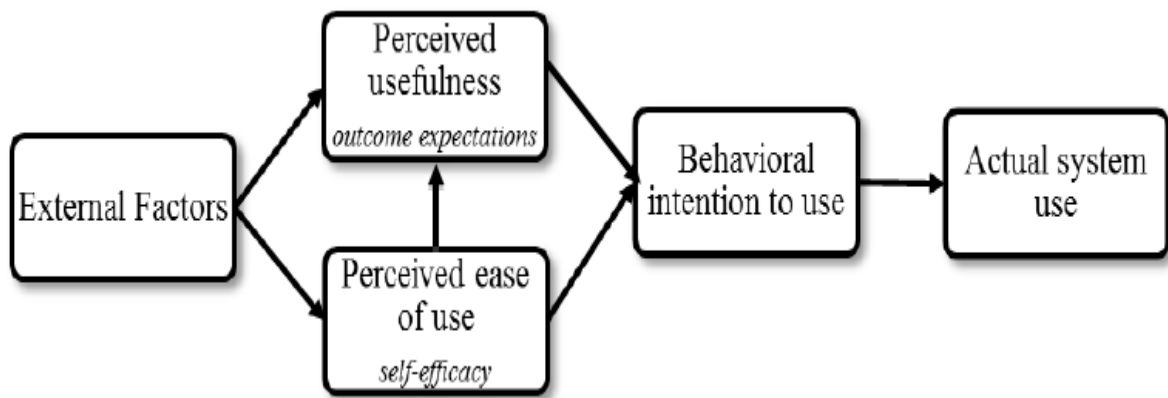


**Figure 2. 4: Efficacy Expectations and the outcome expectations**

**Source: Bandura, 1977 in Kelly, (2014:29)**

The above figure is a representation of the theory indicating that through efficacy expectations (EE), people are likely to either participate or not in any activity based on what they expect to achieve. On the other hand, the outcome expectation (OE) focuses on what would be the ultimate reward once a certain outcome has emerged (Kelly, 2014:29).

The TAM model, whose roots are linked to the above theory, looks at how people behave when new technologies are introduced to them (Kelly, 2014:29). It also explains how certain factors contribute towards the acceptance or rejection of the technologies introduced (Ibid). As indicated in Figure 2.5 below, the combination of the TAM and SLT has produced valuable results.



**Figure 2. 5: A combination of TAM and SLT**

**Source: Kelly, (2014:30)**

The influence of external factors that include the design of the technology that may be linked to its user-friendliness and adding value to the workflow, may enable the user to prepare him or herself for using or rejecting the technology (Kelly, 2014:29). Both the theory and the model play an important role in the data analysis section where the perceptions and experiences of the UFS lecturers are gauged.

One interesting finding with regard to the lecturers' perceptions and experiences can be likened to an iceberg (Orr *et al.*, 2015:30). Even though there are signs of OER usage, the size is small, much like the tip of an iceberg, when in fact there is active integration into teaching and learning, which makes up the bigger part that remains submerged below the surface of the water (Ibid).

The final decision as to whether or not to integrate OERs into teaching and learning depends mostly on the lecturers' perceptions and the trustworthiness of the resources (Hassler *et al.*, 2014:6). In addition, the ease of use, ability to share educational resources, and interoperability have been cited frequently as having an influence on the adoption of OERs into teaching and learning (Ibid).

Furthermore, lecturers are reluctant to adopt OERs due to a lack of knowledge by policy-makers and managers who should be at the forefront of promoting them (Plotkin, 2010:2). According to Plotkin (Ibid), although there is widespread information about OERs, it is still common to find that lecturers are clueless about their existence

and, in some cases, confuse them with any other material that is accessed on the Internet. Conole, Pepler, Bacsich, Padilla & Bird, (2016:449) cite that the reluctance by some lecturers to upgrade their knowledge of ICT and thus engage with OERs is seen as another factor that appears in the Pearson report on faculty attitude towards IT. The report reveals that as little as 7% of the members of different faculties see the correlation between accessing online courses and achievement of the set outcomes (Ibid).

Although a number of studies acknowledge that OER knowledge is still in its initial stages, the little that is available is yet to uncover the role that psychological elements play in encouraging or discouraging the use and integration of OERs into teaching and learning (Belikov & Bodily, 2016:237).

Initially, the implementation of OERs at UCT was based on a verbal commitment from management with no backing in the form of written policy (Hodgkinson-Williams *et al.*, 2013:7). The absence of a policy and, subsequently, guidelines made it difficult to influence and shift lecturers' mind-sets towards OER integration (Ibid). The consoling part was the uncovering of evidence that some OER elements such as sharing were being actively used by faculty members who were champions for the open movement (Ibid:70).

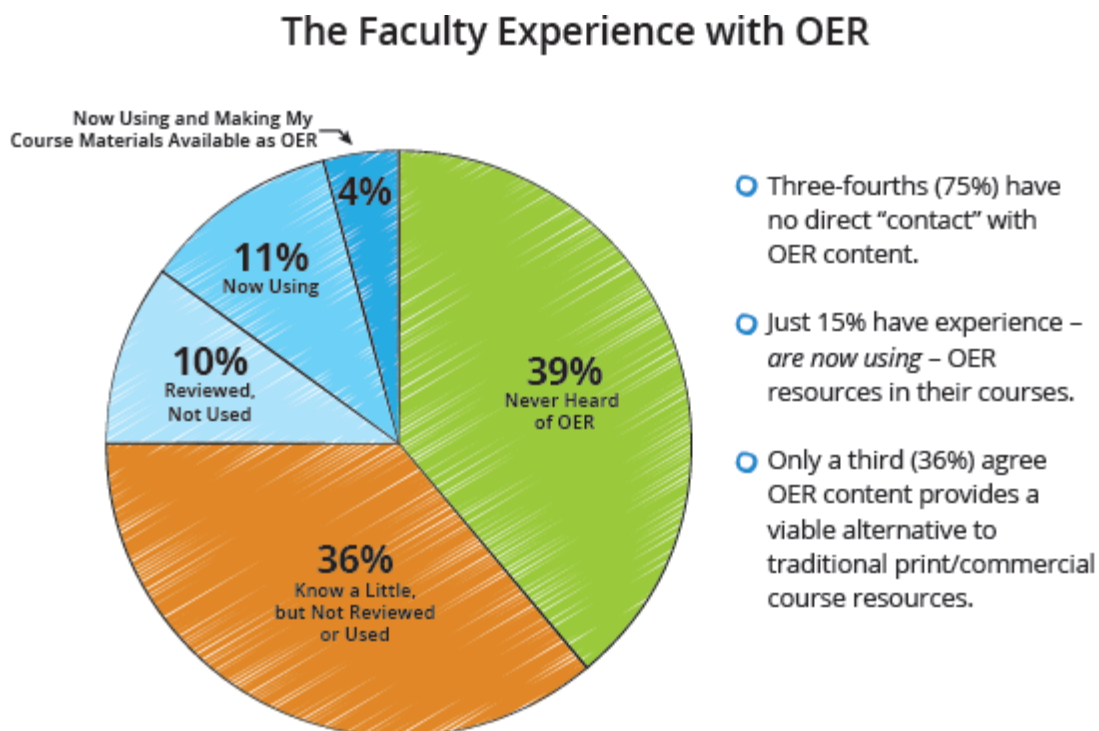
Mishra *et al.* (2016:56) also found that if the lecturers do not feel comfortable with the use of different technologies, they are unlikely to explore, collect and make use of materials, including OERs, in their teaching and learning activities. However, the advanced and more user-friendly media technologies are slowly creeping in and drawing interest even from the novice lecturers. Subsequently, their change in attitude is seen as leading to the exploration and integration of OERs into teaching and learning (Ibid).

The connected world has therefore redefined the role of the 21<sup>st</sup>-century teacher in terms of the way in which he or she engages with his or her students in teaching and learning. The way in which information is connected on the Internet requires a paradigm shift from the traditional way of teaching towards the digital age which views

the teacher as the discoverer, modifier, sharer and distributor of knowledge (Ozturk, 2015:6).

Jhangiani, Pitt, Hendricks, Key and Lalonde (2016:10) discovered, by means of the Boston Consultancy Group report, that lecturers still perceive ‘proven efficacy’ and ‘trusted quality’ as important considerations when it comes to the integration of OERs into teaching and learning.

According to Cengage Learning (2016:4), the lecturers’ responses with regard to the use of OERs differ depending on the prevailing conditions. There are similarities that can be drawn from the Independent College Bookstore Association (ICBA) and the 2014 Babson Reports on ‘Lecturers’ perceptions towards OERs’ (Ibid). In terms of their experiences, as seen in Figure 2.6, as little as 4% of the lecturers were actively using OERs in teaching and learning in comparison with the 35% and 39% who either knew little about the use of OERs or had never used them, respectively (Ibid).



**Figure 2. 6: Faculty experiences**

**Source: Cengage Learning, (2016:4)**

Although the results on lecturers' perceptions reveal very interesting information, it is important to understand that qualitative results are subjective in nature and their analysis needs careful consideration before drawing conclusions (Cox & Trotter, 2017:154). Since such results are subjective and internally influenced, context plays an important part, which means that the final assessment should combine and take all of these factors into consideration (Ibid).

## **2.11 SUSTAINABILITY OF OPEN EDUCATIONAL RESOURCES**

According to Pegler (2010:1), as in any other field of study associated with long-term maintenance of the project, the sustainability of educational resources rests on how the institutions craft and present compelling and convincing strategies to the funders and all additional stakeholders (Ibid). Sustainability, according to Hodgkinson-Williams *et al.* (2013:43), is determined by the production of empirical research where evidence is presented to prove the efficacy of the OERs produced within the university, in both teaching and learning.

The sustainability of OERs has always depended on the types of donors and their willingness to stand by the institutions for a long time (Butcher & Hoosen, 2012). Economic support therefore features prominently and attractive strategies need to be crafted to ensure sustainability of the OERs (Orr *et al.*, 2015:110).

According to Weller (2016:40), the sustainability of OERs rests heavily on sources of finance that are committed to taking the journey from inception, through implementation and beyond. The commitment shown by organisations such as the William and Flora Hewlett Foundation, has allayed fears in many institutions by not only supporting them from the beginning, but also teaching them about the different ways in which they can stand on their own (Ibid).

Yuan, Robertson, Campbell and Pegler (2010:1) add that when it comes to sustainability:

Successful projects will also work to develop processes and policies to embed the practice of open educational resources release beyond the funded life of the

project. We would expect to see clear evidence within proposals of an intention to do this. Bidders should also describe a business model supporting this process.

As pioneers who continue to support OER initiatives across the world, the William and Flora Hewlett Foundation (2011:10) argues that the sustainability of the OERs will, in a way, be prolonged by the expansion of OERs to all corners of the world. They contend that if OERs permeate all corners of the globe, even the most reluctant institutions will be forced to promote OERs and encourage their integration into teaching and learning (Ibid). The foundation further promises to offer support until different kinds of flexible education resources become freely available under open licence practices (Ibid).

According to Goodwin (2011:25), the reality that all stakeholders need to be aware of is that financial backing will always be the core of OER sustainability. This is supported by Downes (2007:32) who argues that:

It is commonly pointed out that even though a resource may be free for the consumer, it does not follow that the resource is free in the sense that it nonetheless costs something in funding or services to create and distribute a resource (Goodwin, 2011:25).

The above truth means that although OERs are freely available everywhere, money is needed to create, place them on different platforms, distribute and share with the likelihood of regular updating by qualified quality controllers (The William and Flora Hewlett Foundation, 2011:10). In addition, sustainability will be guaranteed through financial backing in areas of research, development and advocacy (Ibid). The promise for support from major stakeholders such as the HEIs will ensure that OERs stand the test time and that they will only be sustained if they are committed to making OERs part of the long-term integration into teaching and learning (Ibid:11).

As OERs continue to spread across continents, it should be acknowledged that different models will have to be continually developed and improved in order to not only increase their sustainability but also maintain quality standards and keep

relevance in check all the time (Geser, 2012:12). The flexible models are those which will keep the OER market alive for a long time (The William and Flora Hewlett Foundation, 2011:10). The chosen model should also take into consideration the need for publication in print and electronic formats, the services fee, and accreditation for certain courses as well as assurance of backing from both public and private institutions (Ibid). Geser (2012:12) maintains that the sustainability of OERs also depends on the use of reputable creators of knowledge who, at some point, will need to be awarded or recognised for the sterling job of providing quality educational resources for free.

Hodgkinson-Williams *et al.* (2013:9) cite the UCT OpenContent as an example of the OER initiative that, in the beginning, enjoyed overwhelming support but which waned with time with the result that alternative means of survival had to be found. These authors further argue that in an institution such as UCT, where historical and socio-economic factors always have to be taken into consideration, hard work is needed to ensure the sustainability of OERs (Ibid:43).

A shift in mind-set and a wholesale culture change should be enforceable in order for OERs to form part of the daily teaching and learning activities at UCT (Hodgkinson-Williams *et al.*, 2013:43). The open movement will also need to present the government with a proposal that will call for a legislation that will declare publicly-funded research to be categorised as public good (Ibid). The sustainability of OERs depends on embedding open practices into institutional policies and services, and on encouraging open sharing in existing communities such as subject networks (Yuan *et al.*, 2010:4).

Discoverability has been cited as one of the means to ensure the sustainability of OERs in that if the OERs that are produced in-house are made public, they are likely to reach a wider audience and may even lead to future collaborations across the boundaries of different HEIs (Yuan *et al.*, 2010:5). In addition, the establishment of Communities of Practice (CoP) represents a platform for collaboration and sharing of ideas and educational resources (Ibid:6).

## 2.12 OER POLICY AND FUNDING MODELS

The advancement of OERs that is directly linked to Web technologies opened a platform for educational resources to be freely accessed, transferred and shared (Kursun, Wilson, McAndrew & Cagiltay, 2010:1). To sustain these ideals, policies need to be put in place to ensure that the resources continue to reach out to the needy (Ibid).

According to Lynn, Muzellec and Bruton (2010:2), in order to ensure that there is a proper framework for the integration of OERs in HEIs, different models have been developed, including the endowment, membership, donations, conversion, contributor-pay, sponsorship, institutional, governmental, replacement, foundation, segmentation and voluntary support models. The majority of the current models have their foundations cemented in not-for-profit making principles while a few have been developed for commercial purposes (Ibid). The following models are commonly used during the development of various OERs:

**The institutional model:** This allows the individual institutions to take full responsibility for the development, implementation, promotion and sustainability of the envisaged OERs. The MIT's OpenCourseWare OER project falls within this model (The William and Flora Hewlett Foundation, 2011:13).

**The governmental model:** Through this model, the government is the primary funder of the OER project. In some cases, internationally-recognised agencies such as the United Nations, play a role that is linked to this model (The William and Flora Hewlett Foundation, 2011:13).

The development of OERs and their sustainability are directly dependent on the availability of funding (Evertse, 2011:6). This is unavoidable because the development of OERs and their accessibility to the public is costly in terms of time and money (2011:6). Such a development process is carried out by institutions with the ultimate aim of providing proof of return on investment (Evertse, 2013:6). Like the MIT model, there should be tangible evidence in the form of income generated from the OER development (Ibid).

### 2.12.1 OER Policy Development

In response to the continued reduction in funding and subsidy provided by both government and agencies, OERs are now part of the strategic priorities in many HEIs (Yuan et al., 2010:1). The development of OER policies should further examine various ways of embedding the resources into teaching and learning over the long term, and this should go beyond the initial stages which are normally well-funded (Ibid:4).

Stacey (2014:69) argues that successful OER development requires a bottom-up approach and that the environment should be strongly supported by a good and well-crafted policy. The support of important role players, such as the government, is usually established through the use of a good policy and guidelines which are capable of being continually revised along the adoption route (Ibid). Having a policy assists in convincing all of the stakeholders within institutions that educational resources should be open rather than closed, thus opening up opportunities for collaboration with the outside world (Ibid:70). Van der Woert, Schuwer and Ouwehand (2015:57) contend that open policy is seen by many institutions as a passport to highlighting the need for integrating OERs into teaching and learning. Having open policies can also open up opportunities for gaining grants and funding from interested stakeholders (Ibid). Open policies also assist in expanding knowledge through public investment on OERs (Ibid).

It took Creative Commons a number of years to successfully craft its open policy which can be described as a valuable knowledge bank that gives clear guidelines on how to implement open practices (Van der Woert *et al.*, 2015:58). Its mission is published as advocating the establishment of open policies that lead to the creation of educational resources that are freely available and whose source of finance is the public purse (Ibid).

Since the first policy on OERs was developed, a number of good and challenging ideas emerged from both lecturers and discipline course specialists (McGreal, 2010:1). Although the subsequent policies can claim attachment to those which came first, the advancements in the online environment bring new opportunities for learning and modifications to meet the current challenges (Ibid).

McGreal (2010:1) argues that any OER policy should be in simple and easy to understand language. It must speak to the different stakeholders and their responsibilities should be clearly spelt out. For example, McGreal (Ibid:7) asserts that during the creation of a module, the interfaces must be free from glitz and there must be few or no complex designs. The course objectives need to be listed in a simple way and the targeted users should be able to respond without doubt. Core and additional material that will form part of the course should be included in the course designs (Ibid).

Kelly (2014:2) believes that the ideas behind the creation of the open movement should penetrate both government and HEIs in order to address the shift in terms of the way in which educational practices are crafted and presented as a result of the influence of the Internet. The proper crafting of OER policies will ensure that there is sustainable creation and maintenance of these valuable resources (Ibid). The increase in modularised courses in many HEIs is mostly due to the presence of the OER policies which open some of these courses to the global audience following the open licence practices (Ibid).

For OER policies to thrive in HEIs there should be an existing national policy document which would serve as a blueprint for individual institutions as they embark on the journey to opening their educational resources to the world (Kelly, 2014:2). In addition, the need for collaboration by all stakeholders cannot be over-emphasised and, in most cases, this includes the government, private and public sectors and non-profit organisations (International Council for Open and Distance Education, 2014:11). The presence of government is viewed as crucial in that it will assist in taking leadership which will strengthen ties with international institutions offering similar courses, making it easy for the affected institutions to exchange ideas on course development and promote the interoperability of OERs, including understanding the culture and languages used (Ibid). It is also suggested that government should ensure that the national OER policies developed should be both holistic and coherent in their approach in order to accommodate diversity and promote inclusivity and national identity (Ibid). Furthermore, the national OER policy should speak to the critical issues that will guide the inception, implementation and sustainability processes (Ibid). There

is also a call for the national policy to address the way in which funding models should be identified and, subsequently, provide tools for assessment and continuous monitoring of the OERs at institutional level (Ibid). The presence of flexible national policy will allow individual institutions to exercise flexibility and foster localisation and adaptation of the OERs and, in the process, promote the principles of OER, namely the re-use, remixing, and expansion of knowledge through sharing (Ibid:12).

Successful development of national OER policies usually includes clauses that encourage HEIs to embrace OERs by providing incentives which would encourage collaboration at both local and national level which then increases innovative practices across the world (International Council for Open and Distance Education, 2014:12). The inclusion of private-public partnerships as another tool for establishing a successful national OER policy assists in ensuring that there is a sustained relationship between institutions and the market out there (Ibid).

One good example of the importance of including government in driving the development of a national policy was in Norway in 2006 (International Council for Open and Distance Education, 2014:13). They made a sum of NOK 50 million available for the development of digital learning resources of high quality. The goal was to allow the country's education council to participate in the development of the OER policy which would see the creation of digital learning resources of high quality which would benefit the country's citizens, taking into consideration the diverse population, including culture and languages (Ibid:130). The government instructed the affected stakeholders to further look into the establishment of a repository which would accommodate and allow for translation, cultural adaptation, and accessibility across the country (Ibid:3).

Many institutions have managed to develop their policies by using the existing ones as reference (The William and Flora Hewlett Foundation, 2011:18). They assist in ensuring the smooth adoption across the nation and guarantee the continuous production of OERs beyond the implementation stage (Ibid). A clear advocacy programme which is addressed in the national policy will also encourage the expansion of OER development in all faculties which may be reluctant to jump onto the bandwagon (Ibid). Policy makers are also encouraged to craft OER policies that reward faculties for developing and revising OER policies to address the evolving

needs (Ibid). Moreover, such policies should be strict and uncompromising on applying open licences to all content that is publicly funded (Ibid).

The policy formulation process should advocate for open educational practices which emphasise a learner-centred approach and the creation of a rich and relevant teaching and learning environment that takes into consideration the various needs of the knowledge economy. As part of their strengths, knowledge societies have a solid digital foundation which makes it easier for all of the critical competencies and skills to flourish and thus advances the philosophies which made it possible for the OERs to enter the teaching and learning sphere (Geser, 2012:17).

OERs should be seen as a socially inspired innovation that has the ability to facilitate various creative ways that promote collaboration between teachers and learners (Geser, 2012:30). The maximum utilisation of OERs will be realised only if they are recognised as part of the education policies that are aimed at levelling the playing field (Ibid). More emphasis should be placed on identification of the loopholes in the education that can be filled in by including OERs (Orr *et al.*, 2015:32). One example to be learned from those countries who have fully implemented OERs is that their focus was mostly on overcoming educational challenges at a minimum cost (Ibid).

Furthermore, Orr *et al.* (2015:32) advise that all stakeholders, within and outside including philanthropists, should place more emphasis on developing sustainable OER models which should be reflected in their strategic plans. Sustainability can only be maintained if there is a constant source of income from reliable stakeholders whose interest is on the survival of OERs across the globe. Licensing agencies that offer flexible and free options should also be taken on board throughout the whole process of OER development (Ibid). Their role should be clearly indicated in all OER policies in order to ensure sustainability over a long time (Orr *et al.*, 2015:32).

Furthermore, and according to Orr *et al.* (2015:33), lecturers as the implementers would need to be brought together in order to foster collaboration, development, revision and sharing of OERs. The establishment of Communities of Practice across the education sector will create a platform for new skills to be developed, the creation of collaborations and sharing of ideas by lecturers as they continue to learn more about

OERs (Ibid). A number of studies have shown that effective teaching and learning thrive in an environment where lecturers are allowed to collaborate and share skills (Orr *et al.*, 2015:33). The flexible nature of the OERs gives lecturers a leeway to reuse and revise their developed educational resources to suit the various teaching and learning environments (Ibid). The exchange of ideas that is brought about by collaboration amongst lecturers has been identified as one the key elements in the development of lecturers (Ibid). The production of high quality educational resources due to collaboration by lecturers needs constant support and encouragement from all quarters to ensure sustainability. Currently, it has been observed that the use of OERs is mostly based on 'just-in-time' enhancements instead of more strategic, reflective integration (Ibid).

From a policy point of view and as a way of avoiding reinventing of the wheel, developers of OERs need to identify existing OER repositories, tap into them, and use their resources to establish theirs (Orr *et al.*, 2015:36). The most direct way of ensuring the production of OERs is to provide direct funding for new educational materials, which should have the characteristics of OERs (Ibid). The creation of OER repositories in some HEIs has given them the leeway to revise such resources including the modification of their licenses to suit their unique situations (Ibid). However, it would be wise for all stakeholders to be consulted including the creators of knowledge base a way of ensuring fair use of educational resources (Ibid). Having flexible rules to the use of OERs increases the chances of being used by many institutions across the globe (Ibid). One option is to establish common agreement that, by default, recognises publicly-funded educational resources as OERs (Ibid). Such a regulation should include a clause that calls for all newly developed OERs to be based on existing OERs, and that any modification of the existing resources should be encouraged (Ibid).

The call for policy formulations that embrace OERs has often resulted in the establishment of concrete initiatives on the development and promotion of OERs (Geser, 2012:37). In such policy formulation initiatives it has been acknowledged that ICTs play a central role in the total overhaul and movement from the traditional teaching and learning environment to one that promotes innovation and re-skilling of teachers and learners on the creation, accessing and implementation of OERs (Ibid:17).

In addition, according to the policy paper published in 2006, 'the knowledge gap on learning innovation' is a major problem (Geser, 2012:17). Furthermore, it has been acknowledged that wider adoption of the freely available 'social software' for educational and lifelong learning purposes could have an enormous innovative impact as they are ideally suited to learner-centred as well as collaborative approaches in developing competences required in our knowledge society (Ibid).

A well-balanced OER definition will always encompass a number of requisite ideas which have continued to deepen research, teaching and learning on the concept. OERs are considered to be those resources that allow educational institutions free access to all forms of open content, including access to their respective metadata. They are also identifiable for licences with no strict rules which allows for access and modification to suit the needs of the different users. On a digital platform, there should be easy access to Open source software whose source code is available to everyone with an interest in advancing the principles of OERs (Geser, 2012:17).

The sharing of learning materials will help to increase the amount of available high-quality materials, thus facilitating the realisation of a rich learning environment and increasing opportunities for customised education. Open education can also contribute to the realisation of other policy goals formulated in the strategic agenda, such as the further internationalisation of education (Schuwer & Wild, 2015:10).

Schuwer and Wild (2015:12) argue that as indicated in the Paris OER declaration, the presence of national policies can help stimulate countries to embark on an adoption drive which would be aimed at encouraging HEIs to craft their individual policies to openly share their content. Examples of countries which heeded the call for the development of open OER policies include Slovenia, Poland and Scotland (Ibid).

Patrick, Bliss and Tonks (2013:7) strongly believe that national open policies on OERs should allow for flexibility in that individual institutions should be able to develop content which reflect their uniqueness. They may also collaborate across states or provinces to expand the knowledge base on the chosen disciplines with developed educational resources reflecting the richness of both their respective regions and the

country at large (Ibid). Such collaborative practices during the development of OERs should consider issues such as workflow and clear plans on how the OERs will be developed and ultimately made accessible as free educational resources (ibid). They emphasise the need to adhere at all times to the international standards in order to ensure consistency across the globe(Ibid).

Sending a message to the government official on the importance of OERs requires a concerted effort from all of the stakeholders concerned, and this was successfully done by an organisation in the US called OERUSA. In 2015, OERUSA sent a strongly-worded letter to the then President, Barack Obama, pleading with him and his government to approve a national policy on OERs (OERUSA.ORG, 2015:1). The letter from OERUSA.ORG (2015:1) states:

We, the undersigned organizations from the education, library, technology, public interest and legal communities are writing in response to the Office of Science and Technology Policy's call for ideas to strengthen the U.S. Open Government National Action Plan. To ensure that the value of educational materials created with federal funds is maximized, we call upon the President to issue a strong Administration policy to ensure that they are made available to the public as Open Educational Resources to freely use, share, and build upon.

OERUSA.ORG (2015:2) further mentions the financial benefits that would emerge from the use of OERs across the country. They made it clear that it was time for the developed educational resources, which are sold at very high prices, to be treated as public good and thus accessed under open licences. They referred the president to the 2014 Open Government National Plan which recognises the role that OERs play in advancing open practices within the USA administration (Ibid). OERUSA.ORG (Ibid) further acknowledges his government's recognition of the impact of OERs in a much-publicised initiative entitled 'Promote Open Education to Increase Awareness and Engagement' where it is clearly stated that:

There is a growing body of evidence that the use of open education resources improves the quality of teaching and learning, including by accelerating student comprehension and by fostering more opportunities for affordable cross border and cross cultural educational experiences.

Advocacy groups such as OERUSA have given many citizens across the world reference material which could be used to lobby for the establishment and subsequent implementation of national OER open policies.

According to the Commonwealth of Learning (2016:10), there are over 130 national, state, provincial and institutional policies that are accessible through the OER Policy Registry and whose content allows HEIs to openly share their content by applying open licensing processes (Ibid). New open policy projects such as the Open Policy Network and the Institute for Open Leadership are well-positioned to foster the creation, adoption and implementation of open policies and practices that advance the public good by supporting open policy advocates, organisations and policy makers, connecting open policy opportunities with assistance, and sharing open policy information (Commonwealth of Learning, 2016:10)

The developed OER policies should have content that can be easily integrated into existing learning technologies, including assessment and analytics (Cengage Learning, 2016:7). The ultimate goal should be to see students' performance improving and be on the same level as that of the rest of the world. Cengage CEO (Ibid) is quoted as saying:

The longer game with OER is really in the adaptive and customization capabilities to spur learning outcomes ... People don't just want OER content in a pdf, they want a blended experience through technology.

A number of private companies such as Cengage Learning (2016:7) support the OER national policy development as they have seen that they are too big to be ignored and that their impact continues to spread to all corners of the globe. They also warn that a great deal of time and effort is needed to find, organise, and integrate OERs into higher education courses. They promise to use their financial muscle to support current national open policies by proving their expertise in terms of the development of content using cutting edge learning technologies and current service standards that will deliver the vision enshrined in many policies that advocate for the development, implementation and promotion of OERs (Ibid).

### 2.12.2 Policy Implementation

According to OERUSA.ORG (2015:4), the successful implementation of OERs rests heavily on the government's willingness to support the implementers at all stages. It is the government's responsibility to ensure that access to quality education, improvement of content, and knowledgeable workforce become top priorities, with the necessary funds being made available for these activities (Ibid). The presence of the national open policies should assist the implementers in adhering to the key principles which include a broader definition of the type of educational materials that should fall under and be described as OERs (Ibid). The Internet coverage throughout the country should be addressed in order to allow for the accessibility of educational materials in a variety of digital formats (Ibid:14). There must also be a platform for all OERs to be used to their fullest, with alternative means for re-use, re-working and remixing if the users so wish (Ibid:5).

According to OERUSA.ORG (2016:6), the implementation of the national policies should not be delayed, but should be implemented by HEIs within twelve months of enactment with continuous reviews along the way. Cox and Trotter (2017:154) suggest that the different views of lecturers and their existing work circumstances need to be included in the completed policy as the two are determinants in the successful implementation and sustainability of OERs.

According to Orr *et al.* (2015:30), the positive and lasting impact that OERs will have in teaching and learning depends on how they were introduced to the lecturers. They caution against introducing OERs mainly as replacements for expensive and copyrighted educational resources as such a strategy may inadvertently lead to increased access with little impact on effective teaching and learning (Ibid). It such approaches that negatively affect the successful implementation of OERs in many HEIs (Ibid). It is therefore important that OERs are pedagogically integrated into the teaching and learning sphere in totality (Ibid).It should be noted that the introduction of OERs may not necessarily change the entire education system but contribute to the creation, within the curriculum, of a collaborative and innovative learning environment (Ibid:33).

The presence of a *Draft Policy for the Development and Use of Open Educational Resources for the University of Ghana*, caused the implementation of OERs to run smoothly as there was a plan in place to guide all of the affected stakeholders in terms of addressing issues such as quality, time and the allocated timeframe required for the implementation to take place (Harley, 2011:20). The University of Ghana's (UG) institutional policies fall under the 'symbolic' and 'substantive' categories in that they are purposeful and show commitment to supporting the creation and implementation of OERs in their totality (Ibid). In addition, the UG policies take into consideration the additional time set aside by faculties and lecturers to ensure that the policy is implemented within the specified timeframe across the institution (Ibid).

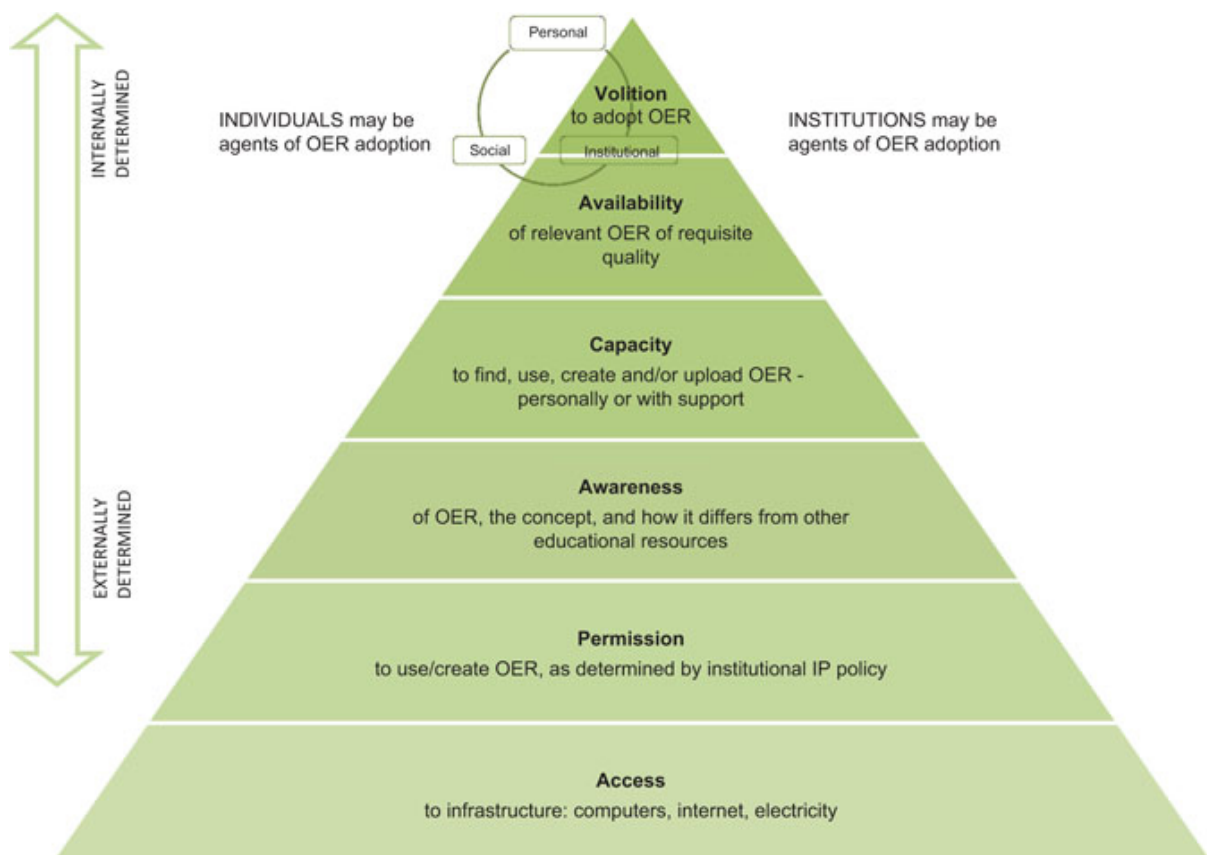
In 2010, the University of Cape Town's OpenContent directory was launched with the emphasis on ensuring that there were clear guidelines on the implementation of OERs across the institution (Harley, 2011:21). The OpenContent, as a repository for content, was used to expose the open content to not only the UCT community but also to the world at large (Ibid). In addition, the VULA (UCT's Learning Management System) aims at creating a platform for collaboration in sustaining the open courses by offering support to all of the stakeholders (Ibid). The initiatives were undertaken to make resources available for important stakeholders that include teaching and learning, research and community engagement (Ibid).

In South Africa, the University of the Western Cape (UWC) can be referred to as one of the first HEIs to adopt OERs, as early as 2005. Although, at first, the policy remained symbolic, during the recent past, the institution has seen the need for the actual implementation of OERs (Harley, 2011:21). To ensure the smooth implementation thereof, the UWC engaged in prior assessment of the gaps. The UWC acknowledged the need for policy modification in order to create a platform for OERs to thrive (Ibid).

The challenge still being addressed by the institution is to identify champions who will advocate for its full implementation. However, in the absence of prominent institutional champions and impulses from within, one would not expect a review of this kind to have immediate effect (Harley, 2011:21).

According to Cox and Trotter (2017:156), the process of adopting OERs can be speeded up and enhanced by following what they refer to as the adoption pyramid framework as seen in Figure 2.12.2. The pyramid has its roots in a theory of needs which was coined by Maslow, and which is notable for a broad base and narrow top (Ibid). The framework, like Maslow's theory, is divided into six categories: access, permission, awareness, intellectual awareness, capacity, availability and volition (Ibid).

Cox and Trotter (2017:156) argue that the different stages should be understood as representing the different levels of adoption of OERs by lecturers. They further describe the lower layers as being influenced by the external environment and, as one moves up the pyramid, the control tends to become more internal (Ibid). For example, access depends solely on the provision of a proper infrastructure such as electricity, computers and the Internet (Ibid). In addition, the top level, namely volition, represents the extent to which individual lecturers show commitment to fully embracing OERs in teaching, learning and research (Ibid).



**Figure 2. 7: The OER Adoption Pyramid**

**Source: Cox & Trotter, 2017:155**

The Open movement believes that the wholesale embracing of OER policies at HEIs rests heavily on three important elements: user awareness and motivation to use OERs; infrastructure providing the content and tools needed to find, use and modify them; and, lastly, buy-in from all stakeholders in order to ensure their sustainability (Schuwer & Wild, 2015:11).

In addition, Schuwer and Wild (2015:11) believe that the creation of a diverse and rich learning environment is likely to influence a desire to create, share and make OERs openly available. The presence of platforms for collaboration and sharing of OERs increases the chances of all members of the global community to discover educational resources of high quality (Ibid). An active Community of Practice is increased and sustained by a platform that not only presents its members with enjoyable navigation tools but also allows them to be a part of the global community as they are allowed to have their voices heard through discussion and collaborative exercises provided by such a platform (Ibid).

Karunanayaka, Ratnayake, Naidu and Rajendra (2012:341) concur that the implementation of OERs depends mostly on the change in mind-set by all stakeholders and the commitment to embrace innovation as an integral part of teaching and learning in the 21<sup>st</sup> century. Such a change in lecturers, for example, depends on their personal drive and vision, curiosity, mastery and capacity to form collaborations (Ibid).

De los Arcos, Farrow, Pitt, Perryman, Weller and McAndrew (2016:3) believe that the implementation of OERs occurs in a world that is influenced by a number of open-related factors and whose extent varies from country to country. The contributing factors singled out include the context in which the OERs are implemented, the level of education of society and the dominance of cultural factors (Ibid).

De los Arcos, Farrow, Pitt, Perryman, Weller and McAndrew (2016:3) maintain that it is the presence of clear policies which speed up sharing practices. They further support Cable Green from Creative Commons who says that 'Knowledge wants to be free'. This calls for institutions and affected stakeholders to advocate for free access

to knowledge that has been created from public funds (2016:6). Furthermore, McAndrew (2012:2) argues that the presence of a proper infrastructure assists in speeding up the sharing of the created content. This also requires open licensing and the use of open software to ensure that there are no copyright issues to contend with during the access, use, sharing and modification of such educational resources (Ibid). For the implementation of OERs to succeed, HEIs need lecturers who are able to support and take their students through the labyrinth of the developed content which should include support tools and feedback on those resources that test their performance (SAIDE 2015:8). It should also be made clear that the institutions and academics will, at some point, have to be on the alert and protect their created material from being sold by unscrupulous academics who may want to make money out of them (Ibid).

### **2.12.3 OER Policy Promotion**

The survival of OER policy depends solely on the correct integration programmes which will receive buy-in from all within the university community (SAIDE, 2009:5). SAIDE (Ibid) has distinguished itself by lending a hand during the development, implementation and review of policies on areas related to OERs. They are able to take the institution through the processes of adapting the existing policies to accommodate OERs and make them part of the new strategies towards improving educational practices within the higher education environment (Ibid).

Miao, Mishra and McGreal (2016:vii) argue that the rapid spread of OER policy is stifled by resistance from stakeholders, publishers, policy-makers and academics. In addition, due to differences in governance issues, it is difficult to collate data relating to the costs involved in implementing OERs (Ibid). However, in countries such as Antigua and Barbuda, there is collected evidence that confirms that OERs have the ability to transform teaching and learning practices by influencing pedagogies (Ibid).

The identification of OER policy champions within institutions assists in promoting the policy to all corners of the institution. It is also important that training is offered to the champions so that they speak with one voice when embarking on the drive to promote OER policy (Harley, 2011:19). At UCT, where the Health OER initiative has

complemented already existing OER activities, there are multiple OER champions (Ibid). In an institution in which real power is vested in the deans, the Health Sciences Dean was described by a Deputy Vice Chancellor (DVC) as someone who has worked 'tirelessly' to promote OERs. With a strong background in the previous institution at which she worked, the DVC (Teaching and Learning) was well placed to promote the OER strategy across the institution. The Centre for Educational Technology (CET) continues to play an influential role that ensures that not only is OER policy sold, but that it is embraced by all stakeholders (Ibid).

OER policy creation, implementation and promotion rely on an acceptance from all levels of governance. Governments that adopt a systematic approach to the policy development of OERs are likely to have a smooth implementation and receive a positive response from all HEIs (Miao, Mishra & McGreal, 2016:vii). Countries such as Canada, India and Brazil that emphasise capacitating citizens from grassroots have reported good results in terms of the implementation and sustainability of OER policies. These countries' OER policies are also never tampered with due to political changes as they have been accepted across the political divide (Ibid).

According to Patrick, Bliss and Tonks (2013:6), the promotion of OERs should not include the content or learning material that was purchased from the third party. This is important in that it may serve as part of sharing and collaborative efforts needed to improve and add value to home-made OERs (Ibid).

The ease of distributing OERs can facilitate access to high-quality educational resources by all (Chae & Jenkins (2015:27). For this to occur, it is likely that OERs will have to be modified to fit various teaching and learning environments. Chae and Jenkins (2015:27) further argue that one of the tools to promote OERs is the provision of proper support to lecturers and faculties. A clear workflow or training on accessing OERs should be undertaken on an ongoing basis as part of professional development. Sustained partnerships with sister faculties and local HEIs help to promote sharing of and adding value to OERs and ensure sustainability (Ibid). OERs can be easily promoted if there are available funds to develop marketing tools which would assist in reaching out to many people within and outside the institution (Ibid).

### **2.13 CONCLUSION**

In conclusion, OERs have come a long way and continue to evolve in response to global challenges. The expansion of the HEIs that embrace the development, implementation and promotion of OERs on a global scale is seen as a leveller of the playing field. In this way, the gap of inequality between the developed North and developing South will continue to narrow, thus fulfilling the initial aims of the inventors of the Internet, the open movement, and specifically the OERs. The success of the knowledge economy depends solely on the sustainability of its pillars, namely discovery, capture sharing and sharing.

In any study, a suitable theoretical framework is regarded as the backbone that assists in answering the research question. The KM processes model has been selected to assist the researcher in obtaining information with regard to the perceptions and experiences of the UFS lecturers in terms of the integration of OERs in teaching and learning.

## CHAPTER 3

### THEORETICAL FRAMEWORK

#### 3.1 INTRODUCTION

This study was developed based on the Knowledge Management (KM) Model processes in figure 1.3. The model will be discussed in detail in this chapter. Becerra-Fernandez and Sabherwal (2010:4) refer to Peter Drucker, the father of KM, who asserts that unlike the traditional economic resources such as land, labour and capital, knowledge has become a valuable resource in many developed nations. They also quote his belief with regard to the role that knowledge plays in our society:

[W]e need systematic work on the quality of knowledge and the productivity of knowledge ... the performance capacity, if not the survival, of any organization in the knowledge society will come increasingly to depend on those two factors (Ibid).

The proliferation of educational resources such as OERs on Internet platforms is in response to Drucker's belief that knowledge wields power in that it has the ability to create an equal society through the provision of quality education at no cost across the globe. This is confirmed by Thomas Jefferson who said 'He who receives ideas from me, receives instruction himself without lessening mine; as he who lights his taper at mine receives light without darkening me' (De Hart et al., 2015:19).

Cobo (2013:108) further argues that in the current knowledge economy, technology has taken a central role in the production and application of knowledge. In addition, Becerra-Fernandez and Sabherwal (2010:8) assert that information technology (IT) has contributed positively to the expansion of KM in that it has facilitated the creation, storage, sharing and application of knowledge over a wider area, at no cost at all. When he introduced the concept of Open Content in 1998, Wiley dreamed of a society which would benefit from freely-available educational resources whose content is shared to expand academic knowledge across the globe (Cobo, 2013:108).

Information technology, according to Becerra-Fernandez and Sabherwal (2010:8), makes it easy for information to be created and disseminated more quickly and efficiently. It has further provided a number of opportunities that facilitate the implementation of KM applications (Ibid).

The higher education sector is, therefore, expected to play an important role in promoting change that points towards the creation of a society that embraces innovation and product development (Cobo, 2013:108). Cobo (Ibid) further refers to Hurmelinna, Kyläheiko and Jauhiainen (2007:142) who believe that an evolving economy thrives and sustains itself through the introduction of new mechanisms of knowledge creation, integration and sharing (Cobo, 2013:108).

As knowledge expands in the higher education sector, KM has made it possible for it to be shared through improved applications mechanisms (Siemens & Tittenberger 2009:8). It is also the introduction of the Artificial Intelligence and machine-learning technologies in the education field that have elevated knowledge discovery, capture, sharing and application of various educational resources on a wider scale (Ibid).

### **3.2 KNOWLEDGE MANAGEMENT PROCESSES MODEL**

According to Becerra-Fernandez and Sabherwal (2010:56), KM refers to:

*Performing the activities involved in discovering, capturing, sharing, and applying knowledge so as to enhance, in a cost-effective fashion, the impact of knowledge on the unit's goal achievement.*

KM is made up of four processes which make it possible for knowledge to be discovered or captured. These processes allow for knowledge to be shared and applied. They are also relevant in the education sector where OERs are created, shared and applied in many areas within the teaching and learning sphere (Becerra-Fernandez & Sabherwal, 2010:56). The following are the four processes which make it possible for knowledge to be discovered or captured.

### 3.2.1 Knowledge Discovery

The production of information in the 21<sup>st</sup> century has shifted from being monopolised by a few individuals or organisations to everyone who has the capacity to discover, store, share and apply it in daily activities (Siemens & Tittenberger, 2009:2). Such a shift towards the discovery of information on an individual level led to the influential *Time Magazine* naming 2006 the year of the person (Ibid). *Time Magazine* also noted the exponential growth of the individually-discovered and valuable knowledge across the globe which is usually found in different formats such as videos, blogs, and wikis (Ibid). These unique discoveries are usually freely available to be accessed over many Internet platforms. They are discovered to be shared as educational resources at little or no cost with flexible licensing rules in place (Ibid).

By identifying 2006 as the year of the person, *Time Magazine* wanted to highlight and recognise the role that individuals from across the globe play in the discovery of knowledge which is later shared and modified across the borders in a matter of seconds and with no legal limitations in place (Siemens & Tittenberger, 2009:2).

Knowledge discovery may be defined as *the development of new tacit or explicit knowledge from data and information or from the synthesis of prior knowledge* (Becerra-Fernandez & Sabherwal, 2010:56). New explicit knowledge is discovered wherein multiple bodies of explicit knowledge (and/or data and/or information) are synthesised to create new, more complex sets of explicit knowledge (Ibid). Existing explicit knowledge, data, and information are re-configured, re-categorised and re-contextualised to produce new explicit knowledge (Ibid).

The synthesis of tacit knowledge across individuals usually happens through joint activities rather than written or verbal instructions (Siemens & Tittenberger, 2009:27). For example, by transferring ideas and images, apprenticeships help newcomers to see how others think. Davenport and Prusak (1998) describe how conversations at the watercooler helped knowledge sharing among groups at IBM (Becerra-Fernandez & Sabherwal, 2010:56).

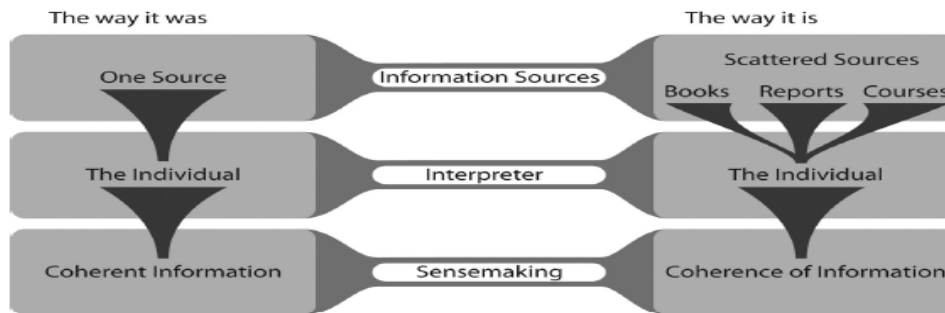
### 3.2.2 Knowledge Capture

Knowledge capture may be defined as *the process of retrieving either explicit or tacit knowledge that resides within people, artifacts, or organisational entities* (Becerra-Fernandez & Sabherwal, 2010:58). Knowledge capture also involves converting tacit knowledge into explicit forms such as words, concepts, visuals, or figurative language (Ibid). It helps translate individuals' tacit knowledge into explicit forms that can be more easily understood by the rest of their group (Ibid).

Furthermore, it involves the conversion of explicit knowledge into tacit knowledge. It represents the traditional notion of learning. Explicit knowledge may be embodied in action and practice so that the individual acquiring the knowledge can re-experience what others have gone through (Becerra-Fernandez & Sabherwal, 2010:59).

Siemens and Tittenberger (2009:2) recognise the need for the information residing in individuals to be organised and packaged in a framework which will make it easier to store, distribute, and re-use or modify in order to suit different teaching and learning environments. They emphasise that knowledge can only have an impact on society if it is arranged in a coherent way where individual sources of information are drawn together, sorted according to similarities and differences, and consolidated so that it can be easily interpreted by interested parties who want to make sense of it (Ibid).

The teaching and learning sector relies on the use of such a structured framework where information is packaged and made easier to share and apply in different situations in order to expand the knowledge base (Siemens & Tittenberger, 2009:2). Figure 3.1 below indicates how these scattered pieces of information are put together by aggregators, and packaged as valuable educational resources which can be easily accessed and used by both lecturers and students. The figure also indicates that unlike in the past, nowadays lecturers are not only spoiled for choice, they need skills to delve into these tons of information in order to separate grain from chaff.

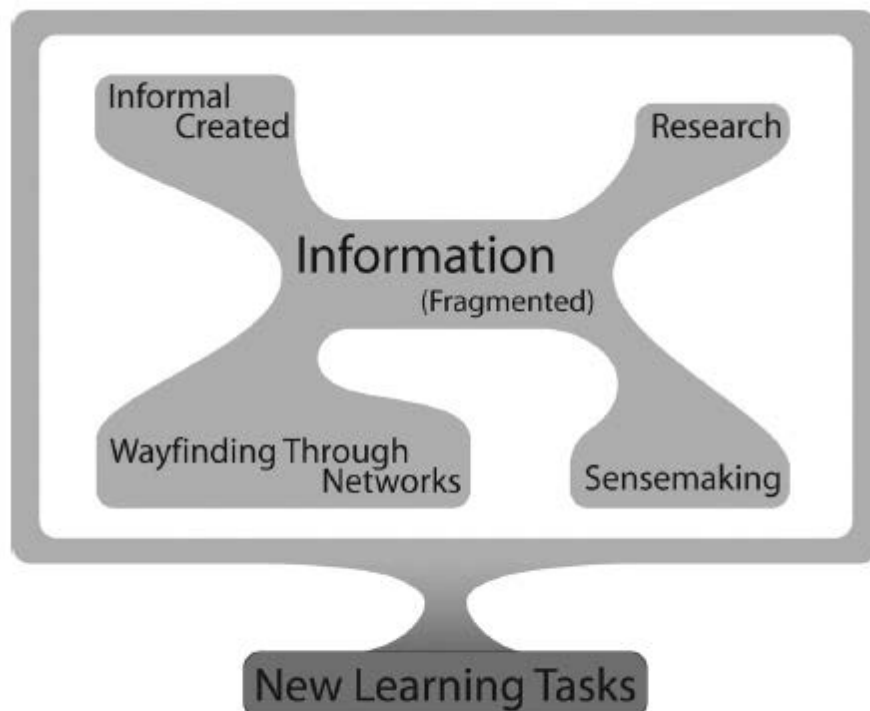


**Figure 3. 1:** *Fragmentation and coherence*

**Source: Siemens & Tittenberger, (2009:2)**

Currently, there are many organisations which have committed themselves to bringing together these scattered pieces of information, and organising and packaging them in a form that makes it easier for both lecturers and students to access, copy, store, share and integrate into different teaching and learning activities. The aggregators, as these companies are called, allow both lecturers and students to be in charge of their learning by making these educational resources freely available over the Internet with flexible licensing agreements and thus allowing learning content to be more easily consumed by members of the public (Siemens & Tittenberger, 2009:2).

The packaged learning content therefore requires certain skills from both lecturers and students to pull out, identify and select relevant information to serve their educational needs (Siemens & Tittenberger, 2009:2). Developing such skills makes it easier for them to identify the different peer networks which are dedicated to offering educational resources which can assist in making sense of their current and future educational needs. Lecturers, in particular, are able to make use of these educational resources to craft new learning tasks and pedagogical models (Ibid). Figure 3.2 indicates how educational resources are drawn from different sources, and organised and packaged into teaching and learning units that are then used by both lecturers and students to make sense of various teaching and learning phenomena.



**Figure 3. 2: Sources of information**

**Source: Siemens & Tittenberger, (2009:2)**

A number of these educational resources can prove to be credible through the use of peer-review mechanisms that are still recognised by many educational institutions (Siemens & Tittenberger, 2009:3). Unlike the traditional scholarship, models of peer-reviewing, online journals, such as Innovate and the International Review of Research in Open, Distributed Learning (IRRODL), and the Public Library of Science (PLOS) have come up with new models that allow annotation and peer-review to take place after the publication of their resources (Ibid).

Some online educational resources allow individuals to participate and make contributions during the creation of information, thus allowing for the sharing of ideas and expansion of knowledge (Siemens & Tittenberger, 2009:3). The presence of such models in the creation of educational resources over the Internet has placed sustained pressure on scholarship in higher education to adopt and adapt the new ways of integrating educational resources into teaching and learning (Ibid).

### **3.2.3 Knowledge Sharing**

Knowledge sharing is the process through which explicit or tacit knowledge is communicated to other individuals (Becerra-Fernandez & Sabherwal, 2010:60). The process of sharing OERs is not foreign to the teaching and learning domain as Wiley, Green and Soares (2012:82) argue that “Education is a matter of sharing, and the open educational resources approach is designed specifically to enable extremely efficient and affordable sharing”.

It is through the sharing of knowledge that organisations that embrace innovation have managed to increase their performance levels (Becerra-Fernandez & Sabherwal, 2010:60). One such organisation is General Electric, who, under the stewardship of Jack Welch, made it their responsibility to share and encourage sharing of ideas and resources, including human resources (Ibid).

The sharing of information remains one of the sole purposes of education. It is the responsibility of each and every teacher to ensure that his or her students benefit from information sharing session at all times (Wiley *et al.*, 2012:82). The success of any teacher-student interaction is determined by the amount of sharing which has taken place, thus leaving the students knowledgeable and information-rich (Ibid).

Drawing from the above, by their nature, educational resources should be about sharing in a barrier-free environment. At the root of this idea lies the principle of openness which is a strong philosophy within an educational foundation. The Internet has made it possible for all of these educational resources that underpin these beliefs and philosophies within the education field to be freely shareable across the globe (De Hart *et al.*, 2015:19).

### **3.2.4 Knowledge Application**

Knowledge application may refer to the process that involves the utilisation of knowledge embedded in procedures, rules and norms that guide future behaviour (Becerra-Fernandez & Sabherwal, 2010:61). It may also refer to the process through

which the individual possessing the knowledge directs the action of another without transferring to that individual the knowledge underlying the direction (Ibid).

The process of knowledge application depends on the available knowledge, and knowledge itself depends on the processes of knowledge discovery, capture, and sharing (Becerra-Fernandez & Sabherwal, 2010:60). The better the processes of knowledge discovery, capture and sharing, the greater the likelihood that the knowledge needed is available for effective application in decision-making and task performance (Ibid:61).

OERs *boost opportunities for learning* by applying knowledge over a wider context (new opportunities for learning); *improves materials based on open review purposes* (student/user provides open peer review); *contributes to reputational benefits*, providing important exposure for faculty and institutions (visibility and recognition); and *increases the sharing of ideas* (new opportunities for people to exchange ideas about the resources provided) (Cobo, 2013:109).

In conclusion, the domination of knowledge in the current era calls for organisations to change their mind-sets and get rid of the old-school thinking that focused on land, labour and capital. The 21<sup>st</sup>-century institutions will succeed if they embrace knowledge and all its processes. The expansion of ICT has created a fertile ground for knowledge to be captured, discovered, shared and applied to diverse audiences over wider spaces.

## **CHAPTER 4**

### **RESEARCH DESIGN AND METHODOLOGY**

#### **4.1 INTRODUCTION**

This chapter begins by introducing the chosen research paradigm. This is followed by the research design and methodology for exploring and achieving a deeper understanding of the perceptions and experiences of university lecturers on the use of OERs. The chapter also provides a detailed account of the selection of research participants. In addition, the participants' rights are addressed in the section on ethical considerations. Furthermore, the data analysis methods used are discussed, followed by the quality assurance criteria that have been employed to ensure the trustworthiness of the study.

#### **4.2 RESEARCH DESIGN**

With reference to this study, a descriptive case study has been selected to answer the research questions set out in the first chapter. There are many views on what a case study is. According to Simons (2009:21), a case study is an 'in-depth' exploration from multiple perspectives of the complexity and uniqueness of a particular project, policy, institution, programme, or system in a real-life context (Maree, 2012:83). This study was confined to UFS lecturers' perceptions and experiences on the use of OERs in teaching and learning. This is in alignment with Merriam (2009:40) who asserts that in a case study, the researcher is expected to delimit the study to identifiable ends, thus avoiding mixing it with unnecessary information.

Furthermore, this research follows Stake's (2005) argument regarding the importance of setting up boundaries in that a case study has the ultimate goal of pointing towards the desired outcomes (Mertens, 2010:233). Stake claims that "the more the object of study is a specific, unique, bounded system, the greater the rationale for calling it a case study" (Mertens, 2010:233).

According to interpretivists, case studies have the unique feature of bringing together the unique individual views, and make sense, using the consolidated report, of the phenomenon under study (Maree, 2012:75). The UFS lecturers' individual perspectives regarding the use of OERs afford them an opportunity to contribute towards their understanding of the phenomenon's influence on their teaching and learning activities. The selection criteria discussed below sought to identify only those lecturers who would assist in extracting the information that would be a true reflection of their individual perspectives and experiences on the use of OERs in teaching and learning.

In this study, the researcher adopted a qualitative approach and an interpretivist paradigm in order to view the world through direct interaction with the lecturers in their offices (Denzil & Lincoln, 2000:3; Mertens, 2010:225). The interview was specifically chosen to assist in uncovering the experiences and perceptions of the UFS lecturers with regard to the OER phenomenon (Mertens, 2010:225). Once collected, the data were organised using the NVivo qualitative data analysis software, and the results represent the unique and subjective views of the participants (Maree, 2012:59).

Following the interpretivist's approach, this study makes sense of the OER phenomenon in that the researcher relied on the individual views of the participants to make meaning. By delving deep into the presented meaning, insights were gained and conclusions drawn with regard to the way in which OERs were either used or not by the lecturers at the UFS (Maree, 2012:59).

The involvement of the UFS lecturers as participants was intentionally decided upon to allow them, as individuals, to make sense of the OER world and share their individual meanings in order to benefit other global players who have the interest of OERs at heart (Maree, 2007:59). Interpretivists further propose that one's knowledge and understanding are always limited by the things to which one has been exposed, the unique experiences and meanings that have been imparted on them (Ibid:60). It is that understanding of the uniqueness of individuals, their subjective views and the limitations that they possess, that influenced the choice of the research design whose characteristics are firmly guided by specific limits.

### **4.3 RESEARCH METHODS**

The research question asked: *What are the perceptions and experiences of lecturers at the University of the Free State (UFS) on the usage of OERs in teaching and learning?* The research therefore focused on the way in which the lecturers at the UFS perceive and experience the integration of OERs in teaching and learning. In addition, the researcher explored the extent to which the individual lecturers view the use of OERs in teaching and learning routines. The lecturers' opinions, as well as their personal practices, were the guiding points during the whole research process (Henning et al., 2004:30).

#### **4.3.1 Selection of Research Participants**

The selection of participants for this study was based on the assertion by McMillan and Schumacher (2014:345) that qualitative studies are uniquely carried out by interacting with participants in their natural settings. Following this route either eliminates any form of manipulation of data by the researcher or surrounding circumstances as the participants offer their unique and subjective views (Ibid).

McMillan and Schumacher (2014:347) also argue that drawing data directly from the identified participants assists not only in constructing reality from their unique standpoints but also in making meaning that best reflects their uniqueness. This approach further adds subjectivity, which is a key element in a qualitative study, and the selected lecturers contributed to this study by giving their views that are more likely to be unique (Ibid). The researcher believes that it was from the diverse opinions that were expressed by the participants that meaning could be related to the main research question.

Although participants are likely to be overwhelmed by biases and subjectivities during the collection of data, it is such traits that need to be identified, analysed and reported on to make sense of the phenomenon under study (Merriam, 2009:15). An understanding of the influence of self in the research process has also been taken into consideration as it cannot be detached from making sense of the OER phenomenon. The choice, therefore, with regard to the selection of participants was specifically made

to allow such multiple views to thrive and add more meaning in terms of understanding the integration of OERs into teaching and learning.

For this case study, participants were identified from the population of UFS lecturers who met the set criteria (Leedy & Ormrod, 2013:151). The selection was, therefore, purposive. Purposive sampling generally means that participants are selected because of some defining characteristic that makes them the holders of the data needed for the study (Maree, 2012:78; Paton, 2002:242). Selection decisions are therefore made for the explicit purpose of obtaining the richest possible source of information to answer the research question (Ibid). Due to the nature of the job that they do, UFS lecturers have the rich information that is needed to answer the main research question. This uniqueness in terms of the jobs lecturers do and the information that accrued from the selected purposive sampling are confirmed by McMillan and Schumacher (2014:350) who believe the selection of participants is based on the deep knowledge that they possess in relation to the phenomenon under study. Merriam (2009:77) further argues that the use of specific criteria when selecting participants assists in including only the traits that match the requirements of the study and that such traits are usually found in people with specific information that is likely to enrich the research (Ibid:78). When it comes to the selection of UFS lecturers as participants, the criteria identified include the number of years that the lecturers have been teaching in an academic institution, and the faculty in which they are lecturing. With reference to section 5.2.1, eighteen lecturers participated and they are from the Faculties of Humanities, Health Sciences, Economic Management Sciences and Natural and Agricultural Sciences.

Furthermore, the use of maximum variation that is part of any purposive sampling assists in the identification of those candidates who represent a wide variety of traits that form part of the phenomenon (Patton, 2002:234). For this study, maximum variation sampling was chosen as a strategy to illuminate different aspects of the research problem (McMillan & Schumacher, 2014:350). The selected UFS lecturing staff had varying degrees of experience in the teaching and learning with some who had taught for five or less years whilst others had more than five years of teaching experience. This meant that they were likely to display perceptions and experiences on OERs based on the years they had spent in the teaching and learning field. The

diverse traits that the UFS lecturing staff possessed as important requirements for a qualitative study assisted in enriching the type of information that was needed during the subsequent analysis and reporting.

#### **4.3.2 Data Collection**

According to Leedy and Ormrod (2013:142), in qualitative research, data collection is carried out in a systematic way and the researchers determine the limits as they strive to make sense of the case under study. Although the process may be tedious and time-consuming, the researcher may, as is the case with this study, rely on audio-tapes to ensure that the original views are captured (Ibid:151).

Leedy and Ormrod (2013:151) argue that successful data collection methods always take ethical principles into consideration. This means that the participants need to receive detailed information about what their role will be; and this is usually provided through the issuing of the informed consent form (Ibid). Such a form ensures that the participants' views will not, at any stage, be linked to them and that the collected data will be kept in a safe place (Ibid). Privacy is therefore a priority and participants will also need to be assured that the collected data, once used will be destroyed and that only pseudonyms may be used during the reporting process (Ibid).

During the data collection stage, as many as five methods may be used to gather data including observation, interviews, questionnaires, document review and the use of audio-visual resources (McMillan & Schumacher, 2014:369). For this study, interviews were selected as a suitable and proper method that has the ability to answer the stated research questions (Ibid).

Maree (2012:89) contends that as important data collection tools in a qualitative method, interviews are preferred by many researchers in order to extract valuable information from participants who rely mostly on their values, beliefs, opinions and experiences. It is through interviews that the researcher obtains the rich information that will be provided by the participants who themselves are guided by the real world around them (Ibid).

DeMarrais (2004:55) simply defines an interview as 'a process in which a researcher and participant engage in a conversation focused on questions related to a research study' (Merriam, 2009:87). However, Paton (2002:340-341) concludes:

[W]e interview people in order to find from them those things we cannot directly observe ... we cannot observe feelings, thoughts, and intentions. We cannot observe behaviours that took place at some previous point in time. We cannot observe situations that preclude the presence of an observer. We cannot observe how people have organized the world and the meanings they attach to what goes on in the world. We have to ask people questions about those things. The purpose of interviewing, then, is to allow us to enter into the other person's perspective.

What makes interviews more important is that the answers are usually an individual's views, opinions or experiences and, in some cases, they uncover unplanned valuable information (Leedy & Ormrod, 2013:154). In line with the prescripts of qualitative research, in this study, semi-structured individual interviews were conducted.

With reference to the chosen type of interviews, semi-structured interviews are regarded as flexible in that researchers do not apply a systematic and straightjacket approach during interaction with participants (Maree, 2012:87). Sometimes referred to as less conventional and flexible, semi-structured interviews still require the interviewer to give his or her undivided attention as new and emerging trends may unfold during the interaction with the selected participants (Ibid). Semi-structured interviews give an interviewer a leeway make some follow-ups and probing question to get more clarity (ibid).

In this study, semi-structured interviews were captured using an audio-recorder. After receiving the informed consent of each participating lecturer, the audio-recorder captured the whole interview in order to ensure that all of the required information was acquired. The interviewer relied on the interview schedule that was is represented by Appendix F. This ensured that follow-up questions and new developments were addressed within the interview period. All interviews were conducted in the lecturers' respective offices and lasted no longer than 45 minutes. The collected data was then analysed using the selected data analysis tool.

### 4.3.3 Data Analysis

In line with the principles underpinning the qualitative data analysis approach, this study follows an interpretivist philosophy that extracts meaning from the collected data (Maree, 2012:99; Leedy & Ormrod, 2013:142; MacMillan & Schumacher, 2014:395). This is done through the consolidation of the individual responses from the participants during the interview process (Ibid). During the qualitative data analysis stage of this study, the participants' perceptions, attitudes, knowledge, values and understanding played an important role in constructing new knowledge as seen from the individual's constructed realities (Maree, 2012:99). The participants contributed to the research by expressing their individual and subjective views on the use and integration of OERs in teaching and learning. The collected data was transcribed using NVivo data analysis software in order to facilitate data analysis and research report writing (Ibid:144).

NVivo was used to assist with the analysis of the data collected during the interviewing of different UFS lecturers (Thomas, 2010:207). NVivo is a specialised software with the ability to dissect data documents, audio or videos into themes and patterns thereafter (McMillan & Schumacher, 2014:410). During data analysis, I employed an inductive approach in that the main themes and patterns emerged from the relationship established from the collected data (Leedy & Ormrod, 2013:142; MacMillan & Schumacher, 2014:395; Maree, 2012:99). The codes, categories and emerging patterns that were subsequently identified were linked to components of the KM process model, namely data capturing, storage, dissemination and application (Becerra-Fernandez & Sabherwal, 2010:56; Leedy & Ormrod, 2013:142; MacMillan & Schumacher, 2014:395; Maree, 2012:99). In section 5.2.2, the established themes were identified and used together with sub-themes during the interpretation and presentation of findings (Creswell, 2014:53; Maree, 2012:108).

In any qualitative research, the likelihood of invading privacy is very high, which requires the involvement of ethical principles at all times (MacMillan & Schumacher, 2014:362). In this research, ethical considerations have been taken into account, and include informed consent, privacy and anonymity (Ibid).

## **4.4 ETHICAL CONSIDERATIONS**

According to MacMillan and Schumacher (2014:362), any researcher knows the role that participants play in the success of the project and it is therefore important to apply ethical principles that will protect them and ensure that their views will not, in any way, disadvantage them in future.

### **4.4.1 Permission to Conduct the Study**

In order to have access to the participants who form the backbone of this study, permission had to be sought from various responsible parties. These included the Vice Rector: Academic (see Appendix A); Faculty Teaching and Learning Managers (see Appendix B); the Faculty of Education's Ethics Committee (see Appendix C); and UFS lecturers (see Appendix D).

The Vice Rector had to be approached because, by nature, this study falls under Teaching and Learning, a section in the Vice\_Rector's portfolio. Faculty Teaching and Learning Managers are specifically responsible for the disciplines that are offered in the different Faculties. They may be regarded as the umbilical cord between the researcher and the different lecturers. The Faculty of Education Ethics Committee was chosen because the study falls under the Faculty and the committee is responsible for approving all of the studies conducted within the faculty. The lecturers are the primary sources of information, and permission had to be sought from them and those willing to participate had to sign a consent form.

### **4.4.2 Informed Consent**

The eighteen lecturers who responded were from Humanities (HUM), Health Sciences (HS), Natural and Agricultural Sciences (NAS) and Economic and Management Sciences (EMS). The lecturers from Education, Law and Theology faculties did not respond. The informed consent in Appendix E provides detailed reasons for conducting the research, what the participants were expected to do and how their names and data would be handled in accordance with internationally-approved standards and procedures.

#### **4.4.3 Confidentiality**

To guarantee the confidentiality of the participants, their identities were not linked to the research; instead, only pseudonyms were used. Therefore, their identification will remain anonymous. In addition, the audio-recorded data used to gather the different lecturers' views were kept and stored in password-protected devices.

#### **4.4.4 Privacy and Empowerment**

Deception violates informed consent and privacy. It is important that researchers negotiate with participants so that they understand the power that they have in the research process. This power and mutual problem solving that result from it may be an exchange for the privacy lost by participating in the study (McMillan & Schumacher, 2014:363). The selected lecturers were at liberty to withdraw from the research any time they wished to do so and were assured that this would not disadvantage them in any way.

### **4.5 TRUSTWORTHINESS**

In a qualitative study, the credibility of the data collected and analysed is always based on proven scientific procedures that are not only transparent but universally accepted. The key point is that as long as there are acceptable scientific processes in place which guide the choice of the criteria, the results of the research will gain a universal credibility stamp across the board (Maree, 2012:60).

Quality indicators for qualitative research are dependent on the approach and purpose of the study (Mertens, 2010:255). Standards for evidence and quality in qualitative inquiries require careful documentation with regard to how the research was conducted and the associated data analysis and interpretation processes, as well as the thinking processes of the researcher (Mertens, 2010:255). Criteria for judging the quality of qualitative research that parallel those for judging positivist, quantitative research have been outlined by Guba & Lincoln, (1989) (Mertens, 2010:255)..

According to Mertens, (2010:255), Guba and Lincoln (1989) equate credibility with internal validity, transferability with external validity, dependability with reliability, and confirmability with objectivity, all of which add authenticity to qualitative research.

#### **4.5.1 Credibility**

According to Guba and Lincoln (1989), credibility is the criterion in qualitative research that seeks to establish whether there is a correspondence between the way in which respondents actually perceive social constructs and the way in which the researcher portrays their viewpoints (Mertens, 2010:254).

In this study, credibility was established by employing member checks, which involved seeking verification from the participants as to whether the recorded information represented what transpired in the interviews, and whether it represented their genuine views (Mertens, 2010:257).

#### **4.5.2 Transferability**

According to Guba and Lincoln (1989), transferability is the parallel concept to external validity and enables readers of the research to make judgements based on similarities and differences when comparing the research situation to their own (Mertens, 2010:259). The involvement of eighteen UFS lecturers who met the set criteria yielded broad and diverse content with regard to their perceptions and experiences on the use of OERs in teaching and learning.

#### **4.5.3 Confirmability**

Guba and Lincoln (1989) describe confirmability as the qualitative parallel to objectivity. This means that the data and their interpretation are not figments of the researcher's imagination (Ibid). Qualitative data can be traced back to their source, and the logic used to interpret the data should be made explicit (Ibid). This might include employing a confirmability audit to attest to the fact that the data can be traced back to its original sources, and that the process of synthesising the data to reach conclusions can be confirmed (Mertens, 2010:260). Yin (1994) refers to this as

providing a 'chain of evidence'(Mertens, 2010:260). For this research, even though pseudonyms were used, they are a true reflection of the different and subjective views of the UFS lecturers who participated in the study. The application of the member checks also serves as a measure of confirmability.

#### **4.5.4 Authenticity**

According to Guba and Lincoln (2000), authenticity refers to the presentation of a balanced view of all perspectives, values and beliefs (Mertens, 2010:257-258). Fairness means that the researcher must be able to identify the respondents and be able to explain how the information about their constructions was obtained (Ibid). In this study, the subjective views of the UFS lecturers are presented as they are and any differences or similarities are established. The presence of the audio-recorded data may be re-used to establish the authenticity of the data.

#### **4.6 CONCLUSION**

For the purpose of this study, research design and methodology play an important role in assisting the researcher to answer the primary research question, and thus lead to the realisation of the set objectives. The methodology used, the criteria for the selection of participants, and the data collection method and data analysis contribute positively to the success of the study as a whole.

In any study, accuracy and credibility are vital as they help to ensure that the findings assist not only in making sense of the topic under discussion, but also in expanding the knowledge base by adding current narratives. The interpretation of the collected data adds a very important element in that the individual and subjective views of the participants assist in the realisation of the set objectives.

## **CHAPTER 5**

### **INTERPRETATION OF DATA**

#### **5.1 INTRODUCTION**

In this chapter, the discussion focuses on the collected data pertaining to the perceptions and experiences of lecturers on the use of OERs in teaching and learning. The themes that emerged from the data analysis are presented in the first section. The chapter then deals with the interpretation of data using the selected theoretical framework as well as the existing research findings to corroborate the results.

Data from the transcribed interviews were coded based on commonalities, to form themes. The identification of codes was dictated by the individual responses from the lecturers on their perceptions and experiences on the use of OERs. As indicated in section 1.14, the codes were combined to form categories in order to make sense of the individual codes (McMillan & Schumacher, 2014:405). The characteristic features that allow for the formation of categories and, ultimately, themes are based on the questions asked using both the interview guide and probing techniques. Both the codes and the categories were later linked to the components of the KM processes model, namely knowledge discovery, capture, sharing and application (Becerra-Fernandez & Sabherwal, 2010:56). The created themes were then used as sub-headings during the interpretation and presentation of findings (Creswell, 2016:53).

#### **5.2 PRESENTATION OF DATA**

The data presented was obtained from eighteen lecturers within the Bloemfontein Campus of the UFS. Below is the description of the participants followed by a detailed presentation of their perceptions and experiences with regard to the use of OERs in teaching and learning at the UFS.

### 5.2.1 Profile of the Participants

Table 5.1 shows the distribution of the participants who were interviewed by their corresponding faculties, and their individual positions.

**Table 5.1: Participants' distribution by faculty and position**

Faculty	Lecturers	Senior Lecturer	HODs	Associate Professors	Professors	Directors	Total
<b>HS</b>	4	-	2	1			7
<b>NAS</b>	3	1	-	1	1	1	7
<b>EMS</b>	2	-	-	-	-	1	3
<b>HUM</b>	-	-	-	1		-	1
	9	1	2	3	1	2	<b>18</b>

(Faculty names: HS for Health Sciences, NAS for Natural and Agricultural Sciences, EMS for Economic and Management Sciences and HUM for Humanities)

The nine lecturers represented the highest number of participants, followed by three Associate Professors, two HODs, two Programme Directors, one Senior Lecturer and one Professor. A total of eighteen respondents were drawn from four faculties as indicated on the table. HS and NAS had the highest number of participants at seven each, whilst EMS and HUM were represented by three and one participants, respectively.

Participants were categorised into two groups, namely: (1) those with five years' or less teaching experience; and (2) those with more than five years' teaching experience. As shown in Table 2.2, only five lecturers who responded met the first criterion, while thirteen met the second criterion. The majority have been in the teaching field for more than ten years. This may be an indication that their interest was to learn more about OERs which could place them on par with the younger generation. On the other hand, the younger generation probably did not see the need to participate. In terms of gender, the majority of the respondents were females, whereas only two were males.

**Table 2.2: Participants' pseudonyms, genders and years of teaching experience**

<b>Pseudonym</b>	<b>Gender F=Female M=Male</b>	<b>Experience (in years)</b>
1. Ammy	F	4
2. Desi	F	20
3. Carolina	F	29
4. Tian	F	4
5. Koos	M	3
6. Veli	F	3
7. Siba	F	4
8. Rolien	F	12
9. Sue	F	13
10. Nomnqamlezo	F	20
11. Deliwe	F	12
12. Louise	F	25
13. Kathy	F	12
14. Zintle	F	32
15. Phathiswa	F	15
16. Khethiwe	F	31
17. Ria	F	37
18. Mpho	M	11

The themes that emerged from the thematic analysis of the data, generated through semi-structured interviews, are presented in the following section. The perceptions and experiences of the lecturers with regard to the use of OERs in teaching and learning are presented and discussed separately. In order to enrich the discussion, verbatim quotations from participants are included. These quotations contain minor changes to increase the readability thereof; where this has been done, it has been indicated. Information which is irrelevant to the discussion was excluded and has been indicated by means of ellipsis (...). Where information was added to clarify what the participants were referring to, square brackets [ ] are used. All information relating to the identity of the participants and faculties or departments has been removed. Pseudonyms were used to protect the identities of the participants.

## 5.2.2 Lecturers' Perceptions on the Use of OERs in Teaching and Learning

The five main themes that emerged from the thematic analysis of the university lecturers' contributions include: *varying levels of perceptions about OERs*; *shared perceptions on the influence of the Internet*; *the efficacy of OERs in teaching and learning*; *the proposed development, implementation and promotion of OERs policy at the UFS*; and *experiences with regard to the use of the 5Rs of OERs*. A summary of the themes and sub-themes relating to lecturers is provided in Table 5.3.

**Table 5.3: Themes and sub-themes of lecturers' experiences and perceptions on the use of OERs in teaching and learning**

Main themes	Sub-themes
1. Varying levels of perceptions about OERs	Fully knowledgeable about OERs; Partly knowledgeable about OERs; Not knowledgeable about OERs.
2. Shared perceptions on the influence of the Internet	The influence of the Internet on teaching and learning; Pros and cons of Internet usage; Digital natives versus digital immigrants.
3. Efficacy of OERs in teaching and learning	Prescribing freely-available e-books for teaching and learning; Print versus electronic books; Cost of e-books; Adopting OERs in teaching and learning; Usage of OERs at either undergraduate or post-graduate levels; Quality of OERs.
4. The proposed development, implementation and promotion of OERs policy at the UFS	Development, implementation and promotion of OERs.
5. Experiences with regard to the use of the 5Rs principles of OERs	Re-use Re-work Re-mix

	Re-distribute
	Retain

### **5.2.2.1 Theme 1: Varying levels of perceptions about OERs**

This theme summarises lecturers' perceptions of the concept of OERs. It consists of three subthemes, namely 'Fully knowledgeable about OERs', 'Partly knowledgeable about OERs', and 'Not knowledgeable about OERs'.

#### *5.2.2.1.1 Sub-theme: Fully knowledgeable about OERs*

Of the eighteen participants, only Sue had an idea of what OER stood for and gave a description that came close to the available definitions thereof. This constitutes 5.6% of the responses. Important components of OERs that Sue mentioned included free and easy to access educational resources and open under flexible copyright rules to free usage by many, including lecturers and students. Sue's inclusion of examples was a further indicator of her knowledge about OERs.

'(...) I associate OERs to be resources that lecturers can easily access, maybe online and where we are not going to pay for copyright usage and are open for lecturers to use for their students. [This could] be (...) in a book form, or slides, or videos that [may be used] without asking for permission from the original authors.'

**[Sue]**

#### *5.2.2.1.2 Sub-theme: Partly knowledgeable about OERs*

Fifteen out of the eighteen responses represented those who are partly knowledgeable about OERs. This is drawn from the pieces of information that they mentioned to describe the concept and they also admitted to not being fully knowledgeable about OERs. These responses represent 83.3% of the sample of the total number of responses. Thabo's response represents those who did not give a conclusive and convincing definition of OERs:

'To be honest, I'm not sure what you mean by Open Educational Resources ... I would associate it with resources that we can use, either on the Internet, or books or audio-files, that are available in the library.' [Thabo]

#### *5.2.2.1.3 Sub-theme: Not knowledgeable about OERs*

There were two out of the eighteen participants who confirmed that they had no knowledge of what OERs stood for. In one case, the word 'Open' in OERs was associated with distance learning. On the other hand, the concept was linked to opening up the university and allowing it to increase its community engagement activities that are expected of a public institution. These represented 11.1% of the respondents. Kathy's involvement in distance learning was used as a link to the meaning of OERs.

'To be honest with you, I don't have an idea. We do distance learning at the school; we have a small contingent of face-to-face undergraduate students on campus; and everything that we do is distance learning.' [Kathy]

#### **5.2.2.2 Theme 2: Shared perceptions on the influence of the Internet**

The second theme, 'shared perception on the influence of the Internet', refers to the perceptions of lecturers regarding the influence of the Internet in their evolving teaching and learning space. This theme has four sub-themes that are discussed in this sub-section. The first sub-theme is 'The influence of the Internet on teaching and learning'. This theme highlights the lecturers' views on the influence of the Internet on their daily teaching and learning activities. The second sub-theme, 'Pros and cons of Internet usage', deals with the positive and negative perceptions of the respondents regarding the Internet. The third sub-theme, 'Digital natives versus digital immigrants', seeks to highlight the correlation between the evolution of the digital world and the era when lecturers entered teaching and learning. The fourth sub-theme, 'integration of the Internet into teaching and learning', refers to the varying levels of OER usage in teaching and learning.

##### *5.2.2.2.1 Sub-theme: The influence of the Internet on teaching and learning*

All of the responses offer different views on the influence of the Internet on lecturers' daily teaching and learning activities. They vary from those who had strong and positive views, to those who had mixed feelings and those with extreme reservations about the Internet's role in their teaching and learning activities. Some respondents regarded the Internet as part of their DNA in that their teaching and learning experiences revolved around it. Kathy's response below represents the responses that consider the Internet as game-changing in that it enhanced the way in which they have been offering distance learning over the years.

'We do distance learning, so Internet is the basis of our education, for sure.'

**[Kathy]**

The above comment indicates the extent to which the Internet has become embedded in the lecturers' teaching and learning activities. They viewed the Internet as a vital component that, if it were to be cut out, it would negatively affect their daily activities.

In addition, Nomnqamlezo's quote likens the entrance of the Internet into the teaching and learning sphere to a duck taking to water in that she had seen the Internet evolving and growing over the years, entrenching itself fully into teaching and learning across the disciplines.

Firstly, because I'm teaching technology, [the Internet] has always been part of [me]. It's more than seventeen years since I have started using technology as a teaching aid in my course. That basically started with my first introduction to a learning management system. I think it was in the end of 2000 or beginning of 2001.' **[Nomnqamlezo]**

Furthermore, other participants, including Veli and Siba still saw the Internet as a saviour in that it had made things easier for them as they executed their day-to-day activities. They regarded it as a platform that not only provided them with valuable information but which had also broken down many barriers including space, time and distance. These conclusions were drawn from statements such as:

'I think it really has a place. We go to the Internet to look for information.' **[Veli]**

'It plays a big role, as you can access it anytime, anywhere and you don't even have to go to the library...' **[Siba]**

Despite the majority of the responses praising and acknowledging the influential role of the Internet in terms of teaching and learning, some exercised caution that stemmed from personal preferences and attitude towards it. For instance, Liziwe commented:

'No, I use blackboard, on campus, sometimes, not as often, because I prefer face-to-face, that's my mode of teaching. I like to do it that way.' **[Liziwe]**

With reference to the above response, Liziwe still regards face-to-face teaching as being more dominant than the Internet in her teaching space and teaching and learning activities.

Koos gave a divergent view, or an oxymoronic response, in terms of the role that the Internet plays in his day-to-day teaching and learning activities:

'With or without technology, I think I would have taught pretty much the same ... [The only advantage] would just be the access to materials that I'm lecturing on.'  
**[Koos]**

Koos's views indicate that he does not have a high regard for the Internet and thinks that it has not had any major influence or changed his teaching style. However, he acknowledges the wealth of information [including OERs], that can be accessed through the Internet.

#### *5.2.2.2.2 Sub-theme: Pros and cons of Internet usage*

Some participants shared their views on the positive influence of the Internet on their daily teaching and learning activities. Many views overlapped and linked deliberately or inadvertently, to the use of OERs. Such views are a mixture of both perceptions and experiences that were directly linked to their daily teaching and learning.

Liziwe's response is an acknowledgement of the wealth of information that is accessible through the Internet. She highlighted the presence of the lecturers as vital to sifting 'wheat from chaff' in that their knowledge and experience may assist students. Her response further acknowledges that the Internet has enhanced the lecturers' teaching skills in terms of how they executed their daily activities.

'[Students are] spoilt for choice. [There is] more information in their possession. [But] guidance from the teacher [is still] indispensable and irreplaceable. [It is] easier and accessible for me. I sit here in my office and do the module [and] get a certificate, instead of going to a place and having to spend money. It is convenient.' **[Liziwe]**

Some responses, including Ammy's, raised a number of concerns about the Internet and the information that it offers to both students and lecturers. The fear of fake information being used in teaching and learning and the decline in creativity among the students is another disadvantage that is associated with the entrance of the Internet into the teaching and learning sphere.

'[It is] difficult controlling information on [the] Internet and proving authenticity. [It] encourages laziness and lack of creativity amongst students. Students believe in spoon-feeding, [and they] do selective reading.' **[Ammy]**

According to Carolina, despite the available wealth of information, students still need guidance, and the role of the lecturers will always be important in order to avoid using sources that are not credible.

'Students need guidance to the correct information.' **[Carolina]**

An on-the-spot practical experience regarding the use of the Internet was shared by Zintle who stated that, just before the interview, she struggled to connect to the Internet. However, despite her frustrations, she still acknowledged the role that the Internet played in her teaching and learning activities.

'You should not ask that question as I am struggling to use the Internet right now. It has all the tools that you need. There are templates, and to me it's overwhelming. I really feel overloaded.' **[Zintle]**

The lack of proper tools that allow access to the Internet was viewed by Nomnqamlezo as a stumbling block. She felt that print copies cannot be ignored as they come in handy and are seen as mitigating factors to the unreliable and sometimes unavailable Internet.

'The big problem still remains when the students don't have access to the computer and even the Internet at home. When they have to study and that is where the hardcopy is much better for some people.' **[Nomnqamlezo]**

#### *5.2.2.2.3 Sub-theme: Digital natives versus digital immigrants*

This sub-theme seeks to highlight the influence of the perceived generational gap on the use and integration of OERs in teaching and learning. Although such perceptions were not widespread, there were participants who felt it was necessary to mention such facts while addressing other issues related to OERs.

The following comments confirm the presence of lecturers who entered the teaching and learning sphere at the time when the Internet was already in existence. Veli confessed to knowing no other teaching tool other than the Internet. She also indicated that she considered herself as being part of the younger generation whose members are comfortable with the Internet and are able to adjust to and embrace the ever-changing technologies.

'I can't think how we would teach without the [Internet]. Maybe it is because I am a bit younger, so it was not that much of a big adjustment for me. It is something that came naturally.' **[Veli]**

In addition, Deliwe alludes to the fact that her youthfulness makes her open to the exploration of the endless possibilities offered by the Internet. Based on her observations, some older colleagues seem to limit themselves to tried and tested but

out-dated teaching methods. She gave an example of the discipline that she was involved in as offering many possibilities that would allow her to be a lifelong learner, and the Internet is seen as the vehicle that facilitates such an experience.

‘Some people are old school ... [they tend to have a one-track mind] and they look at what the content of the curriculum says ... and so they want to confine [themselves]. But in my field, I cannot confine [myself] because my course is so broad. There are so many aspects. I learn a lot from my students than from what I teach.’ **[Deliwe]**

In addition, there were respondents who attested to the fact that the Internet was introduced to them when they were already in the teaching field. As digital immigrants, they had learned to accept, explore and use it. They conceded that although the Internet forms a core supporting tool in their teaching and learning, the rate at which it brings change is sometimes overwhelming.

‘...so I see it as a very useful tool. I have an issue with it in that, at my age, I don’t understand it that well, and I can’t utilise it that well.’ **[Zintle]**

‘... [I am] looking at me as a person who could claim that this [Internet] change found me in action ... and nobody accepts change positively.’ **[Ammy]**

The above responses by Zintle and Ammy may be described as representing those who have a love-hate relationship with the Internet in that on the one hand, they are aware of the opportunities it offers but, on the other, they feel frustrated by the pace at which change in the digital world occurs.

### ***5.2.2.3 Theme 3: Efficacy of OERs in terms of teaching and learning***

This theme is premised on the empirical studies that the literature offers on the use of OERs in many HEIs. The theme is divided into six sub-themes, where aspects, including the use of freely-available e-books by faculties, the choice between print and electronic formats, cost, quality and context are addressed.

#### *5.2.2.3.1 Sub-theme: Prescribing freely-available e-books for teaching and learning*

Many different views were expressed regarding the adoption of e-books as prescribed books. One was on the dominance of the traditional copyright licensing that many lecturers still depend on as they are not aware of the other options available to them. The majority of the participants still view the traditional ways of prescribing textbooks as the only viable option available. Deliwe views the dominance of the publishing industry as enticing faculties by promising lecturers that they will print the correct number of books on time and thus match their expectations.

‘Sometimes people have an agreement with a publisher. They give the publisher the right to publish a specific book and they even give them the number of students.’ **[Deliwe]**

In addition, Sue concurs that the pressure from university management, the Department of Higher Education and Training (DHET), the National Research Foundation (NRF), and the possibility of being promoted sometimes forces faculties or departments to consult traditional publishers in order to obtain prescribed books for their students.

‘80% of us in the department contributed [to the currently-used prescribed textbook]. It is a Van Schaik [publisher] textbook ... We don’t prescribe the OERs because they are not RSA-based and, secondly, we have contributed to that particular textbook, and therefore you are more likely to prescribe that book than the OERs.’ **[Sue]**

Another respondent cited the absence of subject-specific free e-books on the Internet. This, according to the respondent, is caused by experts in the field not making any contribution towards the realisation of the vision espoused by the open movement. The respondent further cited the unique nature of the content that is offered and the decision her faculty has reached with a traditional publisher to print prescribed books for their modules.

'At this point in time, we don't have prescribed books ... we have books from LexisNexis [publisher]. [They are] standard books, and we have no experience on open source as an option ... [OERs are] not relevant for us at the moment.'

**[Kathy]**

The use of traditional textbooks instead of the free e-books is sometimes caused by leaders in specific disciplines who still believe in prescribing books in the way they know best. Patty highlights that moving from the traditionally-published prescribed textbooks to free e-books is still seen as a far-fetched dream that is yet to be realised.

'In my subject, [there] are very tight-knit expertise ... we cannot just veer away from the prescribed books written by those experts, and also because of historical background about what has always been done in the department, i.e. holding an annual meeting on the prescribed books. Our recourse is not on Open Educational Resources, but rather on traditional prescribed books.'

**[Patty]**

The lack of know-how about how copyright laws operate is also seen as an impediment to prescribing free e-books by faculties and departments. As indicated by Rolien, the presence of complicated copyright laws and the costs involved sometimes make it impossible for faculties to encourage the use of such educational materials by lecturers.

'We have started looking at online material ... a lot have copyright issues ... you have to pay a licence fee per student, in order to have access to ... we understand, it takes a lot of money to develop them.'

**[Rolien]**

In addition, despite the presence of the flexible copyright laws, a few seemed to know about the creative commons and what they are capable of. Due to familiarity with creative commons in her field of study, Nomnqamlezo is likely to use a number of freely-available e-books on the Internet.

'I [always] find interesting assignments and they are made available under Creative Commons licence and then I can adapt those if I feel they are appropriate for my courses. There's a wide range of OERs that are being used.'

**[Nomnqamlezo].**

#### 5.2.2.3.2 Sub-theme: *Print versus electronic books*

The choice by students between electronic or print books has been cited by some respondents as having an influence on the format included in teaching and learning. As seen below, Ria echoes such sentiments by describing what she has noticed when it comes to the choice of book formats by students in her classes.

‘Some of the students still prefer print books, something to page through and, as a person who uses an integrated approach, they would still want me to give them my PowerPoint presentations; they want something in their hands.’ **[Ria]**

#### 5.2.2.3.3 Sub-theme: *Cost of e-books*

Some of the respondents compared the costs involved when acquiring e-books and traditional textbooks. Tian’s fears regarding the cost of e-books are shared below.

‘There are fears about the hidden costs [from the publishers’ side] that are related to usage of such e-books. I think the big problem may be [that as lecturers we are] not always sure what the book that you prescribe on the Internet [would cost].’ **[Tian]**

Some respondents, including Zintle, are over-protective of their students and do not want to expose them to e-books that may appear to be free when, in fact, they are old editions or still have to be printed, therefore forcing them to pay in one way or another.

‘I just wonder what would be the cost implication for printing out a 1 000-page e-book, with quality, [being part of the mix].’ **[Zintle]**

Khethiwe still finds it difficult to identify educational resources that she can use as prescribed textbooks due to the nature of the publishing world that is still under the control of profit-driven practices.

‘Unfortunately, in our field, there are very few e-books [on the Internet]. If there are any available, students still have to buy them. If they are free, that means a

new edition has been introduced and such textbooks are very expensive and I would welcome any freely-available and current textbook out there on the Internet. I am always online looking for what is available.' **[Khethiwe]**

#### *5.2.2.3.4 Sub-theme: Adopting OERs in teaching and learning*

A number of views were expressed by respondents regarding the adoption of OERs by faculties and departments in teaching and learning. The majority voiced their willingness to be part of the decisions to include OERs in their faculties. For example, Ammy showed willingness to participate, provided that managers play open cards which would allow all voices to be heard, and take into consideration the South African context when generating content.

'I will go with [the idea] on condition we would deliberate on it ... Yes, I understand people are saying we are training our students to operate anywhere, but the immediate context where they practise is South Africa ... Because the qualification they are going to get, they get it from here.' **[Ammy]**

The presence of relevant and current information on the Internet is seen by other participants such as Ria as an important driver towards the adoption of OERs in teaching and learning. The importance of opening up to new trends and adapting to the new ways of teaching and learning through OERs is cited as other reasons that would lead lecturers to agree with their faculties on the adoption of OERs.

'I am not scared of using them. I am open, that is how I am, open to everything, you know. It is amazing stuff, even the animations and stuff, for example you can explain to students in words, but the minute you use the animations, it changes and adds value to their learning.' **[Ria]**

Koos's view represents those participants who are cautious and not yet convinced of the value of adopting OERs in their respective faculties. This is also linked to the fear that OERs are taking the students away from the lecturers. Koos seemed unsupportive of the inclusion of OERs as he is involved in post-graduate lecturing, a level at which he views the use of OERs as being unsuitable.

'My context is slightly different because I don't teach undergraduates ... [OERs] tend to be of lower academic level than you would expect at Master's level.'

**[Koos]**

Furthermore, the different levels at which people embrace technology is seen by Nomnqamlezo as leading to the usage or rejection of technological practices, including OERs, in teaching and learning. As indicated by another respondent, the reluctance to adopt OERs may be linked to the lecturers who regard themselves as 'old school' and who are therefore unwilling to change their mind-sets and embrace OERs in teaching and learning.

'I know that people do not want to introduce technology into their teaching because they themselves, as lecturers, are not comfortable with using it ... so in many cases, to make these Open Educational Resources available ... you cannot just say everyone must use OERs; you have to see whether it suits your pedagogical objectives of your modules.' **[Nomnqamlezo]**

#### *5.2.2.3.5 Sub-theme: Use of OERs at either undergraduate or post-graduate level*

The relevance of OERs has been cited by some respondents who made a clear distinction on where they are suitable when it comes to their integration at either undergraduate or post-graduate level. Koos only seems open to using OERs at undergraduate level. His views are linked to his perception that due to the standardisation of the curriculum at lower levels, OERs stand a good chance of total adoption by faculties.

'I think it [using OERs] makes sense if you're teaching undergraduates [because at that level] you have a standardised curriculum that all universities are following, that makes sense then, to use open education resource. I will be open to that.'

**[Koos]**

Sometimes the unique rules that are dictated by different bodies with whom certain faculties are affiliated are seen by Rolien as a hindrance to the use of OERs at post-graduate level.

'... [For] postgraduates, it is a different scenario because students write open book assessment, from third year until later on, and they have to write SAICA exams. SAICA does not allow e-readers.' **[Rolien]**

#### *5.2.2.3.6 Sub-theme: Quality of OERs*

There are many views voiced by participants that are related to the perceived quality of OERs in teaching and learning. For instance, Desi cited content, relevance and standardisation of educational resources as sacrosanct and governed by the universal principles. High quality in educational resources strengthens trust in the information that is available on the Internet.

'Yes, quality matters, and also, [the question would be] does this textbook speak the scientific language or educational language that students would grasp? Or, is it highly written, or is it really assisting the students to really understand their work? If it answers these questions, then I wouldn't mind.' **[Desi]**

The issue of familiarity with the content in the textbooks is seen as important in that it makes it easier than the foreign-based content when conveying information to the students. Siba believes that the relevance of the content may be a confidence booster in what they are lecturing. If one is comfortable with the content, that has an influence on what is passed on to the students.

'I would look at the content obviously, to look if the book is relevant ... the ones that I have seen, they didn't have a problem, I was fine with them ... for me the main issue is the content.' **[Siba]**

Some respondents, including Ammy, felt strongly about the context associated with some of the educational materials available on the Internet. There is the impression that OERs have American or foreign contexts. For example, one respondent indicated that a number of educational resources that they have come across had an American context, meaning that they had to re-mix and make them suitable for the local South African context. In some cases, a rule has been passed, as another participant indicated, to prescribe only those educational materials with a South African context.

In some instances, the participants cited that students find it difficult to decipher the raw educational material they find on the Internet as they were not able to put it into context.

'Most of what is available is American. It's not South African. Now to bring it to the South African context, one has to re-write the whole thing to bring it into context. If one brings it as it is, as most people do, they get DVDs from the Internet and they present to class as is. What is given there is well and done for the western, developed countries and it does not apply like hand in glove to South Africa.' **[Ammy]**

'I think many of them are too American ... we deal with case studies, for things that are valid for everyday living, with a South African application ... it is also good to get both the local and international perspectives.' **[Louise]**

Participants such as Louise indicated that their modules have a strong South African focus and that the educational materials on the Internet do not meet their current needs. They also indicated the importance of including case studies that have a South African context and asserted that the status quo makes it difficult to use all of the OERs out there on the Internet as they have a foreign context.

#### ***5.2.2.4 Theme 4: The proposed development, implementation and promotion of OER policy for the UFS***

This theme focuses on the lecturers' perceptions on the proposed development, implementation and promotion of OERs at the UFS.

##### ***5.2.2.4.1 Sub-theme: Perceptions on the proposed development, implementation and promotion of OERs***

The policy formulation, implementation and promotion proposal received different views, ranging from outright acceptance, to acceptance with reservations, and total disagreement. All of the responses from the respondents are based on personal

perceptions and experiences regarding policy formulation, implementation and promotion in many areas within the teaching and learning environment.

Sue's response below represents those who showed outright acceptance to the proposed formulation of an institutional OER policy. The importance of re-positioning the UFS to be on par with the rest of the world was cited as the reason for total support while another respondent indicated the need to take advantage of the opportunities offered by the ever-evolving technologies whose influence has entered the teaching and learning sphere.

'I think I would go for it. I would love to be part of it. I would support it. I think it is important because some of us do what we think is the best ... when you actually get into the OERs and see what other people are doing, and how they are presenting in class ... you get an idea that makes you believe you can do that also. I think it is good to use it as a benchmark ... so you are aware of what is going on in other places.' **[Sue]**

Some respondents, including Desi, showed acceptance with reservations. Although they are in agreement, they showed the natural instinct to feel sceptical at first. This is always part of human nature as one participant cited unwillingness to be in the forefront of any new initiative even though, in the end, there was some willingness to participate once there is institutional adoption and implementation.

'I must be honest, I don't feel passionate about what you are recommending. I think there are people who would do things like that. I am not a pioneer in that sense ... I think I need to have a mind shift, in my own manner of how I work, but if that becomes a trend and a norm, I would not resist.' **[Desi]**

Ammy represents the views of those respondents who form the bigger group and who, though in agreement, would like to see tangible and concrete measures being put in place to ensure that the policy formulation, implementation and promotion succeed. These include marketing the initiative, having a clear foundation, thinking about the additional human resources, addressing copyright laws, having a proper infrastructure, being strategic in terms of the introduction of OERs, and making sure

that they are unique and address the challenges faced by residents in the centre of the country.

'I would definitely be willing to participate, and I would like to be included as early as possible. I wish the university could have such a policy, because there is much going on where there is no directive or policy, but one is expected to do it. To us, policy is a reference, you need to say, but this is what is stipulated in the policy. I would participate, although minimal as my time here in this institution, in terms of age, is very short.' **[Ammy]**

Carolina was the only respondent who indicated her total disagreement to participate in proposed policy formulation, implementation and promotion. Although not in favour of being part of the process, the reason is valid as she is the head of the department and has a great deal of administrative work to do in the office. However, she was willing to have someone from her department be their representative.

'Well, I won't be [able to participate]. I don't want to be part of another forum because I have too much admin work. But I will be able to make someone in the department part of it so that he can be the spokesperson for us, so that we can be part of it. I think we need to be part of it ...' **[Carolina]**

#### ***5.2.2.5 Theme 5: Experiences of lecturers with regard to the use of the principle of the 5Rs of OERs***

Upon listening to the definition of OERs and the meaning and the use of the principle of the 5Rs, respondents described their experiences linked to their individual teaching experiences. The following sub-themes were identified:

##### ***5.2.2.5.1 Sub-theme: Re-use***

Although the majority of the respondents reported that they were practising the re-use principle, their usage levels differed. Koos confirmed that he had been using the re-use principle mostly in videos that are relevant to his discipline.

‘Actually, now that you are talking about it, I did use this ‘Ted Talk’ that specifically says you are not allowed to edit it, and you had to show the whole thing ... I would normally have a concept and then say [to my students] this is what this video is about in relation to this concept. I want students ... to know the concept from different sources.’ **[Koos]**

In addition, Mpho agreed that he could relate to the re-use principles and that he is personally guided by principles that are linked to acknowledging the original source. He felt strongly about the need to cite a source, based on principle, and fear of plagiarism or being accused of cheating.

‘I have come across some and not all of them, e.g. videos, lecture notes, which I normally copy the link and place it on blackboard ... I do re-use, especially the URL and always acknowledge the original creator.’ **[Mpho]**

Carolina’s views below represent those respondents who admitted that they had not followed the re-use principle due to various reasons varying from not believing in other people’s work, to principles and having more trust in their own work than other people’s.

‘I have come across it, but I have never used it. I basically change my own lectures every year. I [am] definitely never going to feel at ease to use them. I don’t think I will feel at ease using someone else. I don’t feel comfortable using my own lectures that I used last year.’ **[Carolina]**

#### *5.2.2.5.2 Sub-theme: Re-work*

The majority of the respondents, including Mpho, agreed that they use the re-work OER principle in their daily teaching and learning activities. Mpho believes that information is available to be shared but flexible enough to be re-worked to suit the various contexts and to meet their diverse needs.

‘Yes, I do it. I use it just to explain a certain concept like a gene, which is a biological concept which may have been used in our modules, but will have to explain in a way that suits our discipline.’ **[Mpho]**

There are respondents, including Carolina, who indicated that they do not use OERs in their teaching and learning, based on their trust in their ability to create knowledge.

'No, also I have never done that. I would page through it and have a look at it but I have never used [it]. I have never re-used it. I have never used parts of it.'

**[Carolina]**

#### *5.2.2.5.3 Sub-theme: Re-mix*

The re-mix OER principle is also cited by the majority of the respondents as being part of their activities, including content development. For example, Desi indicated the need for academics to have their voices included in the material that they are preparing to share with their students.

'I do that sometimes; it is not about mistrusting them, it's just that maybe they are missing something that I would like to add, and I would do that.' **[Desi]**

Some respondents, including Carolina, cited that the principle does not apply to them either in terms of the context or the modules that they teach.

'No, I have never done it ... because they are using another point of view – that is not applicable to the work that I am teaching here – I'm not teaching the [content found in another country] ... our work is very African-based.' **[Carolina]**

#### *5.2.2.5.4 Sub-theme: Re-distribute*

The spirit of re-distributing the collected and modified educational resources, as indicated by many of the respondents, including Ammy below, seems to be uni-directional and aimed at students. Many respondents felt that it was their responsibility to share information with their students as they still need their guidance. They regard

themselves as being the source and most credible tool for discovering, modifying, sharing and distributing factual information.

‘It depends on why I am using it ... we usually refer the students, we tell them where to get it from ... I give them a summary ... they need to go to the original text, like I would refer them to a textbook.’ **[Ammy]**

Some respondents, including Carolina, confessed that they never saw any need to share educational resources with fellow colleagues. They never thought about it and sometimes they felt it would be tantamount to encroaching on their colleagues’ spaces. Those who do share are doing it because they share the module, or an established culture of sharing is already in existence.

‘At this stage, right now, I think things can change constantly in this open access ... but at this point that I am [at] right now, I don’t feel at ease to make my work available ... I don’t have reasons...’ **[Carolina]**

The Learning Management System, Blackboard and, sometimes, e-mails, as indicated by Veli below, have been cited as the platforms where the re-distribution of information takes place. There is also an understanding of what needs to be shared and in what form, in order to avoid infringement on copyright. The use of URL links when sharing information via e-mail or on Blackboard indicates that lecturers want the students or their colleagues to be able to go to the source of information rather than rely on modified information.

‘Honestly, when we want to share, we share it with the students, on Blackboard. There is a place where documents are placed [and what about with colleagues?], well, I do, if it is something that is applicable to my colleagues, I would always send a link or an e-mail with a document.’ **[Veli]**

#### *5.2.2.5.5 Sub-theme: Retain*

The majority of the respondents, including Mpho, are aware of the need to create a storage space for their discovered, modified, and shared educational resources. Some

respondents cited the creation of folders in their computers as the easiest and most common practice. In some cases, the respondents cited additional storage sites such as an external hard drive, Dropbox, or CDs. They are aware of the need to use them in the subsequent semesters or years if they are still relevant and capable of achieving the set objectives.

'I have a place where I place them and re-use them whenever there is a need. We also have a Dropbox for storing information that needs to be shared by both students and lecturers.' **[Mpho]**

Kathy represents the few respondents who do not encourage or believe in having a storage space for the discovered, modified and shared OERs. They hardly keep them, and cited printing as their mode of keeping the educational resources. In addition, some respondents only use links from the discovered educational resources.

'We use Investopedia quite a lot, and the others through Google. I use the link that goes into my slides; I don't store them at all in my computer.' **[Kathy]**

### **5.3 THE INTERPRETATION OF RESULTS USING THE KNOWLEDGE MANAGEMENT PROCESSES MODEL**

As indicated in section 4.3.3, the identified codes, categories and emerging patterns were linked to components of the KM process model, namely knowledge discovery, capture, sharing and application (Becerra-Fernandez & Sabherwal, 2010:56; Leedy & Ormrod, 2013:142; MacMillan & Schumacher, 2014:395; Maree, 2012:99).

#### **5.3.1 Knowledge Discovery**

With reference to section 4.3.3, the collected data indicates that, though not formally associated with OER activities, lecturers are constantly searching for educational resources on the Internet. They are aware of the need to search for new knowledge as it adds value to their existing information. The discovery of the new knowledge is usually haphazard and, in most cases, happens by chance. The majority of the lecturers consider the Internet as a valuable platform and use it quite often to look for

educational resources. These resources come from different sources, with videos from YouTube being mentioned quite often. Although they are aware of the various educational resources on the Internet, they seem to regard themselves as consumers of such resources rather than capable creators thereof.

In line with the principles of the knowledge discovery process, there is evidence of the production of new tacit or explicit knowledge in that lecturers use prior knowledge to synthesise new knowledge that they use and integrate into their daily teaching and learning activities (Becerra-Fernandez & Sabherwal, 2010:56). The 5Rs of OERs are, therefore, widely used and inadvertently integrated by lecturers as part of their teaching and learning activities. The lack of knowledge about OERs and the proper route to the knowledge discovery process could be seen as challenges that need attention.

### **5.3.2 Knowledge Capture**

With reference to section 3.2.2, knowledge capture is constantly being used by lecturers during their teaching and learning activities. Tacit and explicit knowledge are captured, stored and distributed during the teaching and learning process (Becerra-Fernandez & Sabherwal, 2010:58). All of the UFS lecturers make use of the knowledge that resides in their minds to create and infuse with the existing knowledge. Their tacit knowledge, which is unique to everyone, is converted into explicit knowledge that can be accessed by many people. They also make use of the educational resources on the Internet that have their source in the individual minds of their creators.

The use of explicit knowledge is an indication that lecturers rely heavily on the use of knowledge that is stored in different spaces on the Internet. Such knowledge, for example the YouTube videos, represent educational resources that many lecturers are using and integrating into their teaching and learning activities.

### **5.3.3 Knowledge Sharing**

With reference to section 3.2.3, and as confirmed by Wiley *et al.* (2012:82), 'Education is a matter of sharing, and the open educational resources approach is designed

specifically to enable extremely efficient and affordable sharing'. There is evidence that knowledge that is available in either tacit or explicit form is distributed by the UFS lecturers and is thus in line with the 5Rs of OERs that rate sharing highly. The majority of the lecturers seemed to share these with their students whom they regard as their reason for engaging in teaching and learning activities. However, the lecturers appear to be reluctant to share among themselves or with the outside world. It is, perhaps, time that a spirit of sharing be encouraged within and outside the boundaries of the university.

#### **5.3.4 Knowledge Application**

With reference to section 3.2.4, there is evidence of the presence of knowledge application activities within the teaching and learning landscape. According to Becerra-Fernandez and Sabherwal (2010:61), knowledge application refers to the process through which the individual possessing the knowledge directs the action of another without transferring to that individual the knowledge underlying the direction (Ibid).

Lecturers at the UFS are the main sources of both tacit and explicit knowledge, and they use their individual tacit knowledge and that which they harvest from among the different sources, such as the Internet, to transfer as is or in a modified state, to their students and, to a certain extent, their fellow lecturers. The presence of a policy would assist in the production of proper procedures that would enhance the application of knowledge, including OERs, by the UFS lecturers during their teaching and learning.

### **5.5 CONCLUSION**

In conclusion, the findings have produced a great deal of valuable information about the lecturers' perceptions and experiences with regard to the use of OERs in teaching and learning. OERs are not fully understood by the majority of the lecturers. Their acknowledgement of the Internet as an integral part of their daily teaching and learning activities may be a good supporting tool for introducing OERs at the UFS. The fact that all age groups are embracing technology is another added advantage and an assurance that there may be overwhelming support for the integration of OERs in

teaching and learning. Despite varying perceptions on the nature of the educational resources and their influence, it is evident that the 5Rs of OERs are unknowingly or unintentionally used by the majority of the lecturers at the UFS. The lecturers' perceptions on the development, implementation and promotion thereof are positive, which is a good indicator that OERs have the potential to play a role at the UFS.

The KM processes model that is made up of discovery, capture, sharing and application, provided valuable information confirming that lecturers are either knowingly or unknowingly part of the knowledge economy practices. They need to be made aware of the proper ways of applying such KM processes using OERs in teaching and learning.

## **CHAPTER 6**

### **CONCLUSION AND RECOMMENDATIONS**

#### **6.1 INTRODUCTION**

This chapter forms the concluding remarks on the study. It also provides a summary of the study based on the set research objectives. In addition, it highlights the significant research findings. Furthermore, it also presents the recommendations based on the findings, as well as recommendations for future research relating to the experiences and perceptions of lecturers at the UFS on the use and integration of OERs in teaching and learning.

#### **6.2 OVERVIEW OF THE STUDY**

The purpose of this study was to investigate the lecturers' perceptions and experiences with regard to the use and integration of OERs in their teaching and learning. In order to address the research purpose and questions, the researcher endeavoured to:

- Investigate the developments in the field of OERs in higher education by means of a literature review;
- Investigate and describe the UFS lecturers' perceptions and experiences with regard to the use of OERs in teaching and learning; and
- Develop possible strategies for the promotion, development and integration of OERs in teaching and learning.

Chapter 1 formed the blueprint of what the whole study entails and presents some underlying factors that contribute towards an ever-changing education landscape. It also illustrates that the provision of educational resources is influenced by evolving technologies and the pedagogies that respond to such changes. For instance, the introduction of OERs in the teaching and learning landscape confirms that the

discipline is not static but always changing and responding to the needs of the stakeholders.

As a foundation that prompted the researcher to undertake this study, the background provides information with regard to the status quo and whose influence has made it possible to embark on a journey to expand the knowledge base that deals with OERs. The entrance of the Internet in the early 2000s is seen as a game-changer and the pioneer for the establishment of a number of open movements that call for research funded from the public money to be made accessible free of charge, including OERs. The call is for the application of sound principles that allow for the ever-changing technologies to assist in manipulating the abundant information, making it freely available and easily accessible by all. The creation of these educational resources, including OERs, has been, though not widely, successfully created, packaged, distributed, shared and applied by leading institutions across the globe.

The existence of the theoretical framework assists, as is the case in this study, in aligning theory with the correct paradigm. This study is based on the interpretivist paradigm whose framework falls within discursive qualitative research (Henning, Van Rensburg & Smit, 2004:16). In addition, the study is modelled on the KM processes (Becerra-Fernandez & Sabherwal, 2010:4). These KM processes include knowledge discovery, knowledge capturing, knowledge sharing, and knowledge application. These processes provide clear guidance with regard to the perceptions and experiences of lecturers at the UFS on the use of OERs in teaching and learning.

The research problem, which is informed by the literature review, indicates that lecturers have mixed views when it comes to the general use of the Internet and the subsequent integration of OERs into teaching and learning. In addition, the way in which lecturers have been conducting teaching and learning continues to be influenced by the traditional styles that seem to be difficult to get rid of. The lecturers' reluctance to fully embrace technologies that enhance teaching and learning has a bearing and provides reasons as to why OERs have not been fully and widely implemented across the different faculties within the HEIs, including the UFS.

A number of concepts that feature prominently in this study and that are an integral part of the literature review have been selected to assist in making sense of the research as a whole. These include Connectivism, E-Learning, Open Access and OERs. Brief discussions are presented on the following: research design and methodology, data collection methods, selection of research participants, data analysis, value of the research and ethical considerations. An extensive discussion on the above appears in Chapters 4 and 5.

Chapter 2 provided a detailed analysis of the literature review that aims to assist in answering the question on the perceptions and experiences of the UFS lecturers with regard to the integration of OERs in teaching and learning.

The education landscape is undergoing a metamorphosis that can be traced back to the influence of technology. This environment is referred to as the connected world in that it operates within multiple communication networks. It is through this framework that barriers have, for years, been encouraging inequalities, specifically between the developed countries of the North and the developing countries of the South.

The connected world has led to the establishment of movements both private and public that call for the opening up of education by allowing for the citizens of the world to access educational resources of high quality, that are free and easily accessible. UNESCO, the William and Flora Hewlett Foundation, and the Shuttleworth Foundation are well-known organisations that continue to support initiatives that deepen the narratives espoused by open movements across the globe.

OERs are seen as the product that was born from the strides made by open movements that have ensured that educational resources around the world are freely available, accessible, cost-free, and have no legally-binding rules. A number of HEIs and private institutions, including MIT, USU, UNISA and SAIDE, are at the centre of developing, implementing and promoting OERs across the globe. Despite all of the good surrounding OERs, there are still those who are sceptical and who have raised questions around quality, context, cost and the target audience.

In Chapter 3, the theoretical framework represents the plan on which this study was based. The KM processes model is made up of knowledge discovery, knowledge

capture, knowledge sharing and knowledge application, all of which assist in answering both the primary and secondary questions. It is also the use of the KM processes model that helped to confirm whether the lecturers at the UFS are aware, implement, promote and, subsequently, integrate OERs in their teaching and learning.

In Chapter 4, the research design, methodology, selection of the research participants, data collection and analysis were discussed. By means of a qualitative exploratory research design, a purposively-selected number of lecturers were individually interviewed. The questions of the semi-structured interviews revolved around the lecturers' perceptions and experiences with regard to the use of OERs in teaching and learning at the UFS.

Data was collected using an interview guide and the responses were captured using a voice recorder. NVivo data analysis software was used to transcribe the data collected from the eighteen respondents. In addition, during the data analysis, the collected data was divided into themes and a pattern established. The identification of both main and sub-themes assisted in drawing conclusions that emerged from the KM processes model.

For ethical reasons, the selected participants voluntarily participated and they were assured that they could withdraw any time they wished to do so without reprisal. The participants were further assured that their participation was confidential and that their names would, in no way, be directly associated with the study. Furthermore, the data was stored in a safe place and destroyed once the research project was over.

To ensure the trustworthiness of the study, credibility, transferability, confirmability and authenticity were taken into consideration. In this study, credibility was established by employing member checks, which involved seeking verification with the participants as to whether the recorded information represented what had transpired in the interviews. For transferability, the involvement of eighteen UFS lecturers who met the set criteria gave a broad and diverse account of their perceptions and experiences with regard to the use of OERs in teaching and learning. For confirmability, qualitative data could be traced back to their sources, and the logic used to interpret the data was made explicit. For authenticity, the subjective views of the UFS lecturers are presented

as they are, thus establishing comparisons. The audio-recorded data was re-used to establish the authenticity of the data.

Chapter 5 dealt with the interpretation of the data as observed from the responses obtained from the participants. From the interviews, five themes and a number of sub-themes connected to these emerged. It was established that only a few of the lecturers were aware of OERs, which means that there is still a great deal of work to be done in terms of promoting the concept among the lecturers. In addition, it was confirmed that the Internet plays a huge role in the day-to-day activities of the lecturers. The majority praised the role played by the Internet, including reducing the time it takes to collate information that they present to their students. However, few lecturers were concerned about what the Internet has to offer and cited being overwhelmed by information overload. The Internet seemed to appeal to all generations of the participants, the only difference being that the younger generation seemed to quickly familiarise themselves with any evolving technologies in comparison to the older generation who felt that they needed time to get to know and use the different tools that the Internet presented to them.

Even though OERs have not been officially adopted in teaching and learning, some UFS lecturers were willing to include them as part of the curriculum provided that some of the issues bothering them were ironed out. The issues around cost, context and quality featured prominently as challenges that need to be overcome in order to build confidence and trust around OERs. It has also been established that lecturers are willing to participate in any forums that will develop, implement and promote OERs at the UFS. Although there were mixed views, there appears to be a willingness to see OERs flourishing and being part of the UFS curriculum.

Although the majority confessed to not knowing the OERs, there is proof that lecturers at the UFS apply, albeit at different levels, the 5Rs of OERs in their daily teaching and learning activities. Even though they were not aware of the 5Rs before these were explained to them, it soon became clear that the lecturers at the UFS inadvertently engaged in using OERs in teaching and learning. What is needed is official guidance of lecturers on how to fully implement them within the OER environment.

### 6.3 SYNTHESIS OF FINDINGS

The individual interviews from the participating lecturers produced interesting findings. This section presents highlights of the findings.

From the study, it became clear that the concept of OERs was not fully understood by many of the lecturers, which could be seen as an indication of the need to formally introduce it to all lecturers at the UFS.

Another notable finding is that the majority of the lecturers appreciated the role played by the Internet in their teaching and learning. Various examples were cited to support their assertions. However, it was also noted that not all of the resources on the Internet are of good quality or peer-reviewed which discourages some lecturers from using web-based resources. Hence, it will take some commitment and development of awareness programmes to prove to the sceptics that OERs have a place in teaching and learning.

There was unanimity among all the participants that in order for OERS to be successfully promoted at the UFS, a policy to guide their development and implementation would be necessary. The sustainability of OERs depends solely on how all of the processes are put in place and timeframes adhered to by all stakeholders. Little resistance regarding the proposal to develop, implement and promote OERs may mean that there is the likelihood of the success of the OER policy.

A notable finding is that the reluctance to integrate OERs in teaching and learning is based on the fear of the unknown that can also be linked to a lack of understanding of what the concept can offer. There was a clear link between promotion, research ranking and clinging to the traditional copyrighted dominated laws. It is important to address this by allowing OERs to be formally recognised as part of the teaching and learning project as a whole.

There was evidence that the 5Rs of OERs are widely used by respondents in their teaching and learning activities, with some citing restrictions that are discipline-specific that prevent them from fully implementing the principles. However, there were few lecturers who confirmed that a number of the principles did not fit well into their

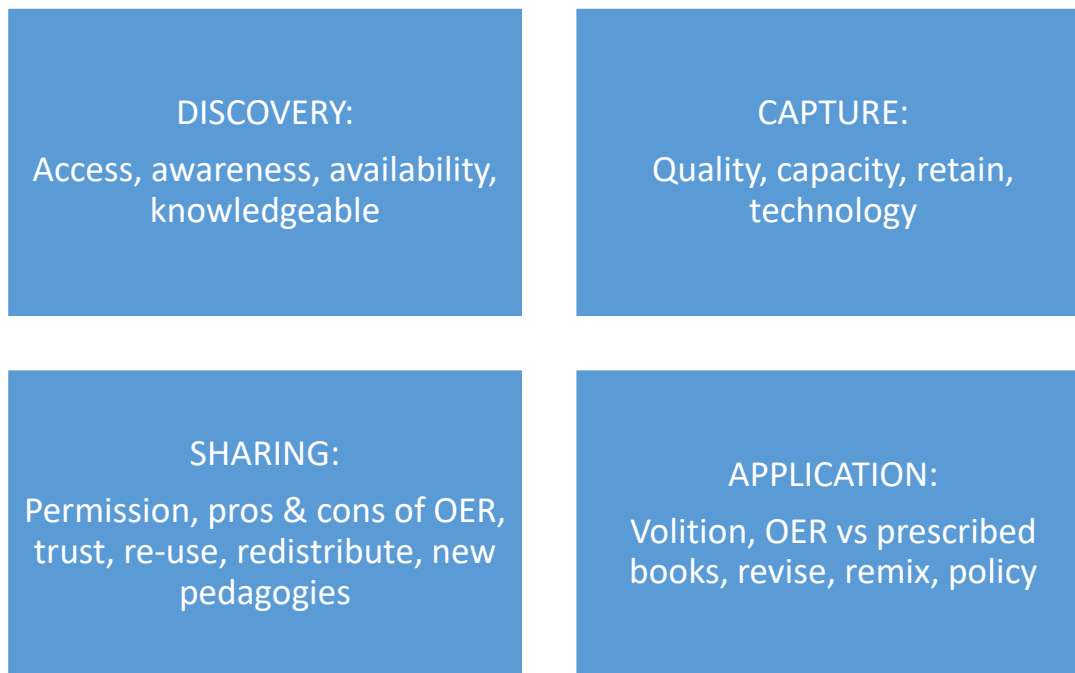
teaching and learning. In addition, it was clearly indicated during the interviews that the lecturers believe in storing information for themselves and that they hardly share among themselves. They only see students as children who need to be spoon-fed by what would have been approved by them. If there is a proper information literacy programme that is supported by all stakeholders, students will not have a problem in using such skills to engage with OERs. Once the lecturers are comfortable and open to sharing, they will not be afraid to give their students the space to be equal contributors.

Policies are seen by lecturers as guidance to the implementation and promotion of new trends, and that would also be applicable to the integration of OERs in teaching and learning.

There is a marked relationship which can be drawn from the five key themes in section 5.2.2, which were identified during the interviews, the OER adoption pyramid in section 2.12.2 and the KM processes in section 1.3. The four KM process which are discovery, capture, sharing and application form the central points where the sub-themes and the elements from the OER adoption pyramid are juxtaposed together to make sense of the lecturers' perceptions and experiences.

## **6.1 ALIGNING THE KNOWLEDGE MANAGEMENT PROCESSES MODEL WITH THE OER ADOPTION PYRAMID AND KEY THEMES**

Combining the knowledge management processes with relevant themes that were drawn during data interpretation and the OER adoption pyramid as seen in figure 6.1 below gives an elaborate views on the perceptions and experiences of the UFS lecturers on the use of OERs in teaching and learning.



**Figure 6. 1: Aligning knowledge management processes model with OER Adoption pyramid and the key themes**

The knowledge discovery process is made possible if there is a proper infrastructure that will allow the lecturers to embark on the journey to discovery. This means access depends on having proper tools for discovery to take place. In addition, the implementation of the awareness programmes across the UFS will contribute towards lecturers displaying confidence and ability to know whether the OERs are available or not.

The capture process is made possible by amongst other important elements is the presence of OERs of high standard and high quality. Tied to this would be the ability of the lecturers at UFS to use the available technology and displaying proper skills to retain the OERs that they would have obtained from various sources. With proper skills, the UFS lecturers will be able to create storage sites for all the OERs that adds value to their teaching, learning and research.

The sharing process is made possible by lecturers gaining access to various OERs using flexible rights and also having knowledge about what is good and not, what to do and not to do when searching for OERs. Finally if UFS lecturers are trusting and

valuing OERs they will be able to re-use and re-distribute the collected OERs and thus contributing towards new pedagogies.

The choice to use or not to use rests will heavily with the UFS lecturers. Their transition from traditional to prescribed OERs will be determined by their perceptions and attitude towards OERs. If their perceptions and experiences are positive towards OERs, they are likely to remix and revise the discovered OERs with confidence. Finally, they are likely to support any proposals to develop, implementation and promotion of OERs in teaching, learning and research.

#### **6.4 RECOMMENDATIONS BASED ON THE FINDINGS**

Based on the findings of the study discussed in Chapter 5, the following recommendations were formulated.

- The creation of awareness campaigns by the library as well as information sessions by CTL to motivate lecturers would assist them in realising the need for applying OERs in their teaching and learning activities.
- There is a need to upgrade the computer literacy skills of lecturers and ensure that they are all at an advanced level.
- Lecturers need to be trained on the different forms of information literacies that are needed for searching for various sources of information in their different formats.
- Faculty debates on the pros and cons of OERs need to be established.
- There is a need to revisit the current pedagogies that are mostly conducted behind the veil of the Learning Management System, such as, Blackboard, and to explore the possibilities of using those that encourage open practices.
- There is a need to revisit and modify the outdated promotion- and reputation-related practices that are enforced and encouraged by accredited bodies such as the NRF and HEQC.
- Champions who demonstrate the use of OERs in their faculties need to be identified.

- It is also important for the UFS to invite well-known institutions such as SAIDE, Creative Commons and HEIs that are already implementing OERs, including UNISA and UCT, to share their experiences in order to allay the fears that many lecturers indicated during the interview sessions.
- There is a need for active participation by all faculties from the inception to the promotion of OERs.
- It would also be important to engage the commercial publishing houses who could assist in speeding up the development and promotion of OERs across the globe by using their established infrastructures.

## **6.5 RECOMMENDATIONS FOR FURTHER RESEARCH**

Based on the findings of the study discussed in Chapter 5, the following recommendations were formulated for further research:

- It is suggested that future studies focus on specific issues relating to the perceptions and experiences of lecturers with regard to integrating OERs into teaching and learning.
- In addition, it is important to conduct future research that will present empirical evidence to prove the efficacy of OERs at HEIs.
- Having an expanded knowledge base with a large number of success stories will assist in debunking many myths lecturers have on OERs including context, content, hidden costs and their suitability at either under- or post-graduate levels.
- It would further be interesting to explore and understand the availability of Learning Management Systems that are aligned to the aspirations of the open movements.
- Furthermore it is suggested that research be conducted on how to develop, implement and promote OERs at HEIs.
- HEIs need to develop models that will suit their unique institutions to integrate OERs successfully in teaching and learning activities.

- The role that commercial publishing houses can play still needs to be spelt out as there is a need to take them on board and make use of their years of experience in the industry.

## **6.6 SIGNIFICANCE OF THE STUDY**

The study will inform those lecturers who were not aware of the OERs and will serve as a confirmation to those who have more or less information about such resources. It will also benefit both the curriculum designers and lecturers in that they will have a reference point for the development, implementation and promotion of OERs at the UFS.

## **6.7 LIMITATIONS OF THE STUDY**

Due to the limited timeframe in which to carry out the research for a dissertation, the research could not be applied on a wider scale. It was therefore narrowed to cover the lecturers on the Bloemfontein campus only. Time constraints also did not allow for the use of quantitative methods; instead, only an interpretive approach was used. However, according to McMillan and Schumacher (2014:10), over the years, technology has continued to refine methods and tools used for education research. The nature of such methods and tools in the education sector not only provides valid and credible results but also helps in the implementation of research findings which advance the body of knowledge (Ibid).

## **6.8 CONCLUSION**

The proliferation of the Internet and the good intentions of its creators are yet to reach all corners of the globe. The Internet has created a platform for the creation of information which, at times, is so overwhelming that many users sometimes feel overwhelmed.

The education sector is one of the beneficiaries of these technological advancements in that it has been forced to adjust its pedagogies to suit the ever-changing teaching and learning landscape. An open world in which educational resources, including OERs, can benefit everyone should be established.

A number of interested public and private institutions have jumped on the bandwagon and contributed to the expansion of the platforms where free and easily-accessible OERs can be accessed by all. Although many countries in the north, in comparison to those in the south, are actively involved in the development, implementation and promotion of OERs, there is still a great deal that needs to be done to convince a larger audience of the importance of integrating OERs into teaching and learning.

In addition, the provision of free, suitable and copyright-free educational resources at HEIs is a reality that will be realised by providing lecturers with evidence of the successful integration of OERs in teaching and learning. Due to deep-rooted traditions that still associate copyrighted educational materials with a better quality than the freely-available educational resources, including OERs, lecturers are yet to be convinced that there is a need to move away from such narrow-minded thinking. Mind-sets will not change overnight. However, for change to take place there is a need to provide more evidence that supports the need to integrate OERs into teaching and learning.

The presence of suitable policies may also serve as the guiding principle towards the development, implementation and promotion of OERs at HEIs. There is fertile ground at the UFS for OERs to be integrated into teaching and learning provided that proper infrastructure is in place because some participants showed reluctance based on a lack of knowledge, and thus their fears need to be allayed.

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## Appendix A: Letter of Request from the Vice Rector: Academic



**Student: Faculty of Education (HES)**

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**TO:** Vice-Rector: Academic

**From:** Aubrey Monde Madiba  
Student number 2013178211

**Date:** 15 March 2017

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### **Request to conduct a research study at the University of the Free State**

I am currently a Master's student in Higher Education Studies. As part of my case study, I need to conduct interviews with selected lecturers. I am therefore seeking permission to conduct my study at the University of the Free State where I will select my research participants. The title of my dissertation is: Lecturers' perceptions and experiences of open educational resources in teaching and learning.

According to the United Nations Education, Scientific and Cultural Organization (UNESCO) (2015:12), Open Educational Resources (OERs) are:

Open digital publications of high quality materials organized as courses that include lectures, related reading materials, snapshots of discussions, assignments, evaluations, and so on, used in academic environments such as universities, training institutions, schools and colleges.

My research proposal has already been accepted by the Title Registration Committee in the Faculty of Education and is attached to this request.

I believe that my study will be of significance to the UFS community as it will reveal the lecturers' perceptions about OERs as well as their actual use of OERs in their individual teaching and learning practices. Furthermore, it is envisaged that the recommendations will include those pertaining to strategies that will focus on the further development, promotion and integration of OERs in higher education. The study will be informative to those lecturers who may have no knowledge of OERs, but will be an affirmation to those already using OERs in their teaching practice.

I would appreciate your response as my next stage is to apply for ethical clearance. Should you wish to obtain additional information regarding the study, you may contact my supervisor, Dr Charity Ndeya-Ndereya, at [NdeyaCN@ufs.ac.za](mailto:NdeyaCN@ufs.ac.za) or on 051 401 9071.

I hope you will find this in order.

A handwritten signature in black ink, appearing to read 'A. M. Madiba'.

**A. M. Madiba**

**Student: Faculty of Education: Higher Education Studies**

**0514013526. [madibaam@ufs.ac.za](mailto:madibaam@ufs.ac.za)**

## Appendix B: Letter of request to the Faculty Manager: Teaching and learning



### Faculty of Education (HES)

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**TO:** The Faculty Teaching and Learning Manager

**From:** A. M. Madiba  
Student number 2013178211

**Date:** 19 May 2017

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#### Seeking permission to interview lecturers

I am currently a Master's student in Higher Education studies and as part of my studies I am expected to conduct interviews with selected lecturers.

The title of my dissertation is: **Lecturers' perceptions and experiences of open educational resources in teaching and learning.**

According to the United Nations Education, Scientific and Cultural Organization (UNESCO) (2015:12), OERs are:

[O]pen digital publications of high quality materials organized as courses that include lectures, related reading materials, snapshots of discussions, assignments, evaluations, and so on, used in academic environments such as universities, training institutions, schools and colleges.

The aim of this study is to investigate the lecturers' perceptions and experiences with regard to the use and integration of OERs in their teaching and learning.

I herewith seek your permission to interview two lecturers in your Faculty who will give their individual and subjective views regarding OERs.

One participant should have been in the teaching and learning environment at the UFS for a period of no less than two years but no more than five years, while the other should have been teaching at the UFS for more than five years.

I would like to be provided with the contact details (preferably e-mail addresses) of all of the lecturers in your Faculty who meet the above criteria.

The researcher will take responsibility and be accountable during the entire study process (Creswell, 2014:73):

- The collected data will be an honest reflection of the responses of the participants; and
- It will only be used for this study and will not be made available to a third party.

The findings of the study will inform the UFS community about the usage of OERs in teaching and learning at their institution.

I hope that you will find this in order.

**A. M. Madiba**

**Faculty of Education: Higher Education Studies**

0514013526. [madibaam@ufs.ac.za](mailto:madibaam@ufs.ac.za)

## Appendix C: Approved ethical clearance



Faculty of Education

11 May 2017

Dear Mr Aubrey Madiba

Ethics Clearance: **Lecturers' perceptions and experiences of Open Educational Resources in teaching and learning**

Principal Investigator: **Mr Aubrey Madiba**

Department: **School of Higher Education Studies (Bloemfontein Campus)**

### **APPLICATION APPROVED**

With reference to your application for ethical clearance with the Faculty of Education, I am pleased to inform you on behalf of the Ethics Board of the faculty that you have been granted ethical clearance for your research.

Your ethical clearance number, to be used in all correspondence is: **UFS-HSD2017/0192.**

This ethical clearance number is valid for research conducted for one year from issuance. Should you require more time to complete this research, please apply for an extension.

We request that any changes that may take place during the course of your research project be submitted to the ethics office to ensure we are kept up to date with your progress and any ethical implications that may arise.

Thank you for submitting this proposal for ethical clearance and we wish you every success with your research.

Yours faithfully

Dr M. M. Nkoane

Chairperson: Ethics Committee

Education Ethics Committee Office of the Dean: Education T: +27 (0)51 401 9683| F:  
+27 (0)86 546 1113 | E: NkoaneMM@ufs.ac.za Winkie Direko Building | P.O.  
Box/Posbus 339 | Bloemfontein 9300 | South Africa [www.ufs.ac.za](http://www.ufs.ac.za)

## **Appendix D: E-mailed invitation to lecturers**

**From:** Aubrey Madiba

**Sent:** Wednesday, 14 June 2017 12:22PM

**To:**

**Subject:** FW: Request to conduct interviews with selected lecturers

Dear Sir/Madam/Dr/Prof

I am a Master's student in Higher Education studies and, as part of my studies, I am expected to conduct interviews with lecturers from selected Faculties.

The title of my dissertation is: **Lecturers' perceptions and experiences of open educational resources (OERs) in teaching and learning.**

Four participants should have been in the teaching and learning environment at the UFS for a period of no less than two years and no more than five years, while the other four should have been teaching at the UFS for more than five years.

I have attached a consent form for your consideration.

I am looking forward to receiving your response.

Kind Regards

## Appendix E: Consent form

### CONSENT TO PARTICIPATE IN THIS STUDY

I, \_\_\_\_\_ (participant name), confirm that the person requesting my consent to take part in this research has informed me about the nature, procedure, potential benefits and anticipated inconvenience of participation.

I have read (or had explained to me) and understood the study as explained in the information sheet. I have had sufficient opportunity to ask questions and am prepared to participate in the study. I understand that my participation is voluntary and that I am free to withdraw at any time without penalty (if applicable). I am aware that the findings of this study will be anonymously processed into a research report, journal publications and/or conference proceedings.

I agree to the recording of the *insert specific data collection method*.

I have received a signed copy of the informed consent agreement.

Full Name of Participant: \_\_\_\_\_

Signature of Participant: \_\_\_\_\_ Date: \_\_\_\_\_

Full Name(s) of Researcher(s): \_\_\_\_\_

Signature of Researcher: \_\_\_\_\_ Date: \_\_\_\_\_

## Appendix F: Interview schedule

### UFS LECTURER'S INTERVIEW QUESTIONS

#### **1. Perceptions**

- 1.1 How knowledgeable are you about OERs?
- 1.2 What do you think about the influence of technology in teaching, learning and research?
- 1.3 How often do you use Information Communication Technologies in teaching and learning activities?
- 1.4 How long have you been in the teaching and learning environment?
- 1.5 What is your view on Faculties adopting Open Educational Resources for use in teaching and learning?
- 1.6 Although there are many educational resources that have been published for free under open licenses, some lecturers still prefer to prescribe those that are available at a cost from different publishers. Why is this still the case?
- 1.7 There are empirical studies that have demonstrated the efficacy of OERs, but many lecturers are still sceptical or not convinced about their effectiveness. What do you think would assist in allaying such mistrust?

#### **2. Experiences**

I am going to read out the following definitions of OERs from UNESCO and The William and Flora Hewlett Foundation and then link them to the 5Rs principles of OERs:

OERs are defined as open digital publications of high-quality materials that include lecture materials, related reading materials, snapshots of discussions, assignments, evaluations, and so on, used in academic environments such as universities, training and colleges (**UNESCO**).

**The William and Flora Hewlett Foundation** defines OERs as teaching, learning and research resources that reside in the public domain or have been released under intellectual property license that permits their free use or re-purposing by others. They include full courses, course materials, modules, textbooks, streaming

videos, tests, software, and any other tools, materials or techniques used to support access to knowledge.

2.1 Based on the above definitions, have you ever come across the examples listed above and used them using the 5Rs which I will also describe in relation to teaching and learning:

2.1.1 Re-use: use the work verbatim, exactly as you found it.

2.1.2 Re-work: alter or transform the work so that it better meets your needs.

2.1.3 Re-mix: combine the (verbatim or altered) work with other works to better meet your needs.

2.1.4 Re-distribute: share the verbatim, re-worked, or re-mixed work with others.

2.1.5 Retain: the right to make, own, and keep all copies of the content.

2.2 Currently, the UFS does not have a policy on OERs. Would you be willing to participate in the development, implementation and promotion of an OER policy?