

A META-SYNTHESIS ON THE USABILITY OF SOCIAL MEDIA BLENDS IN E-LEARNING

by

ERNEST MNKANDLA

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SUPERVISOR: Prof A Minnaar

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Abstract

Distance education has by nature always depended on technology as a vehicle for various media used to facilitate learning. Today as technology has taken centre stage in our lives especially Internet-based technology, distance education continues to grow in its use of state-of-the-art tools and hence the need to effectively adopt these online tools for online education remains inevitable. This study presents an evaluation of the usability of social media blends in e-learning environments. Comprehensive guidelines for improving the usability of social media blends are proposed in order to facilitate learner networks where knowledge can be created that is based on the learners' experiences and their peer connections.

In this meta-analysis study literature was searched to identify qualitative research articles that discuss social media blends most commonly used in e-learning. The search was done on South African and international academic databases which included SAe-Publications, EbscoHost, ProQuest and Google Scholar, among others.

The metadata analysis was conducted following the online collaborative learning theory as a conceptual framework and the findings agreed with previous studies that the use of social media blends still lacks important empirical data. This study recommends a set of phases in designing curriculum for social media use in e-learning. The proposed guidelines should be useful to instructional designers interested in using modern learning theories in e-learning. Since African qualitative research could not be found, further work in this field could involve qualitative studies on the use of e-learning in African institutions.

KEY TERMS: Distance education, open distance learning, social media blends, e-learning, online learning, qualitative research, connectivism, constructivism, meta-synthesis, online collaborative learning

DECLARATION

Name: Ernest Mnkandla

Student number: 55777503

Degree: MEd in Open and Distance Learning

A META-SYNTHESIS ON THE USABILITY OF SOCIAL MEDIA BLENDS IN E-LEARNING

I declare that the above mini dissertation is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references.



SIGNATURE

24/02/2016

DATE

DEDICATION

I dedicate this mini dissertation to my family.

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I am grateful to the Almighty for giving me yet another opportunity to explore unfamiliar territories of knowledge acquisition and philosophical indulgence in what I believe to be the future of learning i.e. open distance e-learning.

I am grateful to the following for contributing towards the successful completion of this study:

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- My family (wife Sindie, daughter Omuhle, and son Awande Kevin) who allowed me to take an additional three years out of their family time.
- Unisa for paying my fees and allowing me to study.

Knowledge is one of the few things in life that never stops growing; we just need to ensure that it is the right kind of knowledge.

“Technology never teaches pupils, it simply creates conditions under which they can learn”

(Adapted from Albert Einstein 1879 - 1955)

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LIST OF ACRONYMS OR ABBREVIATIONS

CAQDAS	computer-assisted qualitative data analysis
CAL	computer-assisted learning
CE	correspondence education
CoP	community of practice
DE	distance education
HCI	human computer interaction
ICT	information and communication technologies
IT	information technology
LCMS	learning content management system
LMS	learning management system
MOOCs	massive open online courses
OC	online courseware
OCL	online collaborative learning
ODE	online distance education
ODeL	open and distance and e-learning
ODL	open distance learning
VLEs	virtual learning environments
WBLRs	web-based learning resources

1 CHAPTER ONE: PURPOSE AND RATIONALE OF THE STUDY

1.1 Introduction and background

Today in 2015, we live in a world where technology plays a central role in almost every aspect of our lives, for example, the internet offers us access to a world where ordinary things that we interact with and use on a daily basis such as fridges, garages, motorcars, and others can be connected to the Internet. The use of technology in distance education has certainly changed teaching and learning; for example, when Ice (2010: 154) and Rogers-Estable (2014: 129) present an overview of future learning technologies they mention Web- 2.0 and 3.0 applications and emerging technologies. They indicate how these emerging technologies can be better applied in learning environments. Furthermore, several scholars (Bates & Sangrà 2011: 4, Moore & Kearsley 2012: 24, Anderson 2010: 23) show that technology has always played a central role in distance education. This is the case from the first generation of Distance education (DE) that was based on correspondence to the fifth generation which is based mainly on the Internet and the World Wide Web - WWW (Bates & Sangrà 2011: 4, Moore & Kearsley 2012: 24, Anderson 2010: 23, Garrison 2009: 94). These scholars agree that technology has not only changed DE but plays a central position in defining DE and its variants such as open distance learning (ODL) and e-learning.

This research study proposes an investigation into the usability of social networking applications in e-learning with the aim to develop comprehensive guidelines for the usability of social media in e-learning. In this chapter, I start with a brief explanation of the background to the problem. The research problem is explained next, together with the corresponding research question and objectives. A brief overview of the research methodology is given followed by study limitations, research ethics, and justification of the research followed by the definition of key terms, ending with the dissertation outline.

The experience of close to two decades of teaching information technology (IT) courses combined with the use of e-learning tools, experience from studying for a

qualification on the use of technology in distance education and e-learning, and analysis of literature such as (Mehlenbacher et al. 2005: 1-10, Petersen 2007, Park 2011: 78-102, Hadjerrouit 2010: 53-79) led to a realisation of the importance of the usability of e-learning technologies in Open and Distance and E-learning (ODeL). The continued growth in the use of social media blends as a tool in education has led to a proliferation of technologies that were not necessarily designed for use in teaching and learning (Harasim 2012: 98). If these tools commonly used in our day-to-day lives are not easy to use in education, or if they lack important functionalities that enable learning, then there would be no benefit in using them. It is, therefore, desirable to identify the usability limitations in social networking tools in order to provide means of improving the design of these applications. There is evidence of extensive research on software evaluation in general from the usability of special applications to the usability of websites. This research has resulted in a number of software evaluation models, tools and frameworks that are mainly focused on determining the ease of navigation. A detailed discussion can be found among others in Babar and Gorton 2004, Babar, Zhu and Jeffery 2004, Brown and Wallnau 1996, Hesari, Mashayekhi and Ramsin 2010, Matera, Rizzo and Carughi 2006, Small 1997, Squires and Preece 1999 and W3C Working Group 2014. While this research belongs to the broad field of software evaluation the main focus has been on evaluating educational software and specifically evaluating the usability of social media blends for connectivist learning in ODeL environments. Usability limitations of educational software, in general, have been extensively researched and resulted in evaluation frameworks as discussed in (Leacock & Nesbit 2007, Jones et al. 1999, Belyk & Feist 2002, Georgiadou, Economides, Michailidou & Mosha 2001, Nesbit and Belfer 2004). Fox and Naidu (2009) and Owens, Lenz and Speagle (2009) evaluate the usability of the most commonly used social media blends and find first-time users to be negatively affected by the lack of compliance with generic usability guidelines. Usability limitations of e-learning software including in some cases some social networking sites have also been identified through a number of educational frameworks. The first example of such frameworks is the “usability heuristics for e-learning design” which is focused on resolving limitations in the design of usable instructional lessons on complex e-learning interfaces (Mehlenbacher et al. 2005: 1-10). The second example is the “conceptual framework to explore the design and

evaluation of web-based learning resources (WBLRs)” whose second of the three-step design process focuses on usability issues. These issues are resolved through an analysis that leads to a definition of technical and pedagogical usability for WBLRs (Hadjerrouit 2010: 53-79). Koszalka and Ntloedibe-Kuswani (2010: 139-157) identify usability limitations for mobile learning technologies. Park (2011: 78-102) reconceptualises mobile learning into four types in order to deal with issues of transactional distances. Frameworks for evaluating Web-based learning have been used with interesting findings such as little regard for principles of instructional design, and the need to improve tools for learner collaboration (Georgiadou, Economides, Michailidou & Mosha 2001, Hadjerrouit 2010: 53-79, Jones et al. 1999, Park 2011: 78-102). Existing frameworks discussed in Park (2011: 78-102) and Koszalka and Ntloedibe-Kuswani (2010: 139-157) have among other things addressed issues such as the usability of mobile technologies in e-learning. What still remains a challenge is the identification of key aspects of social media blends as used in ODeL that can be exploited by instructional designers to come up with curriculums that do not limit teaching creativity, interactions, as well as learning capabilities.

1.2 Purpose of the study

Using tools of any kind to aid in various tasks we as educators in ODL may face, has always meant the difference between success and failure in what we intend to achieve as humans, and e-learning is no exception. One area that has seen significant growth in tools used by humans for education is social media blends; however, their usability remains a challenge.

The purpose of this research is, therefore, to investigate the usability of social media blends as tools in e-learning, in order to identify key aspects of these social media blends, and hence develop good practice guidelines for improving their usability in ODL.

1.3 The problem statement

It is contended that whilst the technical usability of software has been constantly

improving owing to the growth and maturity of fields such as human-computer interaction (HCI), the pedagogical usability of educational software is still lagging behind. Özmen and Atici (2014: 60-74) and Brady, Holcomb and Smith (2010: 151-170) discuss, for example, the limitations imposed by some learning management systems (LMS) that inhibit creativeness in teaching, collaborations, as well as the methods of content preparation by instructors. However, Siemens and Tittenberger (2009: 23) posit an instruction design approach where in using social media an instructor focuses less on content presentation but more on enabling learners to create personalised learning networks. Furthermore Naidu (2006:67) advocates for a design that clearly integrates the media and the set of teaching and learning strategies or instructional method and this approach is in agreement with the constructivist approach to learning. Poore (2013: 27-39) reiterates social media's support for constructivist learning and also explains the value of an appropriate educational design. This is in agreement with Beach & Doerr-Stevens (2011: 165-181) who have run experiments on high school learners using social media blends that were designed to foster collaborative discussions and find that learners acquire analytical skills.

The use of educational pedagogies in line with the use of social media in online learning in higher education is allocated high priority in higher education, online learning and elsewhere in education. There is a growing body of knowledge regarding the use of social media in online learning in higher education. The results of research in social media in online learning in higher education seems to be diverse and poses a problem to academics who are selecting and deciding which social media is applicable and how much social media should be included in online learning. Another problem is that academics find themselves overwhelmed by the availability of social media and there is not enough evidence for best practices regarding social media in online learning in higher education. Furthermore, there is a proliferation of literature regarding the use of social media and online learning. Hence the need to analyse and synthesise the literature to establish guidelines for good practice when using social media blends in ODeL in higher education.

1.4 Research question

The main research question is:

- Are there clear guidelines on the use of social media blends in e-learning in higher education?

The secondary questions are:

- To what extent do countries differ in their selection and usage of social media?
- From the perspective of online collaborative learning (OCL) concepts, how do social media facilitate communication, co-creation of knowledge and collaborative learning in e-learning environments?

1.5 The research objectives

The objectives of this research study were as follows:

1. To analyse primary qualitative research studies on social media blends in E-learning courses.
2. To synthesise primary qualitative research studies on the usage of social media in e-learning in higher education institutions worldwide from 2000 to 2015.
3. To provide a good set of practice guidelines in the form of a framework for adopting social media in E-learning and for ODL in Higher Education.

1.6 Research methodology

A qualitative research paradigm was used in this research following interpretive synthesis of data from primary qualitative research studies conducted between 2000 and 2015 worldwide. Studies using different qualitative methods such as phenomenology, case studies, ethnography and grounded theory approaches were included. This study aims to develop guidelines for the usability of social network blends in e-learning at ODL institutions.

Meta-study research is composed of three discrete analytical phases: the meta-method, metadata analysis and metatheory, followed by the synthesis phase (Minnaar 2011: 486). During the meta-method phase, the researcher conducts a thoughtful investigation of the way methodologies were used to collect and interpret the data. In the metadata analysis phase the researcher reinterprets the actual findings from the identified primary qualitative research. During the third or metatheory phase, care is taken in examining the theories that lead to the topics, frameworks and research questions of the primary researchers (Minnaar 2011: 486, Thorne, Paterson, Acorn, Canam, Joachim & Jillings 2002: 437-452, Sandelowski, Trimble, Woodard & Barroso 2006: 11-12). Lastly, this study will provide a good practice guideline for usage of media blends to guide ODL practices in a digital era.

1.7 Limitations and delimitations of the study

A realisation that today we live in a world where most learners are socially connected through some kind of social media is at the heart of this research. Based on this concept of social connectivity the research assumes that the most commonly used social media blends have also been used in DE and the evaluation of their usability was based on that assumption. While the developed guidelines recommend ways of developing curriculum for connectivist learning in social media blends the framework cannot be expected to allay security-related fears normally associated with the use of social media (Siemens & Tittenberger 2009: 14).

1.8 Ethical considerations

Leedy and Ormrod (2010: 101) categorise most research ethics issues into one of these four aspects: protection from harm, informed consent, the right to privacy, and honesty with professional colleagues. The whole point of ethics considerations in research is for researchers to ensure the protection of the participants from physical or psychological harm (Leedy & Ormrod 2010: 102). In line with the requirements of the Unisa research ethics, policy the researcher obtained clearance from the university. This research did not involve the collection of data from humans and did not use data from humans but was based on collection and analysis of literature. All

data was stored and will be disposed of in accordance with the stipulated rules of the university.

1.9 Definition of terms

The terms defined in this section are key to the main concepts discussed in this research.

Distance education

Distance education also called distance learning is defined succinctly by Peters (2010: 113) as follows: “Distance education usually involves a situation where learners are separated at a distance from their teachers, involves the provision of systems (electronic or otherwise) to establish and maintain communication between teachers and learners, and employs a form of pedagogic interchange between the teacher and the learner to promote learning, assessment and support”.

Web-based learning

Web-based learning is the use of the Internet or an intranet to facilitate teaching and learning (Khan 2001). Web-based learning and e-learning are usually used synonymously but they are not necessarily the same.

E-learning

E-learning is not restricted to the Internet but additionally includes the use of personal computers, CD-ROMs, Digital Television, Personal Digital Assistants and Mobile Phones in education (Veeramani 2010: 20-24).

Open distance learning

ODL implies multidimensionality in bringing together the following elements that play a major role in education: time, geographical, economic, social, educational and communication distance between student and institution, student and academics, student and courseware and student and peers (Unisa 2008). Open distance learning, therefore, focuses on “eliminating barriers to access learning, the flexibility of learning provision, student-centeredness, supporting students and constructing learning programmes with the expectation that students can succeed” (Unisa 2008:

2).

Connectivism

Downes (2012: 9) defines connectivism as the notion that knowledge is distributed across a network of connections, implying that learning consists of the ability to construct and traverse those networks. Connectivism, therefore, assumes the starting point for learning to be when knowledge is triggered through the practice “of a learner connecting to and feeding information into a learning community” (Kop & Hill 2008:1). Siemens (2005: 3–10) states the following about connectivism: “A community is the clustering of similar areas of interest that allows for interaction, sharing, dialoguing, and thinking together.”

Constructivism

Constructivism is a learning theory which was started by Jean Piaget who postulated constructivism to be a theory that supports the generation of knowledge and meaning by humans as a result of interactions between human experiences and generated ideas; a concept whose origins can be linked to Vygotsky's philosophy (Liu & Matthews 2005: 387).

Social media

Social media refers to the social collaboration among people in order to create information, share or exchange information, ideas, and pictures and/or videos in virtual communities and networks (Ahlqvist, Bäck, Halonen & Heinonen 2008: 3). In other words, as Kaplan and Haenlein (2010: 61) point out, social media is a group of Internet-based applications that are based on Web 2.0 to allow the creation and exchange of user-generated content.

Meta-synthesis

Meta-synthesis is a research method that assimilates results from different interrelated qualitative studies to create an understanding that explains the study findings (Walsh & Downe 2005: 204).

1.10 Dissertation outline

Chapter 1: provides an introduction to the research problem and summarises the

literature that provides the background to the problem without giving detailed analyses.

Chapter 2: presents a detailed review of the literature that builds the theoretical foundations of the research problem and analyses current research efforts in the usability of Web-based learning software.

Chapter 3: discusses the research methodology used to address the research problem, its related questions as well as the research objectives.

Chapter 4: discusses the results of the meta-synthesis and presents the set of guidelines for the use of social media blends in e-learning.

Chapter 5: concludes the research and looks at what the research found in relation to the use of social media blends in e-learning.

1.11 Conclusion

This chapter was an introduction to the problem under investigation, presented the research question, and the approach that was followed in trying to solve the identified problem. The major terms used in this research were also comprehensively defined in this chapter. The limitations of the study and research ethics were also explained in detail. The next chapter presents a brief literature review of the work on social media blends in e-learning.

2 CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter presents a review of the current literature on social media and e-learning. This chapter also describes relevant theories in ODL, focusing on the evaluation of online technologies and social media blends in particular. The theoretical frame that guides the research is also discussed here.

2.2 Open and distance education

Distance education (DE) is a topic that has been widely researched and continues to command a lot of interest in the world. There are therefore a number of perspectives from which DE has been defined; Moore and Kearsley (2012: 2) define DE as teaching and learning in which the teacher and learner are in different places thereby necessitating communication through technology and special institutional organisation. Garrison (1985: 235) views DE as inextricably linked to technology and the provision of two-way communication to deal with the separation between the teacher and student. In addition Peters (1998: 18) considers DE learning to be made up of the major challenge of teachers and students who are not near to each other. The common ground of most of these perspectives of ODL is the emphasis on the absence of face-to-face communication between the teacher and the learner, the use of various communication technologies, and the reference to DE's correspondence education origins. Some points worth noting about DE from a few scholars such as Simonson, Schlosser, and Ollerana (2011: 124) are that "what is known about effectiveness in general education (face to face) is most often also applicable to distance education". The counter idea of the theory of most industrialised education supports Peters (2010:13) where he concludes that "theories of face-to-face instruction" cannot work in DE. Panchabakesan (2011:113) uses the following words to define DE: "Distance education usually involves a situation where learners are separated at a distance from their teachers, involves the provision of systems (electronic or otherwise) to establish and maintain communication between teachers and learners, and employs a form of pedagogic interchange between the teacher and the learner to promote learning, assessment and support." Combining the importance of electronic systems to effect communication resonates well with the focus of this research. This definition was favoured among many as it highlights the concept of

usability. See table 2.1 for the different generations of distance education.

2.3 Online learning

Online learning is not only the delivery of learning materials on the Web: it is the accessing of learning material on the Internet leading to interaction with the content and subsequent attainment of learning experience through knowledge exchange with the instructor and other learners (Anderson 2008: 17). It is worth noting that in the early stages, online learning pedagogies originated in relation to educators who had face-to-face teaching experiences and, therefore, aspired to replicate collaborative classroom learning approaches such as group discussions, seminars and group projects online (Harasim 2012: 84). In the 1970s when online learning ideas were starting to germinate, there was little hope of its feasibility due to technology limitations (Harasim 2012: 84-85). However, with the emergence of the Internet the mid-1990s a significant change occurred in the acceptability of online learning and today we would not speak of online learning if not referring to the Web (Harasim 2012: 86-87).

It is interesting to realise that despite the apparent increased growth in the support for online learning educators are still faced with the challenge of poorly defined theories, pedagogies, approaches, tools and environments of online learning (Harasim 2012: 87). It is, therefore, befitting for this study to define online learning as a comprehensive medley of theories and practices that underlie online collaborative learning, online distance education and online courseware.

2.4 The framework guiding the study

We live in the era of the first generation that has grown up in the digital age. They are therefore eager to collaborate and most of these adolescents know how to use a computer and the Internet. This collaboration generation grew up interacting. The “Net Gen” does not refer to passive recipients of mass information, they learn by searching, reading, scrutinising, authenticating, collaborating and organising and they spend time on problem-solving and creating new ideas (Carliner & Shank 2008: 278, Chandana & Liyanage Chamila 2013: 51). Many academics are confused and unsure of how to proceed while students are adapting to online group work and collaboration (Dooly 2008: 21-45). Many educational institutions treat online learning as an option which is a major problem. What is the solution? Teachers and

academics should understand the educational paradigmatic changes and implement new pedagogies and theories suitable for the new generation of learners.

The 21st century signals that there is a need for a learning theory that emphasises knowledge creation and innovation. The challenge is not to create sweeter carrots or sharper sticks, but how to engage learners in creative work with intrinsic rewards in the context of the Internet and Knowledge Age. It still seems in 2016 that online learning is poorly understood and, therefore, it is important for educators to understand theoretical frameworks underlying online learning better. At least three distinctive models have been commonly used in online learning - with different results. Firstly, we need to differentiate between the following approaches; Online Collaborative learning (OCL), Online Distance Education (ODE) and Online Courseware (OC). All three approaches use the Internet and the World Wide Web for educational purposes but in different ways. OCL employs a significant teacher role in all activities and collaboration which includes online discourse, led by a group learning instructor with Internet-mediated discourses (Harasim 2012: 92). ODE employs the correspondence model for course delivery and self-study and individual learning and communication with a tutor (paper under glass and text-based delivered via the Internet) discourses (Harasim 2012: 92). OC is based on individualised learning without an instructor and other student interaction and it could also be referred to as paper under glass with Internet-mediated presentations discourses (Harasim 2012: 92).

2.4.1 Online collaborative learning theory

Online collaborative learning theory focuses on educational applications that facilitate idea generation, idea organisation, and intellectual convergence through the Internet (Harasim 2012: 93). The OCL theory was proposed by Harasim as composed of three intellectual phases which are: idea generating (IG), idea organising (IO), and intellectual convergence (IC).

Idea generating is the first phase during which the collaborating group is characterised by differing ideas and activities resulting from brainstorming, verbalisation, and generating information, which lead to the sharing of information subsequently leading to positions on a problem of interest (Harasim 2012: 93).

Idea organising: once the ideas have been generated in the first phase, the second phase then involves the consolidation of these generated ideas according to their strengths and the discarding of the outlying ideas (Harasim 2012: 93). The main focus of IO is to start the process of conceptual change, intellectual progress, and shift towards convergence of ideas to cluster the ideas according to their strengths and relationships or lack thereof (Harasim 2012: 93).

Intellectual convergence is the third and final phase of the OCL theory and is in simplest terms a knowledge construction stage which involves active engagement in the construction of knowledge on shared understanding by way of group synthesising of ideas and knowledge and consolidation of common understanding and convergence (Harasim 2012: 93).

Lastly, the OCL theory manifests into scientific knowledge or hypotheses and social application resulting in knowledge building. Figure 2.1 presents a graphic view of the OCL theory.

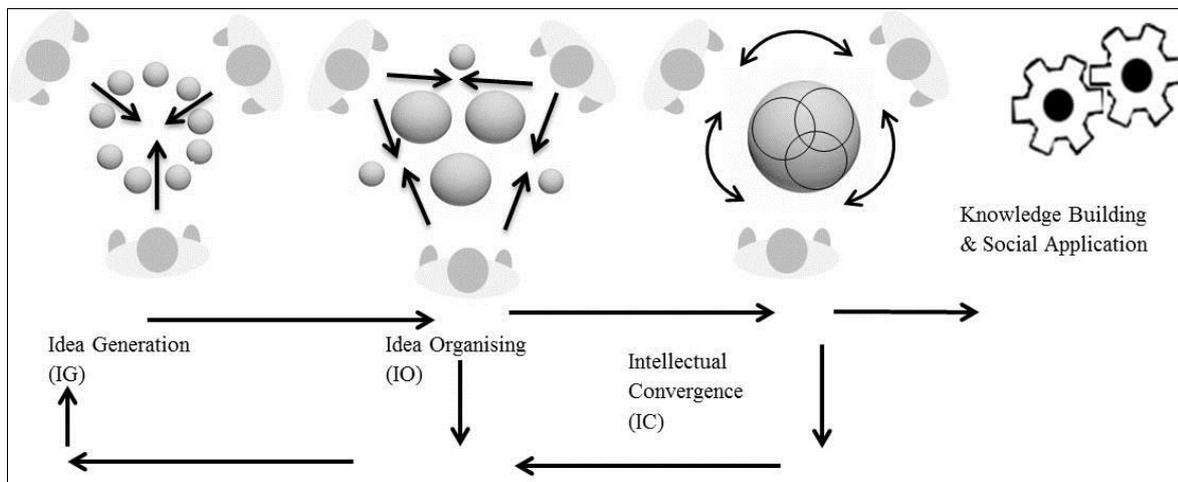


Figure 2.1: Three Intellectual Phases of Online Collaborative Learning (adapted from Harasim (2012: 94))

In order to facilitate Idea Generation, Idea Organisation, Intellectual Convergence and knowledge building in e-learning, social media blends among other technologies in order to facilitate the collaborative interactivity. It is worth noting that the Internet plays a vital role in social media.

2.4.2 Online learning technologies

The Internet has now become part of our lives to the extent that we Google almost anything that we want to know about and it has also assumed an important role in Web-based learning. Web-based learning implies the use of the Internet or an intranet to facilitate teaching and learning (Khan 2001: 415). Web-based learning and e-learning are used synonymously although e-learning is not restricted to the Internet but additionally includes the use of personal computers, CD-ROMs, Digital Television, Personal Digital Assistants and Mobile Phones (Veeramani 2010: 22). E-learning, therefore, makes use of a number of components that work together to provide an acceptable learning environment. These components include a “learning management system (LMS) or learning content management system (LCMS), content, collaboration, testing and assessment, skills and competency, e-commerce, and Internet video-based learning” (Veeramani 2010: 20). Minović et al. (2008: 561-570) emphasise the importance of the usability of the LMSs since they posit e-learning to be based on an LMS. Again the issue of usability appears as an important aspect of technology in DE. Since e-learning has a strong focus on the use of electronic or information and communication technologies (ICT) in education, the use of social media blends in e-learning would be of great benefit considering that social media can run on PCs and mobile devices.

The emergence of social media blends which are parts of social media enables systems such as Web-2.0 that facilitates social interactions as part of the learning environment (Redecker 2009: 5). Conversely, Web 1.0 has improved print-based learning as a means of transmission and consuming research. What is different with web 2.0 technologies is that real interaction, peer commenting and collaborative research are actually possible in a distributed manner worldwide. Web 2.0 is in fact a research network as well as a learning platform or network. Web 2.0 has changed the way we acquire knowledge. Knowledge consuming is no longer a linear process. Blogs and wikis are ideal tools for this interaction and the co-creation of knowledge. The concept of Web 2.0 and social interactions shows the relevance of exploring the usability of social networking tools in order to improve curriculum design in such environments. The concept of Web 3.0 or the semantic Web which continues to gather momentum (Lassila & Hendler 2007: 90-93) can also be considered relevant

to online learning since it is envisaged to introduce intelligence in online activities (Loureiro, Messias & Barbas 2012: 532-537, Kurilovas, Kubilinskiene & Dagiene 2014: 654-662). It could, therefore, introduce intelligence into the way learners collaborate.

2.5 Usability of e-learning technology

Usability of any software application is an important aspect of the design of the application and the value of usability to the general quality of the software application is important, as discussed by Norman (1998: 269) and Nielsen (1994: 154). Researchers in educational software such as (Leacock & Nesbit 2007: 45, Tselios, Avouris, Dimitracopoulou & Daskakaki 2001: 356) have also shown the importance of software usability. According to Leacock and Nesbit (2007: 48) improvements on usability usually focus on preventing errors. This, however, seems paradoxical to the concept of learning from mistakes as encouraged in most instructional activities (Lohr 2000: 161–182). The common mistake pointed out by Kukulska-Hulme and Shield (2004: 2) is that of leaving the website usability needs to technical experts who usually neglect content-related requirements. Kukulska-Hulme and Shield (2004: 2) agree with (Özmen & Atici 2014: 61) that the issue of pedagogical usability is often neglected in the design of pedagogical websites. This research intends to explore the pedagogical usability aspects of social media blends as used in online education.

The points of discussion as suggested by Folmer and Bosch (2004: 62); Dalsgaard (2006: 5); Joo and Lu (2011: 12); Kukulska-Hulme and Shield (2004:3) as well as Insfran and Fernandez (2008: 82) in evaluating the usability of Web-based resources are efficiency, effectiveness, satisfaction, learnability, memorability, safety, and utility. These aspects of website usability formed the basis for the evaluation of social media blends usability in this research.

Distance learning can by nature only be implemented via media such as text, images, sound and artefacts through a physical carrier called technology (Moore & Kearsley 2012: 91); hence, DE institutions should lead the use of new media and technologies for teaching and learning. It has therefore been broadly accepted to describe the development of distance education from the perspective of generations of technological innovations, according to the concept of Garrison (1985: 236-239). These generations of technological innovations present a timeline view that helps us

understand the integration of multimedia learning in the development of distance learning. These changes in technology enabled improved interaction among students and between the students and teachers. From the time of correspondence education which was dependent on slow surface mail to telecommunications where interaction was more immediate through teleconferencing and other technologies to the computer age where intelligent computer-assisted learning (CAL) programs provided immediate interaction by emulating the teacher and answering some students' queries (Anderson 2003: 136).

The developments in education technologies can be summed up in what is commonly known as waves of DE or generations of DE starting from the first wave from about 1451 to around 1916 characterised by correspondence education (CE), the second wave from about 1918 to around 1955, the third wave from about 1956 to 1968 (Heydenrych & Prinsloo 2010: 9, Mbatii 2013: 6-7), the fourth wave from about 1968 to 2005, and finally, the current wave is the fifth characterised by Web 2.0 technologies as shown in Table 2.1. There are various structures of the waves of DE or generations of DE and the periods may differ; for example, the other structure found in Anderson and Dron (2011: 84-90) has four generations. The main purpose of discussing these waves is to give some perspective on the changes in technology and corresponding theories in DE leading to the theory of interest in this research on connectivism. Connectivism's origins are rooted in constructivism, a learning theory started by Jean Piaget. He posited constructivism as an epistemology that supports the generation of knowledge and meaning by humans to be a result of interactions between human experiences and their ideas. This concept is also supported by Vygotsky's philosophy (Liu & Matthews 2005: 393-396). Connectivism is associated with George Siemens (2005: 3-5) who postulates that learning occurs as the result of creating environments, such as mass open online courses (MOOCs), in which connections can be made to form communities of knowledge (Kop & Hill 2008: 5-6, Siemens & Tittenberger 2009: 10, Siemens 2005: 7).

Table 2.1: Generations of distance education

Generation	Pedagogy and interaction	Medium	Production	Storage	Delivery
1 st (1451–1916)	<i>Behaviourism.</i> Content-based and dominated by limitations of print technology – self-pacing – mass delivery	Text and images – the advent of film	Printing press, manual design and recording	Books and letters	Mail system (correspondence)
2 nd (1918–1955)	<i>Behaviourism and cognitivism.</i> Content-based with limited interaction – mass delivery of DE and controlled access based on gender, class/caste, culture and age	Text, images, sound and video (film) – the advent of instructional television	Printing press, sound and video/film recording, manual and computer design/programming	Recordings – audio cassettes and video cassettes	Mail system/television/telephone/sound playback equipment

Generation	Pedagogy and interaction	Medium	Production	Storage	Delivery
3 rd (1956–1968)	<i>Behaviourism/cognitivism/constructivism.</i> Mostly asynchronous with limited interaction – mass delivery of DE – computer-aided instruction – computer-assisted learning	Text, images, sound, video, instructional and live television	Printing press, sound and video/film recording and computer design/programming	Recordings – audio cassettes and video cassettes –storage on discs	Mail system/ television/ telephone/ computers/ video and sound playback equipment – first computers used to send batches of data
4 th (1969–2005)	<i>Behaviourism/cognitivism/constructivism/social constructivism or constructionism enactivism/connectivism.</i> Content starting to move away from the university – asynchronous and synchronous interaction – mass delivery becomes problematic and demands for interaction challenge ICTs	Text, images, sound and video	Check this out – computer and videoconferencing were available in 4 th (even in the 3 rd) generation		Mail system/ television/telephone/ computers video and sound playback – equipment – computers starting to become a generic device and WWW and the Internet as generic platforms

Generation	Pedagogy and interaction	Medium	Production	Storage	Delivery
5 th (present day)	<i>Behaviourism/cognitivism/constructivism/social constructivism, Connectivism (why not?).</i> Content starting to move away from the university – asynchronous and synchronous interaction – mass delivery becomes problematic and demands for interaction challenge ICTs	Text, images, sound and video Web 2.0 interactive online technologies	Printing press, sound and video/film recording and computer design/programming/user involvement -Blogs, mini-blogs, chats, email, message boards, online conferencing, social media blends, wikis	Digital storage media (CD, DVD, memory sticks, central servers, hard drives, etc.)	Mail system/television/telephone/computers/video and sound playback – equipment – computers starting to become generic device and the Web and the Internet as generic platforms Asynchronous and synchronous delivery

Source: Adapted from Heydenrych and Prinsloo (2010: 5-26), Clark and Mayer (2008: 284) in Mbatl (2014: 23 -25)

Based on the OCL theory which supports generation of knowledge through a learner-centred approach (Hase & Kenyon 2000: 3) this research sought to formulate guidelines for designing e-learning courses using social media blends in such a way that facilitates learning through a learner-centred system based on social media blends. For the purpose of this research I used the following strategies to guide the research:

1. Engaging threaded discussion forums and communication (icebreakers, introductions, netiquette, peer reviews)
2. Collaborative research projects (Wikis, content discussions, debates)
3. Learner-directed written assignments (blogs)
4. Peer assistance with learning activity completion (co-facilitation, group presentations of authentic projects and learner-facilitated discussions)
5. Self-assessment strategies and feedback (self-reflections and evaluations of future recommendations)
6. Reflective assessment (self-reflections and evaluations of future recommendations)
7. E-portfolios

The researcher found most of the research on online learning and media blends to be quantitative and just scratching the surface as illustrated by (Naidoo 2012: 127-149, Burgos 2013 79-86, Brown & Adler 2008: 17-32, Abeywardena & Tham 2012: 1-11). It is clear from these findings that a more detailed study such as a meta-synthesis would go a long way in identifying the usability of social media blends in e-learning.

Furthermore, most of the qualitative research on online learning and social media were divergent and there was no clear good practice guideline for selecting and usability of social media blends in online learning (De Villiers & Pretorius 2013: 58-72, Maleko Munguatosha, Birevu Muyinda & Thaddeus Lubega 2011: 307-320, Weichuan & Ee-Lon 2008: 398-410, Lwoga 2012: 90-107 and Popescu 2014: 199-212).

2.6 Conclusion

This chapter reviewed the literature forming the background on the use of social media blends in e-learning. The main terms such as open and distance education, online learning, online collaborative learning theory, online learning technologies, the usability of e-learning technology were discussed in detail to set the basis for the study. OCL theory which forms the basis for this research was then discussed.

OCL theory can be considered as a modern learning theory that finds a lot of relevance and applicability in today's Web 2.0 technologies and is likely to remain relevant for the next generation of Web 3.0 technologies. OCL was therefore considered appropriate for this study due to its emphasis on learning as a social activity; a notion supported by social media learning where knowledge is constructed from social interactions.

The next chapter will present the details of what constitutes meta-study, from the meta-data-analysis, meta-method, meta-synthesis to meta-theory, hence giving the details of the methodology that was followed in conducting this qualitative study.

3 CHAPTER THREE: RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

This chapter presents the research methodology used to address the research problem, its related questions as well as the research objectives. As illustrated in chapter one, the growing body of knowledge regarding the use of social media in online learning in higher education poses a problem to academics in the selection of social media in online learning in higher education. Another problem is that academics are overwhelmed by the availability of social media and there is not enough evidence for good practices regarding social media in online learning in higher education. There is a proliferation of literature regarding the use of social media and online learning that explains the need for a research study to analyse and synthesise the literature to establish guidelines for good practice when using social media blends in ODeL in higher education.

Literature shows divergent views on possible best practices for online learning interaction (Ku, Tseng & Akarasriworn 2013: 927-928, Jahng, Nielsen & Chan 2010: 54-55, Zhu 2012: 133, Caballé, Xhafa & Barolli 2010: 27, Schroeder, Minocha & Schneider 2010: 3–10). Ku, Tseng and Akarasriworn (2013: 927-928) find, for example that the satisfaction of online learners in teamwork to be dependent on team dynamics, team acquaintance, and instructor support. Jahng, Nielsen and Chan (2010: 54-55) find the satisfaction and success to be dependent on the size of the student groups – with smaller sizes being better. A study by Zhu (2012: 133) finds that students' satisfaction is more positive if they work on a group product. In the same study in which two groups are compared, one group points out instructor support (presence online) to be important, which is in agreement with Jahng, Nielsen and Chan (2010: 54-55). The other group, however, does not find instructor support of any import and García and Cabrero (2012: 821) fail to find any advantage of using social networks over using a conventional learning management system.

These studies also demonstrate clearly the need for meta-study and hence this qualitative research meta-synthesis of primary qualitative research studies is conducted following an interpretive approach. The sources investigated range

between 2000 and 2015 worldwide. The research includes studies involving different qualitative methods such as grounded theory, case studies, ethnography and phenomenology approaches (Minnaar 2011: 486).

As deliberated in the first chapter of this dissertation, the wide use of social media in e-learning seems generally coincidental and serendipitous and, therefore, may lack deliberate planning in instruction design to take advantage of the ubiquity of social media in order to use them as an effective learning tool.

3.2 Research Paradigm

Research is a complex undertaking whose process is composed of three major dimensions (Hesse-Biber & Leavy 2010: 4; TerreBlanche, Durrheim & Painter 2006: 6) which are: ontology, epistemology and methodology. TerreBlanche, Durrheim and Painter (2006: 6) therefore define a paradigm as a comprehensive system that uses ontology, epistemology and methodology to define an interconnection of practice and thinking to represent the researcher's nature of the enquiry. An ontology can be considered to be the "nature of the reality that is being studied, and what can be known about it" (TerreBlanche, Durrheim & Painter 2006: 6). This refers to "a philosophical belief system about the nature of social reality—what can be known and how" (Hesse-Biber & Leavy 2010: 4). Epistemology entails "the nature of the relationship between the researcher (knower) and what can be known" (TerreBlanche, Durrheim & Painter 2006: 6). According to Hesse-Biber & Leavy (2010: 4) the philosophical foundation of a research project is determined by the researcher's ontological and epistemological positions. The third dimension of a research paradigm is methodology, which should represent the way the researcher views social reality (i.e. in the case of a qualitative researcher; post-positivist, interpretive, and critical) and the way the researcher will use theory – i.e. deductive or inductive (Hesse-Biber & Leavy 2010: 5). The methodology is, therefore, a "bridge that brings our philosophical standpoint (on ontology and epistemology) and method (perspective and tool) together" (Hesse-Biber & Leavy 2010: 6).

Faced with the social reality of an ever-growing use of social media in education, the researcher, therefore, assumes an interpretive paradigm in order to qualitatively explore the realities that surround the use of social media for instruction in distance education.

3.3 Qualitative research methodology

This research was conducted using qualitative research methodology, which Creswell (2013:183) describes as research that uses words and pictures for data collection and presentation. In this research, I used words in the form of texts extracted from published primary qualitative research on the use of social media in higher education. Denzin and Lincoln (2008:4) posit that qualitative research is usually realised through ethnographies, case studies, survey interviews and historical and documentary analysis. This research employed meta-study as explained in the sections that follow. Qualitative meta-study was deemed relevant and necessary for this study because the researcher believes that over the past fifteen years enough research has been conducted to reveal important pedagogical trends and themes in the use of social media in e-learning; hence, a careful study of such literature would reveal the necessary information. According to Hesse-Biber and Leavy (2010: 4) qualitative researchers are after meaning that can be extracted from texts and other objects.

3.4 Research Design

In designing research, the researcher has to conceptualise an inquiry approach that looks at the research problem from the theoretical lenses (in this case an interpretive paradigm was assumed) that have been scientifically proven by those who came before us. Otherwise, the world of science may not respect research that is conducted on speculations and unscientific assumptions no matter how logical the methods may seem and no matter how sensible the findings may appear. This researcher, therefore, stood on the interpretivist (or anti-positivist) paradigm to conduct a qualitative enquiry using the study of existing studies in order to explore possible themes that can inform effective instructional design on

the abundant social media as e-learning tools.

Meta-study has origins according to Alexander and Colomy (1992: 7-26) that are from social sciences where a generation of postpositivist scholars from the past have voiced extensive interest in synthesising diverse theoretical and disciplinary positions into grand theories. Qualitative meta-study can, therefore, be considered a research approach that involves the analysis of the theory, methods and findings of qualitative research and the consequent synthesis of identified themes into new ways of discernment of phenomena.

Meta-study research is composed of three discrete analytical phases: the meta-method, metadata analysis and metatheory - followed by the synthesis phase (Minnaar 2011: 486). During the meta-method phase, the researcher must conduct a thoughtful investigation of the way methodologies were used to collect and interpret the data. In the metadata analysis phase, the researcher must reinterpret the actual findings from the identified primary qualitative research. During the next phase; the metatheory, care is taken in examining the theories that lead to the last phase of meta-synthesis of the topics, frameworks and research questions of the primary researchers as displayed in figure 3.1 below. The meta-synthesis research study concludes with a good practice guideline (Minnaar 2011: 486, Thorne et al. 2002: 437-452, Sandelowski, Trimble, Woodard & Barroso 2006: 11-12).

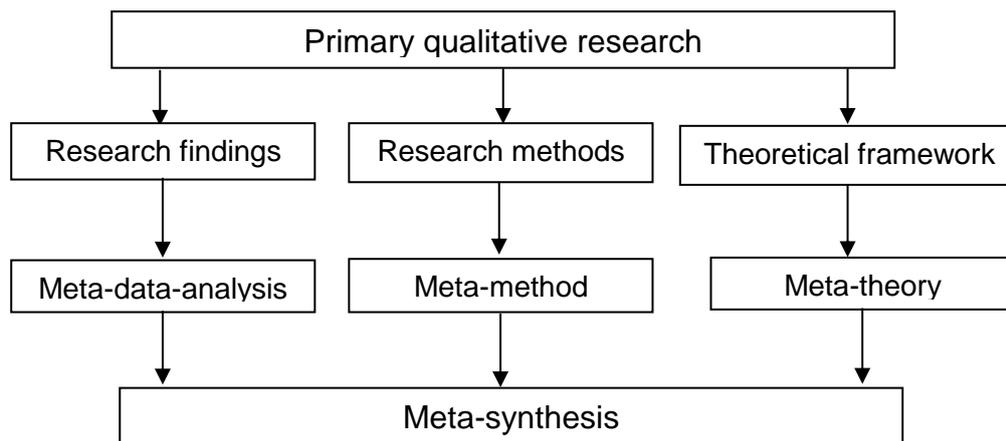


Figure 3.1: Components of a meta-synthesis

According to Zimmer (2006: 312), qualitative meta-synthesis is considered a

qualitative method of research that uses data from primary qualitative studies that allow researchers to focus on a phenomenon of interest. This gives them the ability to identify and understand relationships between studies and subsequently create a collective view of the phenomenon. The use of qualitative meta-synthesis in this research was envisaged to facilitate the creation of comprehensive guidelines on the use of social media blends in e-learning.

The search terms are:

- open distance learning
- social media blends
- e-learning
- online learning
- qualitative research
- social networks
- usability

They were submitted to the search librarian of the University of South Africa, together with one researcher who did online searching using the same terms. The search was done on South African and international academic databases which include the following:

- SAe-Publications
- EbscoHost: Academic Search Premier, Education Source Business Source Premier, Eric, Teacher Reference desk and PsycExtra
- ProQuest: ProQuest Education Journals, ERIC (Educational Resources Information Center), International Bibliography of the Social Sciences IBSS, Educational PSYCHOLOGY, Academic OneFile, Emerald and ISI Web of Knowledge
- Google Scholar
- AIS eLibrary
- JStor
- Individual journal searches have also been consulted

3.5 Screening and appraisal of articles

Once the task of establishing the research question and eligibility criteria was completed a search strategy was laid out which specified the electronic databases to be searched and identified the search terms to be used (Abuabara, Freeman & Dellavalle 2012: 2). The Unisa search Librarian gave a comprehensive list of education databases from which the researcher identified 495 articles from the searches. Figure 3.2 gives a summary of the screening and selection process and below is a detailed explanation of the process followed in the screening and appraisal of articles:

I used the search string “Usability AND "social networks" AND e-learning” and found that the search brought back a mix of articles that had any combination of these search words and phrases. This search string was used for the reasons that:

- It excluded from the meta-synthesis those articles which discussed the usability of social networks outside e-learning.
- It also excluded articles that were not discussing higher education, for example, articles that discussed lower school and high school education and those that discussed training in the industry.
- The search string enabled the selection of only those articles with relevancy to the usability of e-learning systems specifically in online learning and ODL environments.

The process of selecting articles was a meticulous one involving careful checking of each article by first looking at the relevancy of the title, abstract and the research methodology. Hence, some articles that were potentially interesting were excluded because they used quantitative methods in their studies.

From figure 3.2 it is clear the total number of articles retrieved from the various databases as listed above was 495. The screening was then carried out to determine the research methodology used in each article. Only the articles that used qualitative research methodology were considered relevant to this study and at this stage, 465 articles were rejected from the total.

In the next stage of the process 30 articles that withstood the test of the previous stage were reviewed. These articles used qualitative research methodology according to the stipulated criteria. In this phase of the process, the abstracts from each of the 30 articles were read in order to determine if the research they reported on was on the use of social media blends in e-learning. This review process saw 19 articles that were rejected because they did not have the correct research focus, for example, some articles reported on the use of social media in high schools.

The last stage of the selection review involved a full scan of the eleven articles that met the criteria of the previous stage. The review entailed reading through each of the articles in order to determine their fit for inclusion in the meta-synthesis. See figure 3.2. The criteria described by Paterson, Thorne, Canam and Jillings (2001: 12-13) were applied.

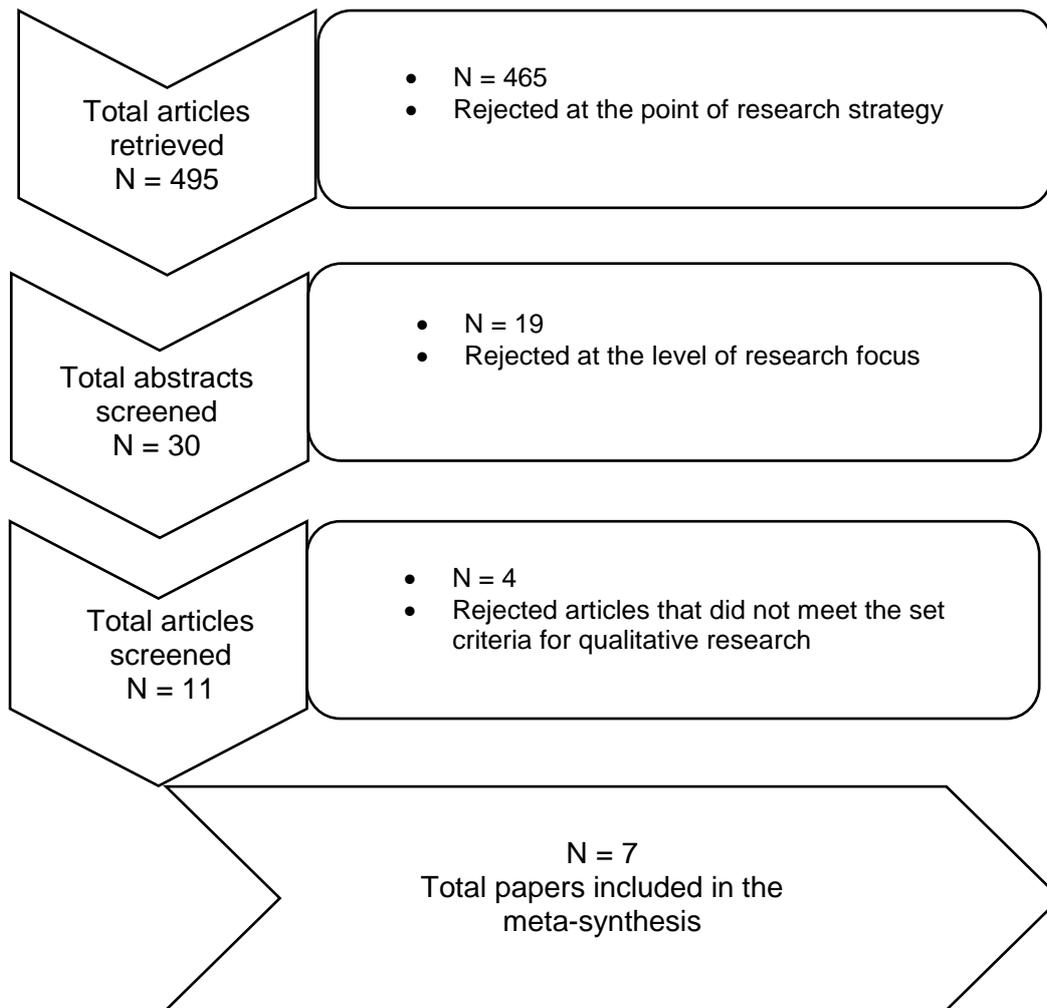


Figure 3.2: Summary of research study screening and selection process (adapted from Minnaar 2011: 487)

The inclusion and exclusion criteria as detailed in the preceding paragraphs can be summarised in the paragraphs below:

Inclusion criteria were set to contain qualitative articles on the usability of social media blends in e-learning in higher education institutions from 2000-2015. The screening included only the studies which deal with aspects of usability of social media blends in e-learning in higher education institutions. Further screening was done using the abstracts in order to determine if the research focus was only on e-learning in higher education. Electronic databases such as EBSCO, Google Scholar, ERIC and others were accessed through the help of the Unisa library services. The list of articles included in the meta-synthesis is shown in table 3.1,

hence the inclusion criteria:

- Peer-reviewed articles published between 2000 and 2015.
- Author/s clearly used a qualitative research strategy.
- Qualitative research sampling must include Higher education, online learning and social media blends in teaching and learning.
- Only primary peer-reviewed articles were included.
- Data were collected from learners, academics or from these groups' online activities.

The exclusion criteria can be summarised as follows:

- Articles published before 2000 were excluded because there were no meaningful research discussions on the use of social networks in online learning in higher education before 2000.
- Articles were not included in cases where quantitative or mixed methods research strategies were used.
- All articles whose context was not higher education and online learning were excluded.
- Literature reviews were excluded.
- Articles that did not have a clear research methodology were also excluded.
- Designs of online teaching tools were excluded.
- Books, dissertations and theses were excluded.

Table 3.1: List of articles included in the meta-synthesis

1	Chandana, R.H. & Liyanage Chamila, R.P. 2013, "Pedagogical significance of wikis: towards gaining effective learning outcomes", <i>Journal of International Education in Business</i> , vol. 6, no. 1, pp. 51-70.
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2	Chen, B., & Bryer, T. 2012. Investigating instructional strategies for using social media in formal and informal learning. <i>The International Review of Research in Open and Distributed Learning</i> , 13(1), 87-104.
3	Kenney, J., Kumar, S., & Hart, M. 2013. More than a social network: Facebook as a catalyst for an online educational community of practice. <i>International Journal of Social Media and Interactive Learning Environments</i> , 1(4), 355-369.
4	Minocha, S & Roberts, D. 2008. Social, usability, and pedagogical factors influencing students' learning experiences with wikis and blogs. <i>Pragmatics & Cognition</i> , 16(2), 272-306. doi:10.1075/p&c.16.2.05min.
5	Panckhurst, R., & Marsh, D. 2011. Using Social Networks for Pedagogical Practice in French Higher Education: Educator and Learner Perspectives. <i>RUSC. Universities and Knowledge Society Journal</i> , 8(1), 253-271.
6	Schroeder, A, Minocha, S & Schneider, C. 2010. The strengths, weaknesses, opportunities and threats of using social software in higher and further education teaching and learning. <i>Journal of Computer Assisted Learning</i> , 26(3), 159-174.
7	Veletsianos, G & Navarrete, C. 2012. Online social networks as formal learning environments: Learner experiences and activities. <i>The International Review of Research in Open and Distributed Learning</i> , 13(1), 144-166.

3.6 Rigour of the study

Each of the activities from the collection of data to the coding of the articles involved reading each article several times in various sections of the article to ensure that each article met the selection criteria. These activities were done over

a period of several months.

Table 3.2 was used to screen the peer-reviewed published articles on media blends in online learning and seven of the articles were selected to be included in the study. Most of the weaknesses in the published articles which I excluded after using table 3.2 were:

- Use of both quantitative and qualitative methodologies.
- In some cases, the methodology used for the study was not clear.
- Some papers were simple compilations of past research that included quantitative surveys, etc.
- Some research presented experimental studies which basically indicated that they were quantitative.
- Other papers were excluded for being conceptual papers based on literature and not actual research papers.
- There were papers that explored the use of social media for teaching and learning but focused on university administration.

Table 3.2: Screening Criteria (adapted from Paterson, Thorne, Canam, & Jillings 2001: 33-53)

No	Screening criteria for inclusion and exclusion	2	0	1
1	Research question stated clearly and adhered to			
2	Design clearly planned			
3	Aims of the study clearly described			
4	Sampling clearly described			
5	Data collection setting identified			
6	How were data collected?			
7	How were data recorded and ethical aspects described?			
8	Data analysis described with transferability			
9	How were themes and categories identified?			
10	Credibility (member checks, validation of data)			
11	Clear statement of findings			

12	Justification of data interpretation			
13	Clear demarcation between data and researcher's views			
14	General transferability of the research			
15	Was research useful and relevant?			
16	Will the results help?			

The preceding section gives details of how an extensive variety of electronic databases were consulted in the selection of the primary research. Qualitative papers were carefully chosen from a wide range of journals for example; Education Review, The International Journal of Interactive Multimedia and Artificial Intelligence, International Journal of Social Media and Interactive Learning Environments, Pragmatics and Cognition, Mediterranean Journal of Social Sciences, Universities and Knowledge Society Journal, and many others.

3.7 Validity of the study

In order to ensure validity in this research, the process of the meta-study was described in detail as it unfolded. The structure of a meta-study as detailed by Paterson et al. (2001) was followed. This research comes at a time when a number of distance education institutions have taken to the use of social media in their tuition systems and it is the researcher's hope that these proposed guidelines for the usability of social media blends in e-learning would be a welcome contribution.

3.7.1 Validity and trustworthiness in this qualitative synthesis

A number of research articles were carefully included in the meta-synthesis in order to deal with the credibility requirements and in order to illustrate multiple realities of the phenomenon of online learning and the usage of social media blends.

This study should be easily transferable in the sense that this study can find applicability in similar situations. Transferability of this research was ensured

through the articulation of the boundaries of the synthesis to make sure that the study does what it was intended to do, which is to identify themes in the use of social media blends in online learning and to provide standard guidelines for the use of social media in e-learning.

The researcher demonstrated confirmability by first describing the inclusion and exclusion criteria for articles included in the meta-synthesis. Second, the researcher expressed how this was done through a description of the initial number of qualitative articles accessed on social media blends in online learning and each article was screened on methodological rigour. (See Appendix C)

One researcher (other than the supervisor) who has an online learning experience with the usage of social media in higher education was involved in peer review of the data analysis to ensure credibility of the process.

3.8 Data analysis process

This research study obtained its data from different distance education and online learning institutions across the world, namely:

- An article on the pedagogical significance of wikis was from Swinburne University of Technology, Melbourne, Australia.
- The article on investigating instructional strategies for using social media in formal and informal learning was done at the University of Central Florida in the United States of America.
- The article on the use of Facebook as a catalyst for an online educational community of practice was done at the University of Florida, Gainesville in the United States of America.
- The article on the use of online social networks as formal learning environments was done at the University of Texas at Austin in the United States of America.
- The article on social, usability and pedagogical factors influencing students' learning experiences with wikis and blogs was done at the Open University, Milton Keynes, United Kingdom.

- The article on the strengths, weaknesses, opportunities and threats of using social software in higher and further education teaching and learning was done at the Open University, Milton Keynes in the United Kingdom.
- The article on the use of social networks for pedagogical practice in French higher education was done at the Paul Valéry University of Montpellier III in France.

The search for qualitative research on social media blends proved to be a challenge because of the limited number of articles that applied qualitative research correctly. There was a clear lack of qualitative study on social media blends in institutions in the African continent, which certainly poses a challenge when one is trying to establish the use of the social network for online education in the continent.

The selected articles investigated varying sample sizes in their respective studies ranging from ten masters and Ph.D. students, sixteen Ph.D. students, twenty-five masters students, eighty students, eighty-five students, to six faculty members, in some cases up to fifty-seven faculty members and twenty social software initiative projects. Table 3.3 summarises the demographic data of the study.

Table 3.3: Demographic data of the study population

Articles	1	2	3	4	5	6	7
Authors	Chandana & Liyanage Chamila (2013)	Chen & Bryer (2012)	Kenney et al. (2013)	Minocha & Roberts(2008)	Panckhurst & Marsh (2011)	Schroeder, Minocha & Schneider (2010)	Veletsianos & Navarrete (2012)
Sample	80 students, 30 student assignments, 6 academics	57 public administration faculty members	16 PhD students	70 students (wikis), 15 students (blogs)	25 master's students	20 social software initiative (projects) from UK universities	10 Masters & PhD students
Status of media blends and examples of media blends	The use of wikis	Blogs, wikis, media sharing tools, Facebook, virtual worlds	Application of Facebook	Blogs & wikis	Ning	The focus is on data from projects that use a number of social software	Elg
Country	Australia	USA	USA	UK	France	UK	USA
Sample Characteristics	International Marketing	Master's in public	PhD candidates	Postgraduate courses	Master's degree	Undergraduate & postgraduate	Masters & PhD students

	practice, Net- Gens	administration 28 USA universities			students	students	
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The researcher selected relevant information from the collected data and loaded these into a Computer-Assisted Qualitative Data Analysis (CAQDAS) application to be analysed in order to perform the analysis. The CAQDAS software package of choice was Atlas.ti which is available at the researcher's institution. A lot of these CAQDAS applications offer similar functionality, and their use is determined by researchers' personal preferences. With CAQDAS researchers can code the data for the purposes of analysis. From the coding, a researcher is able to test the relationships between issues, concepts and themes and hence cultivate higher order categories (Lewins & Silver 2007:24). Coding also enables the researcher to acquire a deep understanding of the phenomena presented by the data (Atherton & Elsmore 2007: 63). Various factors influence coding, such as the kind of data, the research aims as well as the depth of the analysis (Lewins & Silver 2008:23).

3.9 Conclusion

This chapter discussed the details of research methodology used to carry out this meta-synthesis study. The presentation started by explaining the researcher's theoretical background and then proceeded to show the relevancy of meta-synthesis in such a study. Details of the approach used to screen articles were outlined and the criteria for the inclusion and exclusion of articles were presented. An outline of the data analysis process and the profile of the data sample were described. Chapter four describes the meta-synthesis which represents the visionary and constructive outcome of the entire analysis in this study; it begins to build theoretical approaches based on combined findings from the selected articles.

4 CHAPTER FOUR: RESULTS OF THE META-SYNTHESIS ON THE USABILITY OF SOCIAL MEDIA BLENDS IN E-LEARNING

4.1 Introduction

Despite a proliferation of single qualitative studies, comparative analysis of their findings and theoretical linkage of their conclusions to other relevant research on online learning have rarely been included in explorations of the usage of social media blends in technology-enhanced learning or e-learning environments. This trend accounts for a failure to produce good practice guidelines of a framework that explains and describes relationships between research findings. This study is a mini-dissertation and aims to provide good practice guidelines for using social media blends in online learning.

This mini-dissertation research on a meta-synthesis on the usability of social media blends in e-learning consists of a *meta-study* which refers to investigations of the results and processes of previous research (henceforth termed *primary research*). In effect, meta-study is “the research of research.” It entails *analysis*, the scrutiny of the theory, method, and data analysis of research in online learning and culminates in *synthesis*, an application of that scrutiny to the generation of new knowledge on how to incorporate social media blend into online or e-learning in higher education. It represents an attempt not only to analyse primary research results but also to reflect on the perspectives and processes involved in those primary studies in terms of “where we are and where we are going towards digital connectivity and interaction in higher education.” The processes of this meta-study are interpretive by nature and include both analysis and synthesis. This meta-study consists of four distinctive parts namely, the meta–method, meta-data-analysis, meta-theory and lastly the meta-synthesis which synthesises the findings to create a framework for good practices on using social media blends in e-learning.

4.2 Rigour in this meta-synthesis

As with primary qualitative research, a meta-study must attend to the principles of rigour so that the findings of the meta-synthesis and the good practice guidelines are

credible and true. I have ensured rigour in this study by firstly, documenting how I selected the research articles and how I screened them for inclusion or exclusion into the research study. Furthermore, in this project I have followed specific means to achieve trustworthiness by reviewing each article at least three times. My supervisor also revised the review several times and we had e-mail discussions regarding the codes and quotations I used in the review. Furthermore, I consulted and shared the article reviews with peers and a colleague specialising in technology-enhanced learning at an open and distance learning (ODL) institution. This colleague will hence be referred to as the *ODL consultant*.

During the phase of the meta-data-analysis, I read through the articles one by one and noted the possible themes as I progressed using a highlighter on hard copies of the articles. I read through each article, at least, three times and then I loaded the articles into the Atlas.ti computer programme to assist with data organisation and data analysis. I loaded the codes into Atlas.ti which I found applicability and marked the hard copies of the articles. Then I started to analyse the data using Atlas.ti. I also checked the codes continuously against the theoretical framework of online collaborative learning which guided the study.

Moreover, my supervisor was involved in this data analysis process and assisted me in identifying differences and helped me to arrive at decisions. The theoretical framework guided both of us in this regard to check for deductive and inductive themes emerging from the data. We have ensured that the data from the primary research articles were presented in such a way that the authors of the articles would recognise the conclusions as compatible with their descriptions and interpretations of the phenomenon of social media blends in online and e-learning. The ODL consultant also checks the data analysis process independently and makes recommendations towards an agreement between myself, the supervisor and the ODL consultant.

Consistency, in this meta-synthesis on social media blends in e-learning, ensured by the audit trail in this mini-dissertation, the reader can follow and make sense of every

decision I made during the meta-synthesis as can be seen in Figures 3.1, 4.1, 4.2, 4.3, 4.4 and in tables 3.1, 4.1, 4.2 and 4.3.

4.3 The Meta-method

The procedure for the analysis of a meta-study is a process involving three parts, i.e. meta-method, metatheory and metadata analysis (Fink 2005: 136-141). The selected articles were evaluated according to demographic aspects as displayed in Table 4.1 sample, social media blends, country and characteristics.

Table 4.1: Demographic data of the study population

	Sample	Social networks	Country	Characteristics
Chandana & Liyanage Chamila (2013)	80 students, 30 student assignments, 6 academics	wikis	Australia	International Marketing practice, Net-Gens
Chen & Bryer (2012)	57 public administration faculty members	Facebook Blogs & wikis	USA	Master's in public administration 28 USA universities
Kenney et al. (2013)	16 PhD students	Facebook	USA	PhD candidates
Minoch & Roberts (2008)	70 students (wikis), 15 students (blogs)	Blogs & wikis	UK	Postgraduate courses
Panckhurst & Marsh (2011)	25 Masters' students	Ning	France	Masters' degree students
Schroeder, Minoch & Schneider (2010)	20 social software initiative (projects) from UK universities	Facebook Blogs & wikis	UK	Undergraduate & postgraduate students
Veletsianos & Navarrete (2012)	10 Masters' & PhD students	Elgg	USA	Masters & PhD

Each of the articles was analysed in order to determine how the authors methodologically presented aspects such as aim and purpose of the studies, the research questions, trends in social media usage, research design, data collection and data analysis and the trustworthiness of the studies. Tables 4.1 and 4.2 show the findings of the meta-method.

The *sample* criterion in table 4.1 provides information about the original sample which was used in the primary research. Knowing the sample and its size helps in

determining the relevancy of each research and the results obtained from the research. The *social networks* criterion gives information about which specific social media were used in the original research. Knowing this also helps in determining the relevance of the research to social media blends. The *country* criterion is a simple reflection of the places where the research was conducted. The *characteristic* criterion provides information about the features or qualities belonging typically to the sample under study.

Table 4.2: Summary of methodological aspects investigated (Adapted from Paterson, et al. (2001:21-26))

	Chandana & Liyanage Chamila (2013)	Chen & Bryer (2012)	Kenney et al. (2013)	Minoch & Roberts(2008)	Panckhurst & Marsh (2011)	Schroeder, Minoch & Schneider (2010)	Veletsianos & Navarrete (2012)
Clear research questions	Yes: One question	Yes: Three questions	Yes: One question	Yes: Three questions	Yes: Three questions	Not stated	Yes: Two questions
Study aims clear	Yes: To explore the effectiveness and pedagogical implications of integrating wikis into the curriculum	Yes: To investigate pedagogical aspects of using social media to connect formal and informal learning and allow students to connect in new and meaningful ways	Yes: To demonstrate that Facebook can be used as a means for building an online community of practice for students	Yes: To empirically investigate the role of wikis and blogs in teaching and learning	Yes: To explore and evaluate the relative advantages and challenges in using social networks in e-learning	Yes: To explore the associated benefits of introducing social software into a course environment	Yes: To identify, describe, and understand learners' experiences in an online course facilitated through a social networking platform
Research design	Exploratory qualitative	Exploratory qualitative	Exploratory qualitative	Case study	Case study	Exploratory qualitative	Exploratory qualitative
How data were collected	Content of student-generated wikis and the written text of student assignments	Interviews	Focus groups	Content of student-generated wikis and emails	Content of student-generated material on Ning	Interviews	Interviews
How data were analysed	NVivo data analysis	Thematic analysis and comparative coding	Content analysis	Inductive analysis	Content analysis	Thematic SWOT analysis	Constant comparative method
Data description and rigour	A line-by-line analysis or microanalysis was performed on the content	Full analysis by one coder followed by re-coding by the second coder	Independent coding was followed by comparison of codes	Dual-coding by the two independent coders	Comparison of codes	Independent analysis was followed by joint analysis	Independent analysis was followed by joint analysis

4.4 The Metadata analysis

In conducting metadata analysis, the researcher meticulously analysed the underlying assumptions of different data analyses in each article. The researcher also compared the quality aspects of the various forms of data, and how the findings were synthesised in all the studies included. Table 4.3 presents a summary of the metadata analyses of articles.

The majority of the articles in Table 4.3, i.e. Chandana and Liyanage Chamila (2013), Chen & Bryer (2012), Kenney et al. (2013), Minoch and Roberts (2008), Veletsianos and Navarrete (2012) evidently meet the terms of qualitative research guidelines. However, the study by Panckhurst and Marsh (2011) was weak in clarifying the analysis and validation of the analysis, while the study by Schroeder, Minoch and Schneider (2010) was weak in methodology quality of qualitative research.

For example, Panckhurst and Marsh (2011) did not show how the analysis was done but point out:

“Analyses of the three case studies conducted in 2007-2008 strongly suggested that social networks, which sit outside the more formal institutional-based Virtual Learning Environments (VLEs) or Learning Management Systems (LMSs), can benefit individual and collaborative learning,” (p. 257).

The analysis of data was done with Atlas.ti to identify main themes as guided by the key concepts of OCL theory. I then deeply engaged myself in the data by studying and reading each of the articles several times and some valuable concepts began to emerge as discussed in the following sections.

Table 4.3: Metadata analysis: Rigour of the primary qualitative articles used in the meta-synthesis (Adapted from Major & Salvin-Baden (2010:43-112), Minnaar 2011:493)

	Chandana & Liyanage Chamila (2013)	Chen & Bryer (2012)	Kenney et al. (2013)	Minoch & Roberts (2008)	Panckhurst & Marsh (2011)	Schroeder, Minoch & Schneider (2010)	Veletsianos & Navarrete (2012)
Findings clearly stated? Yes/No	Yes	Yes	Yes	Yes	No	Yes	Yes
Are the interpretations justified? Yes/No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Are data & findings linked? Yes/No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
How useful are the results? High/Med/Low	High	High	High	High	High	High	High
Transferability Yes/No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Relevance to OCL and e-learning High/Med/Low	High	High	High	High	High	High	High
Are the results important? Yes/No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Values	Collaborative learning, organic discussions and independent thinking	Learner-centred informal learning through social networks	Learner-centred social network as a tool for a community of practice	Learning outcomes must be linked to collaborative activities, clear role of	e-learning pedagogy	Balancing the possible benefits and potential risks in the adoption of social networks	Interaction, collaboration, participation

				technology		in e-learning	
Preference of researcher clearly delineated Yes/No	Yes	Yes	Yes	Yes	Yes	Yes	Yes

4.5 Concepts that emerged during meta-analysis

Through a detailed line by line, meta-analysis study using Atlas.ti software on each of the articles included in the meta-study, interesting themes on collaborative learning emerged including issues related to social media in e-learning. The following distinct concepts have emerged:

1. Community of practice
2. Knowledge sharing, idea generation or creation
3. Peer support
4. Convergence of ideas
5. Construction of new knowledge
6. Social media issues

1 Community of practice – CoP: all the articles included in the meta-study showed the community of practice (CoP) as an important pedagogical aspect of social media e.g.

Quotation 1: “This research demonstrates that it is possible to use Facebook as a student-developed CoP to facilitate collaboration and community-building among students in support of their learning.” (Kenney et al. 2013:366)

Quotation 2: “For the past few weeks, our group has contributed different thoughts on such issues in the online wiki page. Through the collective discussion, members of the group will be able to gain specific insights and understand how business theory can be applied to [in] practice (An excerpt from the critical incident report/student no. 23/wiki 3).” (Chandana & Liyanage Chamila 2013:60).

2 Knowledge sharing, idea generation or creation: there was also a clear agreement among the studied articles that the use of social media led to peer knowledge generation or creation of ideas among the students as a community without including instructors. These interactions resulted in free sharing of experiences related to their studies, but also some personal experiences, e.g.

Quotation 3: “Members of this Facebook group shared their individual knowledge with peers, leading to shared knowledge, distributed cognition, changes in perceptions, and a feeling of community. This student created CoP became an often-used method for previously isolated cohort members to come together as a community as their interactions fell into three themes: knowledge sharing, support, and problem-solving. These three types of interaction help members

communicate and work through issues directly tied to their courses, their research, work or practice, and personal issues.” (Kenney et al. 2013:366).

3 Peer support: the analysed research papers show that students felt safe to share ways of dealing with study-related pressure thereby providing for each other what can be called peer support e.g.

Quotation 4: “The post “Anyone else feeling overwhelmed tonight” (Student #1) garnered four responses and three likes. One student responded with their own coping mechanism “I ate a big piece of cookie cake and grabbed a glass of wine” (Student #7) while another admitted similar feelings “I just don't know how I will get all this done” (Student #9). These interactions demonstrate that a successful community was formed as individuals felt safe to publicly admit their feelings and seek mutual support.” (Kenney et al. 2013:365).

Quotation 5: “Learners supported one another in their learning and noted that they perceived their learning experience was enhanced by their interactions.” (Veletsianos & Navarrete 2012:9).

Quotation 6: This group of students said that not only were the comments useful for aiding their own understanding, they were also an important source of both academic and emotional support:

“... It helped me feel as if I wasn't struggling on my own, made me feel more connected.” (Minoch & Roberts 2008:299).

4 Convergence of ideas: it was clear from the articles that the pedagogy of the social networks allowed the organisation of ideas through agreements and disagreements that eventually converged into learned concepts. Some of the quotes from articles are shown here to illustrate this point:

Quotation 7: It was also clear from the data that wikis provide an opportunity for students to weigh the pros and cons of an argument and develop their own opinion. For example, another student claimed:

“(What the author [the student] appreciated the most is perhaps the constructive argument he found on the Wiki page. For instance, while some of the contributors advocated that the Euro zone financial crisis would badly hit the economy of China, others claimed that it might not be the case, as the decrease in exports was offset by increased domestic consumption and sales in other emerging economies (An excerpt from the critical incident report/student no.18/wiki 1)).” (Chandana & Liyanage Chamila 2013:61).

5 Construction of new knowledge: there is evidence from the analysed articles that discussion on social media led to the synthesis of new knowledge e.g.

Quotation 8: “One of the key implications of the study is that, in addition to

collaborative learning, the “organic discussions” that emerged in the wikis fostered constructive knowledge. Through collaboration, the students appeared to reach an advanced level of learning and thinking. They were able to construct new knowledge which none of them had when they first engaged in wiki discussions. In a conventional and structured classroom setting with the close supervision of a teacher, these “organic discussions” may not have emerged due to several reasons (e.g. limited time inhibiting reflective thinking, lack of opportunities to express one’s opinion, anxiety over expressing independent views in front of an audience).” (Chandana & Liyanage Chamila 2013:65).

6 Social media Issues: the use of social media in online learning is not without issues and the main issues that were identified in the selected articles are:

Managing communication threads: Some students found it challenging to manage a lot of information that is communicated on the social networks, for example going through several threads of conversations to follow the discussions especially if they were not online during the chat sessions e.g.

Quotation 9: “Some learners lacked this ability. Unfamiliarity with ways to manage their own learning points to a need for teaching network learning skills, such as the ability to find and categorize content for future retrieval and traverse networks of interest (Jenkins et al., 2006). Such skills are also transferable to learners’ lives outside of formal education as they enable individuals to utilize online social networks to manage and further their lifelong learning.” (Veletsianos & Navarrete 2012:10).

“As the students worked through the assigned readings and activities, managing and organizing information proved to be a challenge.” Betty stated that:

“Reading all of my classmates’ blogs and comments, commenting on the blogs and/or comments, reading the material for the course, trying to find and read any supplementary material, and then composing a blog is taking significantly more [time than] the course is supposed to take. I am taking two other courses, and I find that I do not have enough time to devote to all of my classes”.

Quotation 10: “Numerous other students shared this feeling. Our interviews revealed that students either used technology tools to manage what they perceived to be “abundance of information,” or devised personal strategies for information management.” (Veletsianos & Navarrete 2012:9).

Privacy and security: Some of the articles raised security and privacy issues which could be related to national policies in the respective countries. Quotes below from some of the articles illustrate the point:

Quotation 11: “The top-rated concerns are cybersecurity and privacy issues. Faculty were concerned about their professional identity. Two participants

mentioned RateMyProfessor.com in the interviews and feared that their presence on the Web might damage their professional reputation. The Internet is such an open environment that nobody can control what others might post. Besides, participants were also concerned about students posting inappropriate content online that might pose a danger to their own future career development. One respondent observed that “students do not perceive these as learning tools, therefore, they do not approach them or use them in a way that will facilitate learning. The tools themselves may be more identified with personal entertainment or interaction and thus not be used appropriately for learning.” (Chen & Bryer 2012:6).

Quotation 12: “Particular attention needs to put on the legal considerations which are associated with the use of social software in the public domain: interacting with students in the public domain raises data protection and privacy concerns because it is the responsibility of the institutions to protect student data; using the public tools in student assessment creates a range of potential legal implications when the tools prove to be unreliable; and the use of teaching materials in the public domain is likely to create copyright implications.” (Schroeder, Minoch & Schneider 2010:168).

Quotation 13: “Other issues from an educator’s perspective have included the need for students to have developed skills in selecting appropriate material to include in their blog; the problem of plagiarising from others’ blogs (Oravec 2003); and their ability to manage the tension caused by publishing private thoughts in a public space (Mortensen and Walker 2002).” (Minoch & Roberts 2008:289).

Plagiarism: some articles established that some students found it easy to copy and paste material from Web pages into the discussion forums without referencing the sources and without analysing the concepts, hence bypassing the learning process:

Quotation 14: “Since wikis are online activities, students found it easy to read other online materials and directly quote them without giving due credit to the original authors. Not only is this highly non-academic behaviour but also I had to spend extra time to trace it down. I should have done more productive interventions than that (An excerpt from an in-depth interview/tutor 2).” (Chandana & Liyanage Chamila 2013:65).

Figures 4.1 to 4.4 give graphic illustrations of some of the network diagrams generated from Atlas.ti coding. The diagrams are presented to give evidence of data coding that was carried out in this analysis.

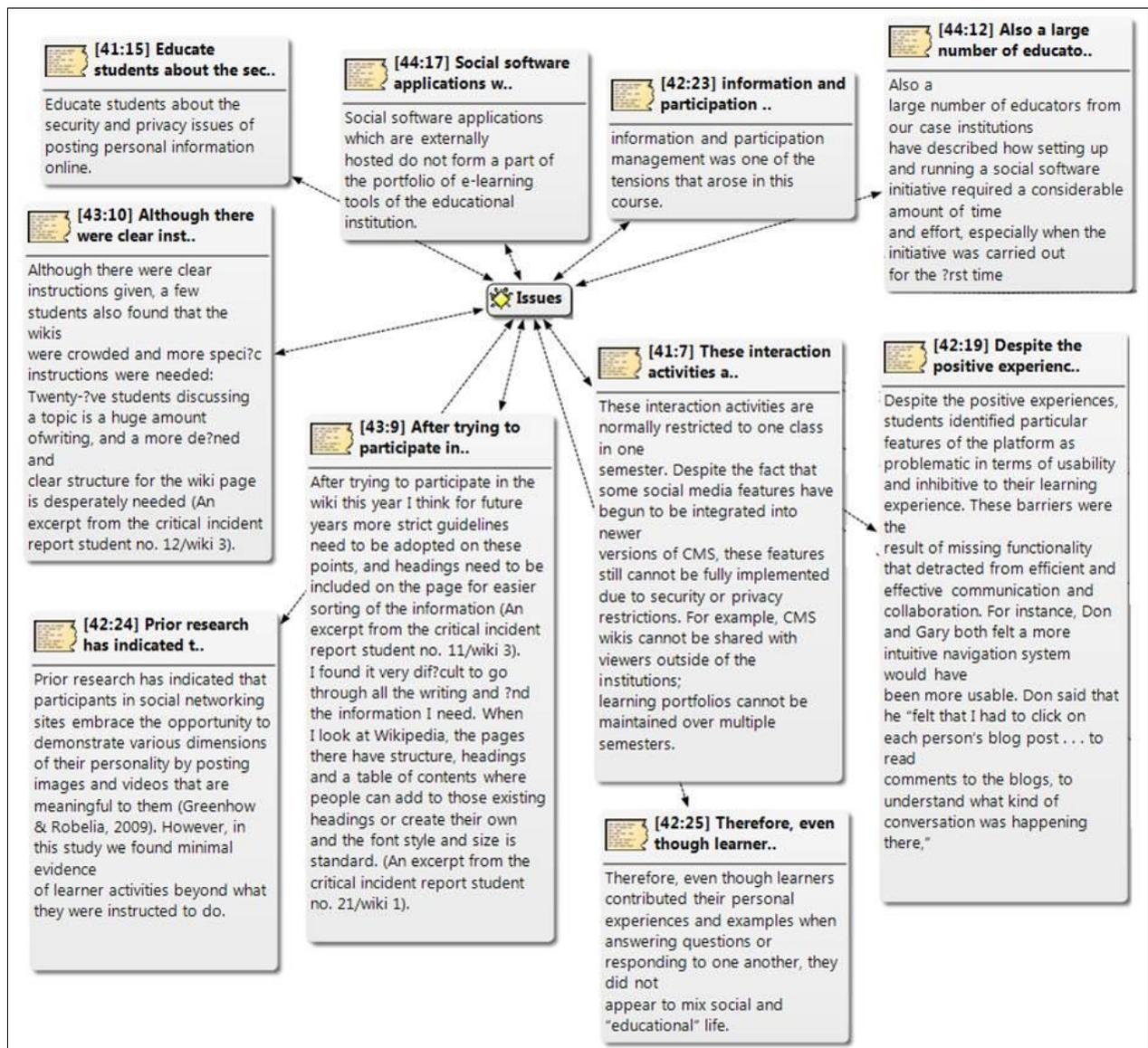


Figure 4.1: Issues in implementing social media (Data from Atlas.ti data analysis programme)

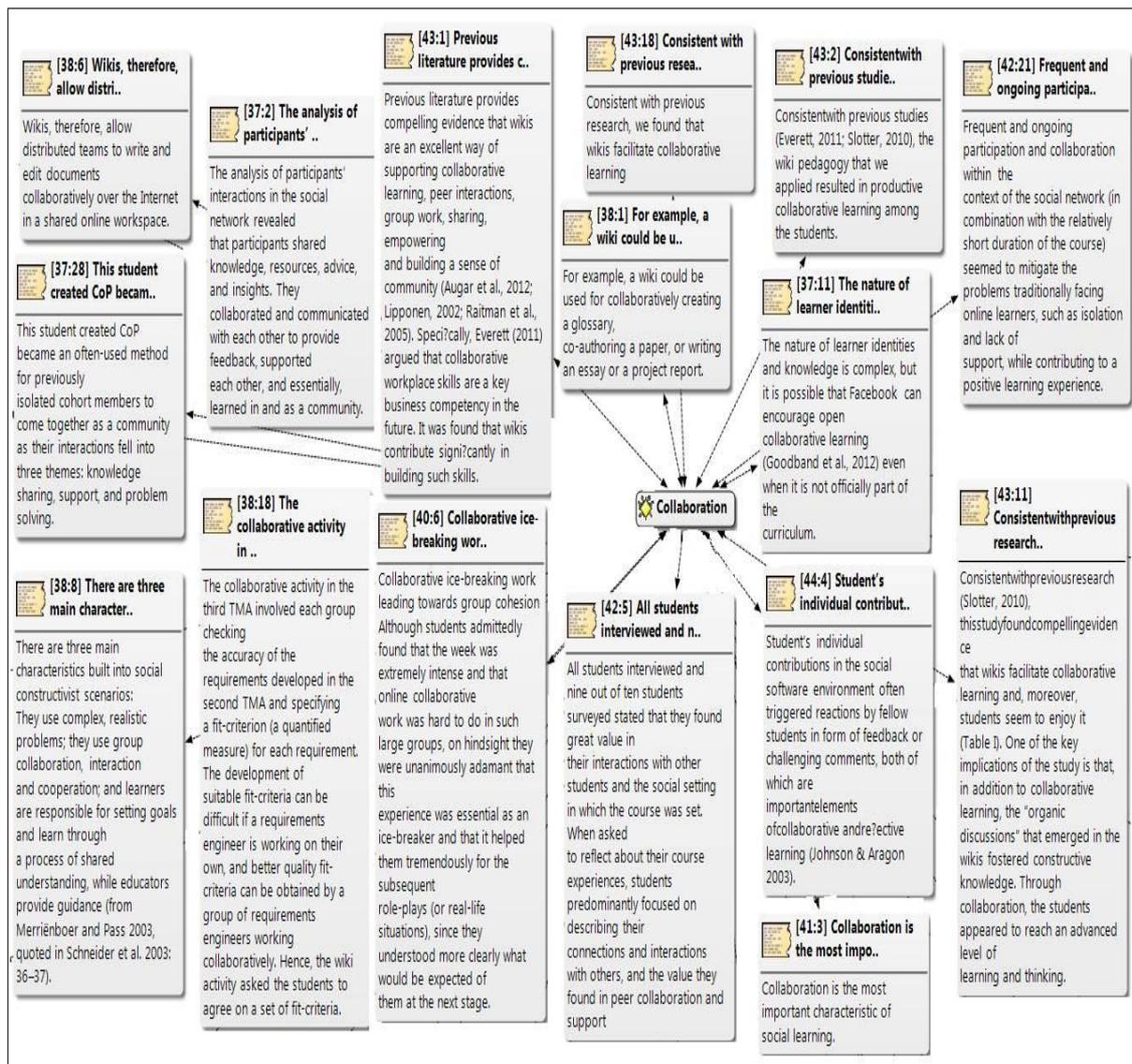


Figure 4.2: Network view of online collaboration quotations (Data from Atlas.ti data analysis programme)

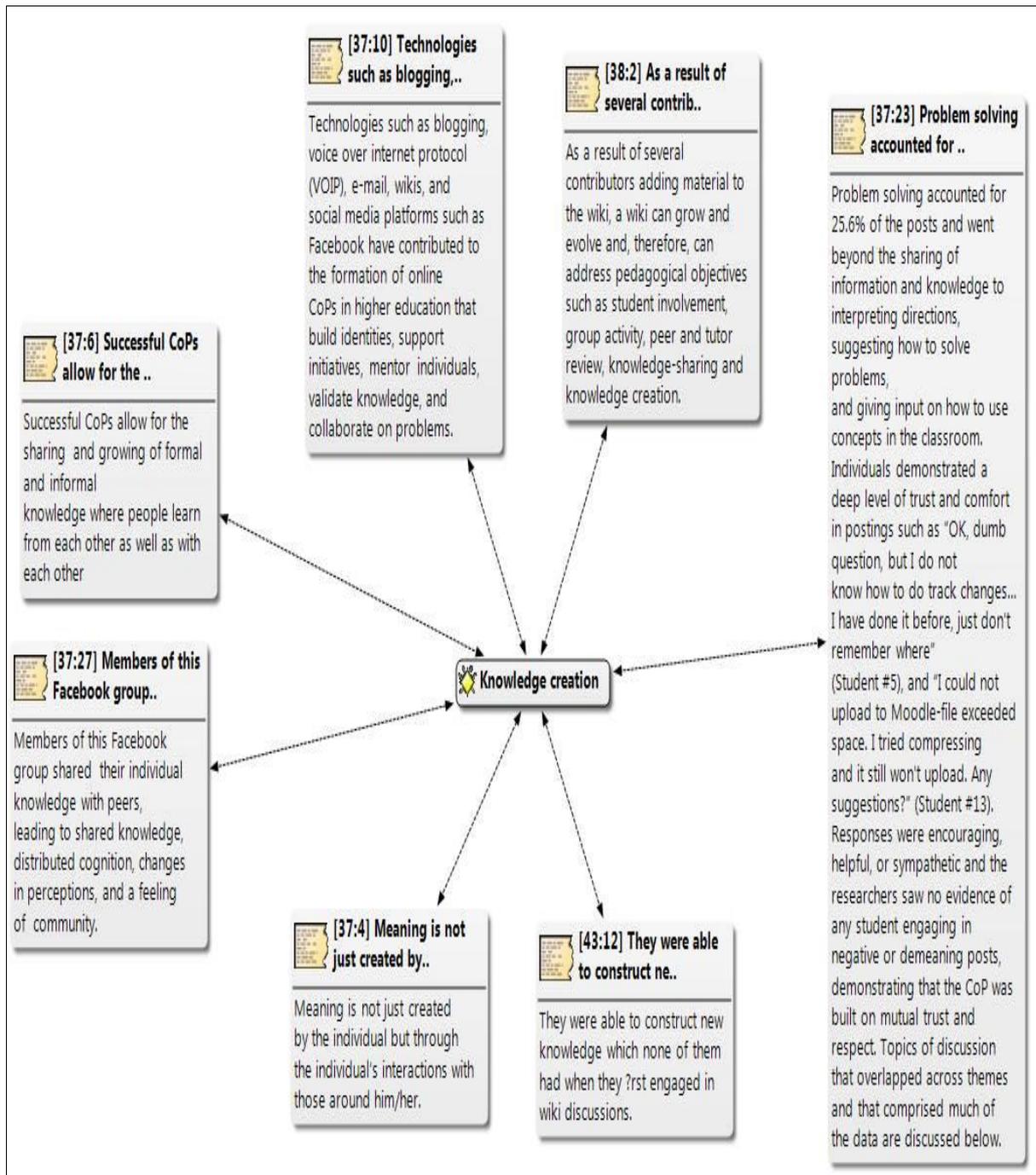


Figure 4.3: Sample quotations on knowledge creation (Data from Atlas.ti data analysis programme)

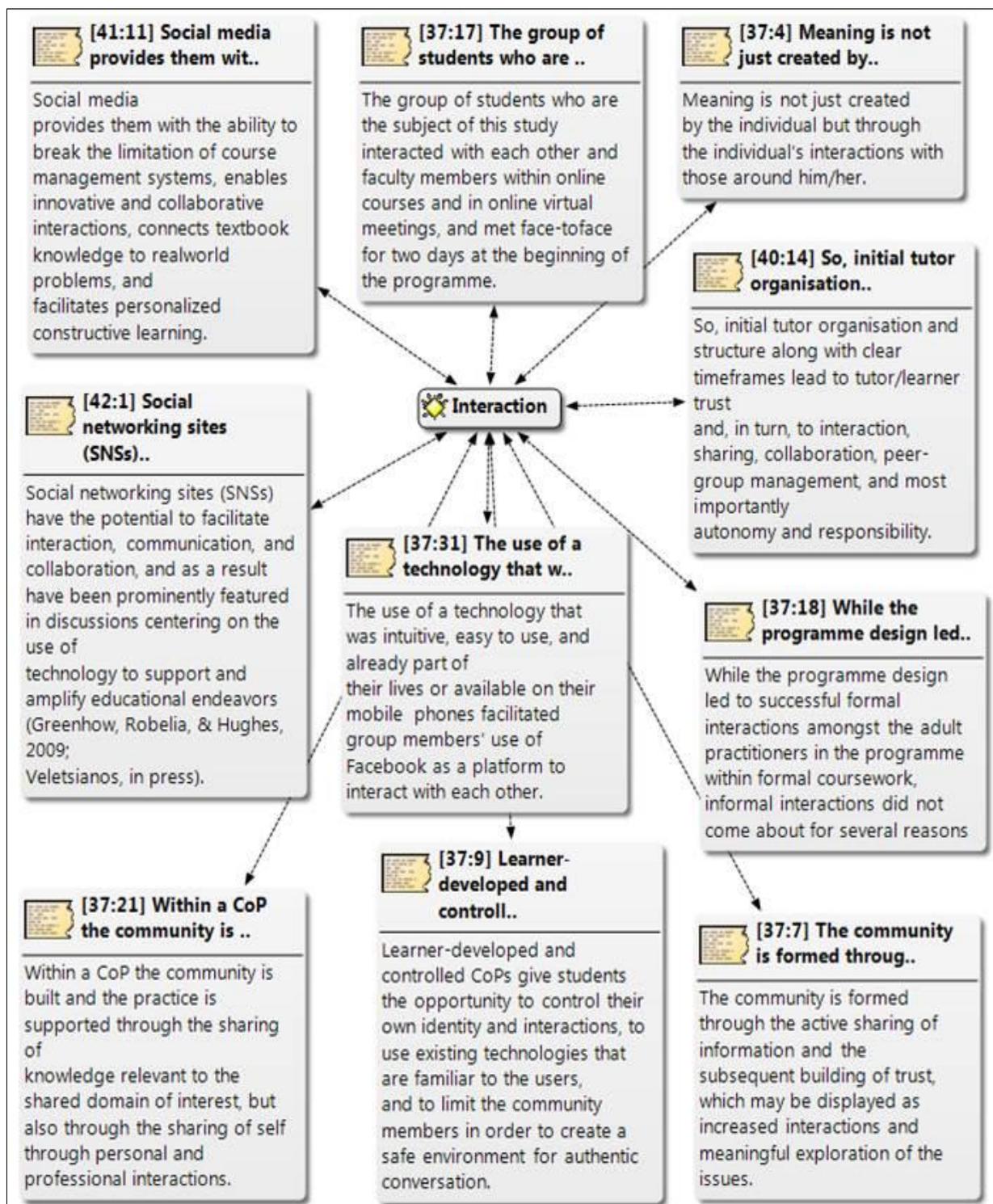


Figure 4.4: Sample quotations on interactions on social media (Data from Atlas.ti data analysis programme)

In order to understand how each of the researchers of the data used in the meta-study arrived at their results, the next section presents the theoretical frameworks that guided their research.

4.6 The Meta-theory

Meta-theory according to Paterson et al. (2001: 92) is used as a systematic way of understanding and evaluating the specific theory that drives and arises from qualitative research and hence focusing the researcher's attention on the theoretical practices and analytic frameworks that form the basis of the research. Meta-theory is, therefore, a critical assessment of the theoretical frameworks or lenses which mapped the direction to the research and to the researchers, as well as the theory arising from the research in a given study (Neufeld, 1994). The metatheory aspect of this research involved the analysis of a detailed study of research work on social media blends and the study of research on relevant e-learning theories. The major paradigms underlying the theoretical frameworks that were investigated included social learning theory, social interactivity theory, constructionism and social constructivism, and online collaborative learning theory (Ariel & Avidar 2015, Karahan & Roehrig 2014, Nandi et al. 2015, Zheng, Niiya & Warschauer 2015, Harasim 2012: 92).

The article by Chandana and Liyanage Chamila (2013: 51-70) explores the efficacy and pedagogical impacts of integrating wikis into the curriculum and the consequent learning outcomes of a group of Net-Gens enrolled in an International Marketing course. The research uses collaborative learning as the fundamental theoretical framework and confirms that Wikis promote organic discussions and independent thinking. The findings imply the possibility of a wiki-based pedagogy which could assume an emancipatory and partially-constructivist learning paradigm, in which the educators assume a less conventional teaching-centred learning environment. The derived value in the article is that a well thought-out alignment between the wiki assessments and other learning activities could potentially engage Net-Gens (Chandana & Liyanage Chamila 2013:51).

Chen and Bryer (2012:1-10) investigated instructional strategies on how social media can be used in formal and informal learning. The research provided qualitative empirical support for social learning theories. The conceptual framework was therefore based on social learning theories. The analysis of the qualitative data revealed that while learner-centred informal learning through social networks is possible and desirable, there is a need for capacity building and training for

academics, in order to empower them with an understanding of the theory behind social learning.

Kenney et al. (2013:355-369) present a study on the use of Facebook as an educational community of practice. The research was focused on online doctoral students who collaborated and communicated within a community on the social network thereby providing valuable feedback which was analysed following a social constructivist learning conceptual framework. The value implied by this research is that learner-centred social network such as Facebook can be used as a tool for a community of practice.

Minoch and Roberts (2008:272-306) adopt the constructivist learning theory especially the socio-constructivist pedagogical model as the basis for their conceptual framework to study the social, usability, and pedagogical factors that influence the learning experiences of students when using wikis and blogs. Their findings emphasise the value of linking learning outcomes to collaborative activities and clarifying the role played by technology in teaching and learning.

The article by Panckhurst and Marsh (2011:253-271) presents a qualitative study on how social networks can be effectively used for pedagogical practice in French higher education. In this study, a collaborative learning and communities of practice conceptual framework was assumed. The findings indicate that e-learning networks could be used effectively if care is taken to plan tutoring activities and student group ice-breaking activities followed by social learning objects as part of engaging projects. E-learning pedagogy is, therefore, paramount according to this study.

Schroeder, Minoch and Schneider (2010:159-174) adopt a SWOT (strengths, weaknesses, opportunities and threats) framework which is a framework widely used in organisations for the systematic evaluation of strengths, weaknesses, opportunities and threats as their conceptual framework to qualitatively evaluate the strategic implications and potential solutions of adopting social media in higher education. Their findings emphasise the value of balancing the possible benefits and potential risks in the adoption of social networks in e-learning.

Veletsianos and Navarrete (2012:1-10) assumed an interpretive research paradigm within which they used case studies to investigate the perspectives and experiences

of learners in an online course that was presented using Elgg; an online social network. The results were analysed using grounded theory analysis and validated using several triangulation methods and independent coding by the researchers followed by comparisons of the codes. Their findings emphasise the value of social interaction, together with significant knowledge building as major elements in the course.

4.7 The Meta-synthesis

Each of the three analytic steps of the meta-study, namely the meta-method, meta-data-analysis and meta-theory provided a unique angle for the phenomenon of the usage of social media blends in e-learning. The larger intent of the meta-synthesis is not to raise questions of highlighted issues, but to build frameworks or to provide good practice guidelines for practice. The appeal for meta-synthesis lies in our hunger for more truth, more accurate and real explanations and practice guidelines to make sense of our everyday practices and in this case, the usage of social media in e-learning. When insights from the meta-method, meta-theory and meta-data-analysis are combined, more questions were encountered on the usage of social media in e-learning.

In contrast, with the above, meta-synthesis capitalises on the diversity of context, method and theoretical orientation to provide for a richer and deeper understanding of the phenomenon. This layering of aspects and concepts in this study assisted me to make more theoretical interpretations and thus to come closer and closer to the real essence of social media blends in e-learning. (Paterson et al. 2001: 111).

The meta-data-analysis revealed that at a global level a lot is happening in trying to harness the abundance of social media blends for online education. As shown in table 3.2 pure qualitative research on the use of social media in e-learning is mainly found in the USA (three articles), followed by UK (two articles) then one from France and another from Australia. The articles from African research were mainly quantitative and mixed methods hence they were left out of this study, for example, South African (Naidoo 2012: 127-149, De Villiers & Pretorius 2013: 58-72, Lwoga

2012: 90-107) and Nigerian studies (Awodele, Idowu, Anjorin, Adedire & Akpore 2009: 269-83).

The major themes that emerged from this study show that: communities of practice, knowledge sharing, idea generation/creation, peer support, the convergence of ideas, and construction of new knowledge are important concepts that define how social networks play a role in e-learning. This metasynthesis showed clearly that for e-learning with social media blends to be successful, all teaching and learning efforts must be anchored in student support.

Another aspect of e-learning that also came out clearly was that there are still a number of social media issues that could negatively affect learning that range from support to general management of the information posted on social media. The use of social media blends can, therefore, be represented as a diagram of these concepts as shown in figure 4.5 to provide a good practice guideline for the use of social media blends in e-learning.

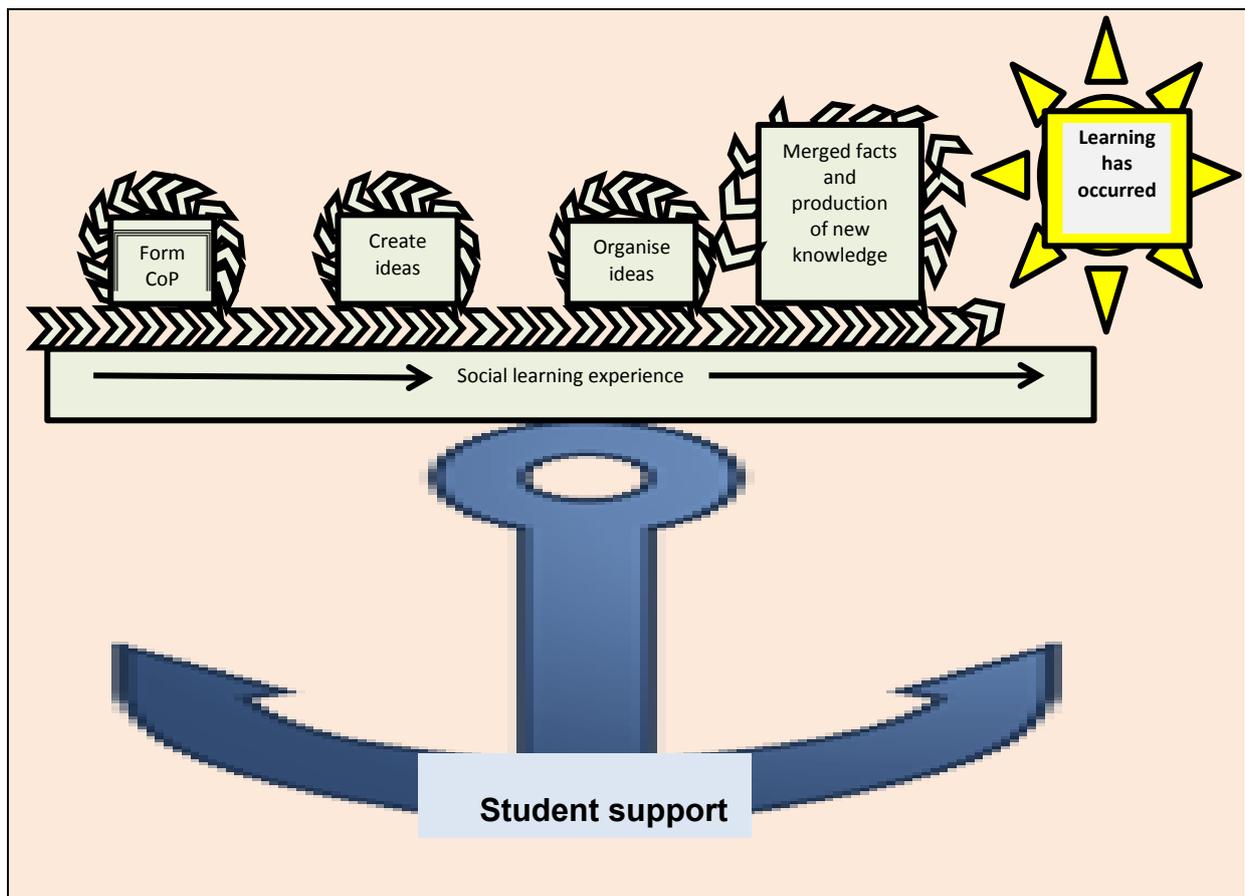


Figure 4.5: Good practice guideline for e-learning using social media blends

During the first stage of learning the students in a module come together on social media and form a community of practice (Cop). They start communicating and activities such as ice-breakers help to set the stage for interaction (Panckhurst & Marsh 2011:259). Once the students are in communication they engage in the study and start discussing tuition material as guided by the instructions from the facilitator and new ideas and knowledge are created. The researcher observed as shown in Harasim (2012: 93) that as the ideas flow there is an organisation of these ideas into knowledge as students agree on certain facts and disagree on others. As the ideas are organised into knowledge convergence results in agreed facts emerging as new knowledge that has been produced.

Going back to the main aim of this study i.e. the usability of social media blends in e-learning it is clear that while these social networking tools have certainly made their impact on e-learning, there is still much to learn from the issues that cloud the effective use of these tools. While the selected articles (Chandana & Liyanage Chamila 2013: 51-70, Chen & Bryer 2012: 87-104, Kenney et al. 2013: 355-369, Minoch & Roberts 2008: 272-306, Schroeder, Minoch & Schneider 2010: 159-174, Panckhurst & Marsh 2011:251-271, Veletsianos & Navarrete 2012: 144-166) are generally in agreement on the flow of processes for social network learning, they also emphasise the importance of support at the various stages of learning. It is an important curriculum design aspect of social media to ensure that students start with ice-breaker activities in each module. Students also need to know that as ideas flow in there may be agreements and disagreements which are all part of learning and that the ideas that survive the diverse ideas and schools of thought are the best to form part of what has been learnt. Another stage where support is important for the design of the course would be ensuring that students are aware of the complexities of managing the vast number of communication threads that will emerge from the discussions because failure to manage them can seriously have negative effects on their learning in the given course. As part of the curriculum design, it is important not to ignore the issues of privacy and security as students may tend to drop their guards on social media forgetting that social media is generally open to anyone, even people outside the courses.

4.8 Conclusion

This chapter presented the results of the meta-synthesis on the usability of social media blends in e-learning. The chapter started by clearly articulating the principles of rigour by explaining and illustrating how research articles were selected and screened for inclusion or exclusion from the research study. The procedure for the analysis of the meta-study was fully explained. Meta-study was explained as a representation of an attempt to not only analyse primary research results but also to reflect on the perspectives and processes involved in those primary studies. After a detailed meta-analysis some emerging trends were identified from the selected articles followed by an establishment of a metatheory and meta-synthesis. The next chapter wraps up this study by discussing the conclusions and recommendations of the research.

5 CHAPTER FIVE: DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS FOR THE STUDY

5.1 Introduction

Studying research publications on social media blends in e-learning presents a lot of interesting things such as the kind of research done, on whom the research is done, in which parts of the world and the characteristics of the samples used in the study. A big picture view of all this reveals an emerging movement towards social media taking a centre stage in e-learning. If social media blends take a centre stage in e-learning more work would need to be done in establishing clear pedagogical theories for social media. This chapter wraps up this research study and recommends the way forward based on the findings.

5.2 Discussion

This research was very enlightening in terms of what meta-study entails. I started off with very little understanding of what meta-study means; to be more specific I only had an average knowledge of systematic literature review which I assumed was synonymous to meta-study. Some of the important insights from this study are:

- Some articles are published in good journals despite the fact that they may not have clarified the methodology of the study, have no clear research question or objective, and sometimes poorly analyse the results. Such articles were not included in this meta-study.
- Pure qualitative research on social media blends is still limited as shown by the number of articles identified especially seeing that the researcher failed to get such articles for African studies.
- There is, therefore, a possible gap in knowledge that could be uncovered by detailed pure qualitative research on the use of social networks in e-learning in Africa.

This still remains a fact: “While the potential of social networking sites to contribute to educational endeavours is highlighted by researchers and practitioners alike, empirical evidence on the use of such sites for formal online learning is scant” (Veletsianos & Navarrete 2012: 144.) which means that we should expect

understanding and knowledge to keep increasing as more and more empirical evidence on the use of social media blends is published.

In as much as social media has significantly reduced the gap between learners and their peers and learners and their teachers we should not forget that there are still important things that students miss in e-learning that is found in face-to-face learning (Stodel, Thompson & MacDonald (2006: the Internet) such as the assurance that the student is not alone because they can physically see the other students in class.

Whilst there may be clear signs of positivity that these 'new' social networking tools will enable more personal learning environments, participatory, and collaborative learning spaces; it is also clear that in order for these goals to be realised, we have to consider careful planning, understanding of the dynamics of these social software tools, the limitations of the medium, and the value of risk management (McLoughlin, C & Lee, MJ. 2007).

5.3 Recommendations

What a theoretical journey! This meta-study was an exploratory journey that was filled with unprecedented adventure. I could not have imagined where this journey was going to take me, starting from a naïve but enthusiastic background. Despite having made important findings of the issues surrounding support in social media blends, and learning important skills in the meta-study process, I have found that a good practice guideline for the usage of social media blends in e-learning would be a buy-in into online collaborative learning model as described in this dissertation.

Secondly, students must form collaborative online groups to facilitate communities of practice, where they could refine ideas and discuss learning issues and support each other. Thirdly, students must get opportunities to co-create knowledge in learning online and be able to use technology such as Wikis to connect and co-create knowledge. Fourthly, teaching facilitators must support students in scaffolding knowledge ideas and organise it into knowledge. This could happen in an asynchronised or synchronise manner where students work on their own or together with the facilitator or in groups in real time.

Recommendations for further research would be to refine this model and test it in e-learning setting. The purpose of the research would be to explore student support in e-learning with social media blends. Further research to refine this good practice guideline which anchored e-learning with social media blends in student support could change the way we teach in ODL.

Lastly, I recommend that facilitators of e-learning take note of the good practice guideline to improve students success and throughput in ODL. It is recommended that facilitators must be trained in using this model to ensure that students receive teaching and learning experiences which they deserve and pay for in e-learning.

It is my hope that this body of critical interpretations of qualitative data on the usability of social media blends will encourage researchers in Africa to explore possibilities of conducting qualitative studies in this topic. Specific questions that still need answers include:

- Would separating the tuition discussions from personal discussions make a difference in learning using social media?
- Students provide support for each other online, but can peer support be considered sufficient for the students using social media for e-learning?
- Do social media need their own learning theories?

5.4 Research conclusions

Without getting into the fray of whether technology leads to learning or not; I can categorically say that the arrival of social media in the distance education and e-learning arena has significantly changed both the way we teach and the way students learn. It, therefore, remains for all the stakeholders involved to jump on on the bandwagon of social media and use social media to their advantage. Having said this, it is also important to remember that social media is available to all, including those who may want to use it criminally hence issues of information security still need to be considered before strategically embracing Internet technology.

Looking at the main research question,

Are there clear guidelines on the use of social media blends in e-learning in higher

education?” the following must be mentioned.

The findings from the meta-synthesis as discussed in section 4.5 of this mini-dissertation indicate a lack of clear guidelines and strategies on the use of social media blends in e-learning. However, there is clearly a need for the use of social media to facilitate student learning (Chen & Bryer 2012:7). We, therefore, need strategies to take advantage of social media’s informal and open nature to design effective social media spaces for learning. While there are still many unanswered questions about the use of social media to develop active online learning communities (Kenney, Kumar & Hart 2013: 367) the process outlined in figure 4.5 is an effort towards suggesting a social media learning process that can be used to formulate learning guidelines in the take up of social media blend into online- and e-learning with anchored in student support.

The secondary questions include:

- “To what extent do countries differ in their selection and usage of social media?”

What is clearly shown by this research is the general interest that different countries have in the use of social media to facilitate education in tertiary institutions; see Table 4.1 for the summary; however, what still remains a challenge is for countries to carry out significant qualitative research which can provide rich data to answer questions on “why” and “how” to use social media in distance education. As shown in the discussion of this research; there is little pure qualitative research on the use of social media blends in Africa although quantitative research has been done.

- From the perspective of online collaborative learning (OCL) concepts, how do social media facilitate communication, co-creation of knowledge and collaborative learning in e-learning environments?”

As shown in section 4.5 “concepts that emerged during meta-analysis” and illustrated in figures 4.1.to 4.4 social media facilitate communication among the learners and also between the learners and the teacher through the formation of social links among the participants. Once social networks such as CoPs are formed knowledge is shared leading to learning and creation of new knowledge through the

collaborative activities of the learners.

5.5 Conclusion

This research presented a meta-synthesis on the usability of social media blends in e-learning environments. The analysis and synthesis led to the formulation of a recommended process of learning social media and a set of guidelines presented as emerging concepts from the study in chapter four.

Distance education has always leveraged technology to facilitate learning and social media is no exception. Today as Internet-based technology has taken centre stage in our lives, distance education is clearly making use of social media blends. However, this study shows that the uptake of social media in distance education should be done carefully to make sure that relevant strategies are in place before assuming effective learning.

This research conducted a meta-synthesis of literature on qualitative research articles whose focus was on social media blends used in e-learning. The meta-synthesis was conducted following the online collaborative learning theory as a conceptual framework and the findings showed that the use of social media blends still lacks important empirical data. This study recommends a set of phases in a process for using social media in e-learning. The proposed guidelines should be useful to instructional designers interested in using modern learning theories in e-learning. Since African qualitative research could not be found, further work in this could involve qualitative studies on the use of e-learning in African institutions.

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7 APPENDIX A: RESEARCH ETHICS CLEARANCE CERTIFICATE



COLLEGE OF EDUCATION RESEARCH ETHICS REVIEW COMMITTEE

15 April 2015

Ref#: 2015/04/15/55777503/13/MC
Staff #: Prof E Mnkandla
Staff Number #: 90186524

Dear Prof Mnkandla,

Decision: Approved

Researcher

Prof Mnkandla
P O Box 4640
Cresta
2118
+27116709059/0732196927
mnkane@unisa.ac.za

Supervisor

Prof A Minnaar
Department of Curriculum and Instructional Studies
College of Education
+2712 4296887
minnaa@unisa.ac.za

Proposal: A metasynthesis on the usability of social media blends in e-learning

Qualification: M Ed in ODL

Thank you for the application for research ethics clearance by the College of Education Research Ethics Review Committee for the above mentioned research. Final approval is granted for 2 years.

For full approval: The application was reviewed in compliance with the Unisa Policy on Research Ethics by the CEDU ERC on 15 April 2015.

The proposed research may now commence with the proviso that:

- 1) The researcher/s will ensure that the research project adheres to the values and principles expressed in the UNISA Policy on Research Ethics.
- 2) Any adverse circumstance arising in the undertaking of the research project that is relevant to the ethicality of the study, as well as changes in the methodology, should



University of South Africa
Preller Street, Muckleneuk Ridge, City of Tshwane
PO Box 392 UNISA 0003 South Africa
Telephone: +27 12 429 3111 Facsimile: +27 12 429 4150
www.unisa.ac.za

be communicated in writing to the College of Education Ethics Review Committee.
An amended application could be requested if there are substantial changes from the existing proposal, especially if those changes affect any of the study-related risks for the research participants.

- 3) The researcher will ensure that the research project adheres to any applicable national legislation, professional codes of conduct, institutional guidelines and scientific standards relevant to the specific field of study.

Note:

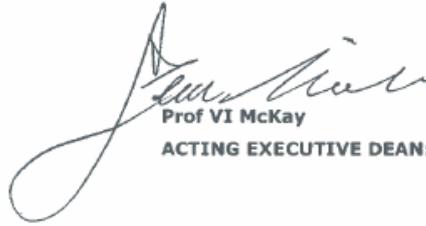
The reference number [top right corner of this communiqué] should be clearly indicated on all forms of communication [e.g. Webmail, E-mail messages, letters] with the intended research participants, as well as with the College of Education RERC.

Kind regards,



Dr M Claassens
CHAIRPERSON: CEDU RERC

medic@netactive.cu.za



Prof VI McKay
ACTING EXECUTIVE DEAN: CEDU



University of South Africa
Pretter Street, Muckleneuk Ridge, City of Tshwane
PO Box 392 UNISA 0003 South Africa
Telephone: +27 12 429 3111 Facsimile: +27 12 429 4150
www.unisa.ac.za

8 APPENDIX B: SCREENING CRITERIA TO SELECT FINAL ARTICLES FOR USE IN THE STUDY

Table 8.1: Screening criteria to select final articles for use in the study

No	Screening criteria for inclusion and exclusion	1	2	3
1	Research question stated clearly and adhered to			
2	Design clearly identified			
3	Aims of the study clearly described			
4	Sampling clearly described			
5	Data collection setting identified			
6	How were data collected?			
7	Specific data collection strategy and why the specific strategy was applicable for the specific study			
8	How were data recorded and ethical aspects described?			
9	Data analysis described with transferability			
10	How were themes and categories identified?			
11	Credibility (member checks, validation of data)			
12	Clear statement of findings			
13	Justification of data interpretation			
14	Clear demarcation between data and researcher's views			
15	General transferability of the research			
16	Was research useful and relevant?			
17	Will the results help?			

Source: Adapted from Paterson et al. (2001:21-26).

9 APPENDIX C: SECOND ROUND SCREENING TOOL FOR METHODOLOGICAL ASPECTS

Table 9.1: Second Round screening tool for methodological aspects in selected studies

(Methodology screening)

Articles	1	2	3	4	5
Author/s					
Timeframe of studies					
Research methodology					
Theoretical framework					
Context of the study, Population and Country in which research was done					
Sample and sample characteristics					
Social media used in Online learning					
Data description and rigour in the study					
Transferability of the finding clearly described with reference to: <ul style="list-style-type: none"> • Methods • Searching strategies • Inclusion criteria • Data analysis • interpretations 					

Member checking and feedback from participants					
Peer review of the research					
Triangulation or multigulation of findings					

All the articles were screened with this tool. Source: Adapted from: Major & Salvin-Baden (2010:43-112).