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**Knowledge portal creation for  
postgraduate studies through online  
communities**

by

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A dissertation submitted in fulfilment of the requirements for the degree

**Magister Philosophiae**

in

**Information Management**

at the

College of Business and Economics

**UNIVERSITY OF JOHANNESBURG**

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**NOVEMBER 2018**

## DECLARATION

I certify that the *dissertation* submitted by me for the degree *Magister Philosophiae in Information Management* at the University of Johannesburg is my independent work and has not been submitted by me for a degree at another university.

Riaan Christo Loots



## ABSTRACT

Technological advances are sparking knowledge creation through ideas and theories, creating entirely new ways of consuming goods and services. Education can help people ride the wave of change by giving students the needed 21<sup>st</sup>-century work skills. Digital technologies can unleash new ways of owning knowledge through interactive teaching and learning models while encouraging collaboration between academics and students.

The educational industry is continuously challenged to innovate in order to remain relevant and survive technological disruption. One demand on resources is learning and specifically the concept of collaborative learning. The role of knowledge repositories to achieve research output allows for collaboration and strengthening of research capacity while improving the quality of the output.

An in-depth literature review was performed that focused on traditional pedagogical principles and its combined application with Web 2.0 technologies. A design-based research (DBR) method was followed from a pragmatic perspective in a qualitative setting to find a model that contributes to the teaching of postgraduate students in an ever-demanding and transforming knowledge economy.

The primary objective of this study was to determine how an online community and knowledge repository could contribute to the management and facilitation of knowledge creation and sharing when teaching postgraduate students. The DBR component of this study was to implement a conceptualised model using qualitative data analysis to measure the outcome of the conceptualisation in attaining benefits for all stakeholders involved.

The study has shown how digital technologies provide new ways of owning knowledge, through interactive teaching and learning models, it has further shown how knowledge repositories can successfully achieve research output through collaboration and strengthening of research capacity while improving the quality of output.

**KEYWORDS:** Communities of practice; knowledge repositories; online supervision; online collaboration; reflective journaling; research journey; wikis; blended learning; pedagogy; learning management systems; 21<sup>st</sup>-century skills; knowledge creation; peer learning.

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## LIST OF ABBREVIATIONS

DBR	Design-based research
ICT	Information and communication technology
KMS	Knowledge management system
LMS	Learning management system
NMC	New Media Consortium
VLE	Virtual learning environment
WEF	World Economic Forum
ZPD	Zone of proximal development

# CHAPTER 1: INTRODUCTION

*“Play will be to the 21<sup>st</sup> century what work was to the industrial age  
– our dominant way of knowing, doing and creating value.”*

Pat Kane, 2004

## 1.1 INTRODUCTION

Humanity stands on the verge of a technological transformation – one that will change the way we live, work, and relate to one another. Our response must be united and inclusive, and must involve stakeholders from the academia as well as the public and private sectors. User-friendly and accessible technology-enabled platforms that combine both supply and demand, especially those in the “sharing” or “on-demand” economy, are rendered easy to use, and convoke data, assets, and individuals. These technologies are lowering economic, personal, and business barriers, in ways that create entirely new ways of consuming goods and services by altering our personal and professional environments. We need to embrace this future through human empowerment (Schwab, 2016).

Knowledge-driven economies are the future; using education can help people ride the wave of change by providing students with the needed 21<sup>st</sup>-century work skills. Digital technologies can unleash new ways of owning knowledge, through interactive teaching and learning models and by encouraging collaboration between academics and students, while also dramatically decreasing the financial burden on students. All of these require the education system to revolutionise its own business to remain relevant and to survive this technological disruption (Hansen, 2018).

Educational institutions are constantly challenged to find innovative ways to develop under continued pressure on resources (Kukulska-Hulme, 2012:248). The inefficient use of resources can lead to a reduced rate of productivity (Afzal, Goraya, Sherazi & Sajid, 2013). One such demand on resources is learning and specifically the concept of collaborative learning.

The role of knowledge repositories to achieve research output allows for collaboration and strengthening of research capacity while improving the quality of the output (Sarker,

Davis & Tiropanis, 2010:3). Institutional repositories are gaining recognition for being essential infrastructure for higher education institutions in the digital world (Sarker *et al.*, 2010:5). The advances in technologies bring many benefits to higher education and specifically in research innovation that is sparking knowledge creation through ideas and theories (Xing & Marwala 2017:15).

This first chapter is aimed at familiarising the reader with the study. The chapter provides a background to the research problem and objectives, followed by a summary of the design and methodology applied in this investigation. The chapter outline aims to familiarise the reader with the content that follows.

## **1.2 BACKGROUND**

The concept of collaborative learning is not new and dates back to the early 1970s. The “zone of proximal development” (ZPD), which is a characteristic of Vygotsky’s sociocultural theory, reasons that a learner can only achieve an understanding of new ideas and concepts by acquiring feedback from an instructor or peer. According to Vygotsky, peer interaction is a crucial element that allows a learner to grow on a personal level, while also acquiring knowledge during the process; in other words, collaboration with peers provides an opportunity to assist students with problem solving (Ku, Tseng & Akarasri, 2013:922). The concept of traditional training has therefore morphed into “development”, which is a continued process related to changing approaches and conduct in preparation for the future (Kukulska-Hulme, 2012:248). Collaborative learning can be described as a method of instruction in which learners work together as a group in pursuit of a mutual goal. Learners engage in knowledge construction through the integration of new information and knowledge networks. Collaborative learning is thought to improve the level of performance through activities of higher-order thinking when discussing problems and suggested solutions (Ku *et al.*, 2013:922).

The potential for collaboration is intensified in an online learning environment as it provides access beyond the classroom for meeting and exchanging ideas. Fostering collaboration skills also prepares students to confront problems in the globalised world (Johnson, Becker, Estrada & Freeman, 2014:10). Online collaboration transfers traditional in-class collaborative learning to a computer-mediated space that allows interaction through scaffolding, the sharing of resources, and higher-order thinking. The benefit to learners is found in the extendibility of an online collaborative environment by

empowering learners to interact and to co-create their learning (Ku *et al.*, 2013:922). Lamerias, Levy, Paraskakis and Webber (2012:142) proclaim that digital technology affects the quality of learning since it is an inescapable element of teaching and learning environments for universities globally. Institutions of higher education have different interpretations and tactics ranging from a teacher- and content-focused medium for information provision, to a student-focused and learning-orientated medium for engagement in communication, and collaborative knowledge building (Lamerias *et al.*, 2012:142). The technology used for electronic teaching and learning is packaged in a platform commonly known as a virtual learning environment (VLE).

Modern VLEs utilise Web 2.0 applications intrinsically to support collaborative content construction. VLEs can support productive learning by providing access to learning technologies such as narrative media (e.g. text, video, or audio), interactive media (e.g. web links or digital libraries), communicative media (e.g. discussion boards or chat), adaptive media (e.g. online simulation), and productive media (e.g. blogs or wikis). Regarding technologies, VLEs are often orientated towards teacher-centred approaches rather than learner-centred methodologies and can have built-in constraints against the development of effective technology-enriched pedagogies (Lamerias *et al.*, 2012:142-143). Web 2.0 technologies provide innovative opportunities to create and share content while interacting with others. They embody tools to allow for publishing self-created media and inspire new practices and attitudes. Students, as online learners, no longer only consume information but can create and recreate knowledge within a VLE. Moreover, if e-learning is approached in this manner, students can consume existing material, add their input, and then republish it without the need for traditional authority channels (Bennett, Bishop, Dalgarno, Waycott & Kennedy, 2012:524). Therefore, within the VLE environment, a student's role can be flexible and can change from a receiver of information, to authoring ideas and knowledge, or supporting the learning of others (Lamerias *et al.*, 2012:151).

The students' engagement with these new technologies in an ongoing and daily manner leads to higher education recognising, and being challenged by, new ways in which they can engage students in an individual and collaborative manner. The assumption that some students are already driven and skilfully engaging with Web 2.0 technologies on a daily basis motivates their use in the context of an academic environment. It can also be argued that the modern world requires being proficient in the use of Web 2.0 technologies for instructional activities, which has led to various applications in higher

education (Bennett *et al.*, 2012:524-525). As a result, these technologies are growing in popularity as tools for teaching and learning purposes and can be seen in social networking tools, video sharing, blogs, and wikis (Huang, Hood & Yoo, 2013). Students can be prepared for new literacies and skills such as communication and collaboration by adopting social networking functions available from information and communication technologies (ICTs) (Wang, Hsu, Reeves & Coster, 2014:102), such as blogging.

The example of applying the practice of creating content for blogging can be seen as very authentic since skills and knowledge of Web 2.0 are inherent to this activity. The purpose of blogging in this instance goes beyond simple content creation since it is available to a genuine audience, individual in nature, making authorship attributed, and allows for assessing individual contributions; all of which are required for academic purposes, and showing a perfect example of Web 2.0 being well aligned with educational practices (Bennett *et al.*, 2012:532). A wiki application is another example of a Web 2.0 technology that facilitates a robust collaborative platform through editing and includes mechanisms for monitoring contributions to sections. It is quickly adopted in academic areas because of its advantages of creating knowledge, sharing, diffusion, and accrual (Wang & Wei, 2011:800). Knowledge sharing is also a form of communication by acquiring knowledge from others. Knowledge-sharing activities require knowledge owners and knowledge constructors. Knowledge owners express their knowledge via communication media to facilitate sharing. Knowledge re-constructors receive said knowledge, and re-form, comprehend, and internalise it with their own existing knowledge (Wang & Wei, 2011:801).

Bhusry and Ranjan (2012:320) argue that unstructured, acquired knowledge adds no value, is not accessible, and loses its potential value. Transforming critical knowledge is usable (Bhusry & Ranjan 2012:320). Additionally, it is possible to maximise the benefits of knowledge by facilitating the flow between knowledge owners and seekers, which makes it essential to structure and facilitate this movement of knowledge (Wang & Wei, 2011:802), which can be done in an online community. The quality of a community and its interaction is critical in such a learning environment (Johnson *et al.*, 2014:10).

A community, in this instance, is described as a group of individuals who gather for a combined purpose or obligation to one another. The swift formation of virtual communities is a direct result of the developments in technology that support community-orientated interactions. Consequently, virtual communities are effective systems and

valuable as facilitating agents within an organisation for knowledge sharing but depends on its members' inclination to share information for mutual benefit (Wang & Wei, 2011:802). With emerging technologies, there is an ease with which students can ask and answer questions posed by their peers, with the potential of real-time feedback from instructors (Johnson *et al.*, 2014:10). Different implementations of Web 2.0 are more successful than others, which is usually the case where alignment between Web 2.0 and education practices is high (Bennett *et al.*, 2012:533). Technology is, however, not a miracle solution, but acts as enablers and accelerators, healthy pedagogies, and comprehensive educational models that remain fundamental. The evolution of society also remains a central aspect that guides how technology is applied (Adams-Becker, Cummins, Davis, Freeman, Hall Giesinger & Ananthanarayanan, 2017:6). Innovative application of educational technologies is being positioned to complement existing and emerging pedagogies while also addressing 21<sup>st</sup>-century skills gaps (see Section 2.2) (World Economic Forum [WEF] 2015:1).

In order to promote collaborative learning, specific teaching-learning processes supported by educational media should be created (Bhusry & Ranjan, 2012:317), therefore allowing for content production in a less traditional form, which Bruns (2008:1) defines as produsage, which is “the collaborative and continuous building and extending of existing content” for further perfection; thus resulting in people who are continually reproducing themselves and their environment (Bruns, 2008:9). Produsage from collaborative interactions among community members of shared projects characterises a shift from industrial production reliant on dedicated individuals for content creation. Produsage assumes that a large enough community as a whole will be favourably positioned to contribute more than a small group of producers (Bruns, 2008:3) Having created knowledge available online is essential, but developing integrated repositories to cater for the needs of focused interest groups should not be neglected. To achieve this, knowledge can be stored in a knowledge repository (Bhusry & Ranjan, 2012:317).

Maintaining the knowledge from a collaborative effort as an institutional resource should be a necessity (Bhusry & Ranjan, 2012:314). Resources generated by academics and learners, or academic-to-learner and learner-to-learner interactions for study activities, constitute core knowledge assets, making it worth the effort to be organised, managed, shared, and reused efficiently (Sampson & Zervas, 2013:118). Educational innovation has many objectives; one of which is improving the competitiveness of teaching. This can be achieved by transforming student and teacher knowledge into organisational



knowledge (Fidalgo-Blanco, Sein-Echaluce & García-Peñalvo, 2015:267). Such a repository benefits an institution not only in its ability for reuse but improves efficiency (Bhusry & Ranjan, 2012:325). For most universities, repositories form an essential element for the publishing and retrieval of learning objects (Fidalgo-Blanco *et al.*, 2015:267). Knowledge management systems (KMSs) can be used to facilitate the acquisition, cultivation, and reuse of several knowledge assets that originated within organisations. Within Web 2.0 communities, the potential of user-generated content allows knowledge to be provided by both discipline experts and peers (Sampson & Zervas, 2013:119). Within this context, this research project aims to identify the required support functionalities for organising and sharing knowledge within an educational community.

Transforming knowledge into appropriate forms in a knowledge repository enables easier maintenance and broader accessibility. Constant maintenance and improvements of the knowledge are also important aspects of knowledge management and can be achieved by adopting a feedback and assessment mechanism. Another important aspect is the deployment of this knowledge to points of use (Bhusry & Ranjan, 2012:320). According to Kim (2011:248), establishing trust in digital repositories can be achieved when three conditions are met, namely recognition of a reliable set of values and best practices, content of high quality, and the worth of the repository as a suitable platform for storing and retrieving the content.

The alliance of academic knowledge with exploration and external contributions will yield benefits at institutional level in intellectual production, student-centric learning, and broader reach of resources – all of which will be easier and faster to access. Thus, applying a knowledge management approach is a vital consideration for improving the efficacy of teaching and learning (Bhusry & Ranjan, 2012:327). Institutional repositories can integrate different types of knowledge by providing search functions and classifications (Fidalgo-Blanco *et al.*, 2015:267). The value of knowledge resides in the ability for it to be organised, shared, and reused (Sampson & Zervas, 2013:129).

### **1.3 RESEARCH PROBLEM AND OBJECTIVES**

The level of quality of supervision remains one of the most important issues for students who are conducting research (Yeoh & Doan, 2012). Group and peer learning have been studied extensively in higher education settings (Wichmann-Hansen, Thomsen &

Nordentoft, 2015:20). Supervision methods that apply peer learning, however, have not been addressed for supervisors, nor have group supervision or peer learning principles (Wichmann-Hansen *et al.*, 2015:20). Wichmann-Hansen *et al.* (2015:20) call for new supervision models by arguing that the traditional relationship of supervision neglects more collaborative forms that can accommodate a growing and diverse student population. The new models should specifically address community or cooperative attitudes to supervision, which can increase student participation in authentic academic activities while adding value when compared to traditional supervision (Wichmann-Hansen *et al.*, 2015:21). Students entering master's programmes often do not have recent educational backgrounds to draw on. Additionally, they often study on a part-time basis while working, which makes it harder to establish close collaboration between peers (Wichmann-Hansen *et al.*, 2015:31). The indication from research is that most academics still approach technology only as another medium for students to learn from, which yields insufficient results in student achievement (Wang *et al.*, 2014:109).

Research projects developed individually or in smaller groups by students provide an intense learning experience typically embraced by motivation and interest. Ball and Pelco (2006:147) add that when formulating research hypotheses, the first-hand review of research literature is more purposeful when directed at achieving the research objective, and provides a better learning experience than when merely reviewing a textbook. This form of assistance, better known as “scaffolding”, does not only have to be provided by the teacher but can also be obtained from the students' peers. Research has shown that group work allows students to be supportive of one another in information-seeking practices, retrieval of information, building of knowledge, critical thinking, problem solving, and knowledge acquisition. Allowing students to engage in group activities encourages social interaction and peer-induced learning (Du, Chu, Chan & He, 2016:381).

With a lack of empirical evidence on the impact that cognitive tools have on classroom practices and student learning (Wang *et al.*, 2014:101), this research attempted to address these suggestions of collaborative learning among peers, coupled with peer learning supervision in finding new models for postgraduate supervision, as made by Wichmann-Hansen *et al.* (2015:20-31).

This research project originated from the dilemma of teaching diverse postgraduate students from diverse backgrounds and disciplines in research methodologies for

research projects of limited scope in the Department of Information and Knowledge Management's curriculum. Considering that supervision methods applying peer learning, group supervision or peer learning principles haven't been addressed Wichmann-Hansen et al. (2015:20) the researcher identified that the needs of our changing society have necessitated that higher education adapts by finding new non-traditional models of one-on-one supervision. One way to cater for increased and diverse student participation is to consider group and peer learning by considering community or collective approaches that are authentic and that add value. Allowing students to engage in group learning, social interaction, and peer-induced learning opens the possibility for institutions to remain relevant in the 21st century. The following research question to attempt to address the identified need are thus stated:

**How can an online community and knowledge repository be used to centrally manage the facilitation of knowledge creation and sharing in the teaching and learning of research methodology to postgraduate students?**

The following three sub-questions were identified to answer the main research question:

- 1) What is the value of a knowledge repository for the teaching and learning of research methodology as perceived among key stakeholders?
- 2) What are the characteristics and components of an online community and a knowledge repository for the teaching and learning of research methodology?
- 3) How can the composition of an online community and knowledge repository as identified from Sub-problems 1 and 2 meet the research methodology information needs of supervisors and postgraduate students?

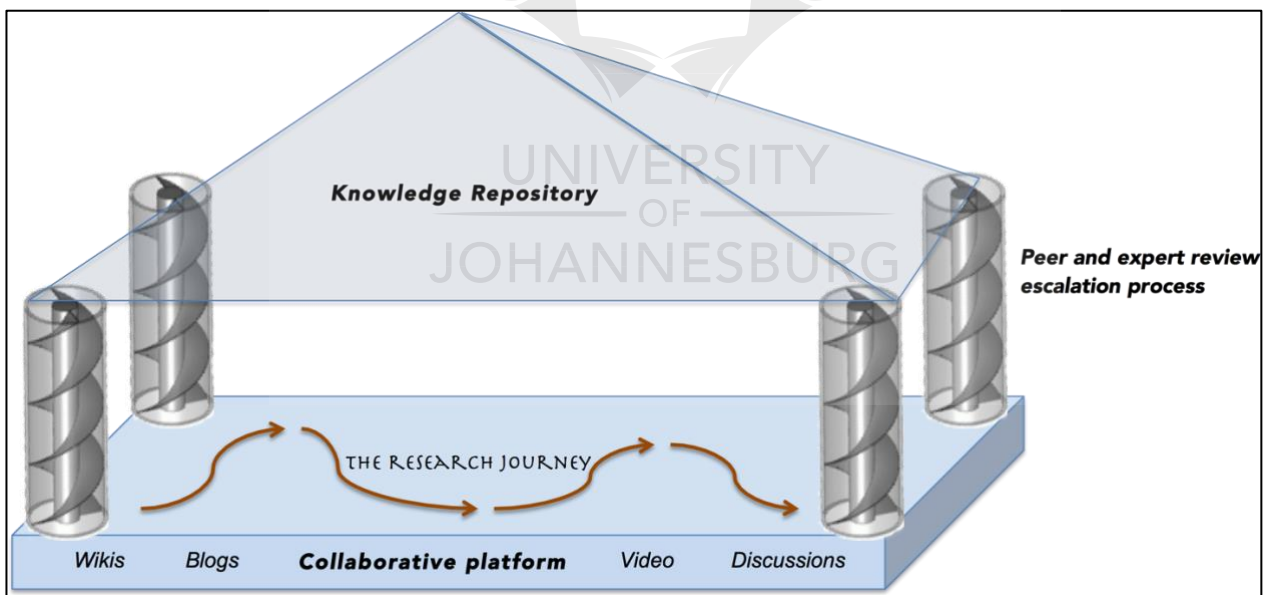
With digital solutions there is a fine balance where the users need to find value in a proposed solution. Without value, the solution will not be used. It is for this reason that the value of the system is addressed in its own sub-question. All digital solutions consist of characteristics and components. A specific component will address a specific use-case need. Each component will elicit its own set of characteristics. Combining different components will elicit levels of value based on the characteristics. It is in the composition of all of this that the answers were found.

## 1.4 RESEARCH DESIGN AND METHODS

This study is grounded on a pragmatic paradigm (see Section 3.2) and approached from the perspective of DBR (see Section 3.5). The research was conducted from an interpretivist angle (see Sections 3.2, 3.4, and 3.5) using a qualitative method (see Section 3.3).

### 1.4.1 Research design

In 2014, the researcher built an initial prototype for an online collaboration platform as part of another research project; the results of which were published by Mearns and Loots (2016:255-268) in the book *Postgraduate supervision: Future foci for the knowledge society*. Interpreting the literature review and findings of the heuristic evaluation identified ways in which the research can be taken further; these require that the prototype be adjusted further. This is partially conceptually visualised in Figure 1.1. Figure 1.1 is a conceptual framework that guides the structure of the research conducted on the two cohorts. The framework is then adapted in chapter 5 with a newer conceptualization based on the findings received.



**Figure 1.1: Adjusted approach to the conceptualisation of the collaborative platform and knowledge repository**

Source: Author

The suggested prototype can be broken down into three separate concepts. The first concept draws from the idea of research as a journey that must be completed within a specific predefined scope and period. The second concept is that of a collaborative

platform, and the last represents a knowledge repository. The similarity between completing a postgraduate research study is cunningly similar to starting a journey with an end destination in mind. During the journey, the student must complete certain milestones such as the research proposal, reviewing literature, gathering and interpretation of data, etc. until they reach their final destination, which is the completion of the thesis document, or any other published documentation such as scholarly articles. This component of the prototype should be used for administrating and guiding the students through the journey by tracking and reminding them to remain on the research path. Students must submit documents at specific intervals during the journey, and this must be managed by the prototype.

The second concept, the collaborative platform, will allow participants to participate in various discussions using different Web 2.0 technologies such as blogs, wikis, discussion forums, and video sharing to contribute to the third and final concept, namely the body of knowledge encompassed in the knowledge repository. The idea is to have dedicated topics within research methodology, such as questionnaire development, to be represented in, for example, a dedicated blog, where experts on the topic take ownership and accountability for the discussions that take place in the blog. Peers and experts evaluate the contributions, and those that have value are then put through a vetting process by peers and expert reviewers, using the 4Cs, namely collaborative, creative, critical, and communicative capacities, as suggested by Bruns (2008:8), to be escalated into a knowledge repository for long-term storage and sharing. The information within the knowledge repository should be classified and easily searchable to allow easy navigation through the continuous contributions that are being captured.

This conceptualisation aims to allow for collective learning among students, making the supervision process less lonely, and buffering against the repetitive nature of supervision by referring students to knowledge already captured in the knowledge repository. By allowing a continuous influx of new contributions, the knowledge repository stays dynamic and current. With each module intake, the collaboration platform can be cleaned up for the new contributors and the valuable contributions elevated into the knowledge repository.

### 1.4.2 Research methods

This study was conducted on students registered for an honours course in research methodology at the University of Johannesburg's Department of Information and Knowledge Management. The coursework required students to work in groups on a research project; they then had to write five different wikis each on a component of the research project. The first wiki was on research design, the second on research methods, the third on sampling selection, the fourth on data collection, and the fifth on data analysis. Peer assessment is thought to reward students who play a significant role in group projects and also encourages others students to assist in group project development as much as possible (Ball & Pelco, 2006:149).

After each wiki, students had to review the submissions made by their peers. During the whole process, the students were required to keep a reflective journal. The journal had five mandatory entries spread throughout the learning process. Guidelines with instructions on what aspects they needed to reflect on were provided in order to pedagogically guide them to reflect in a growing fashion by guiding the students to incorporate aspects they reflected on in their previous entry, while also considering the feedback received from their wikis and previous reflective entries.

In Chapter 4, the researcher discusses the prototype that was developed, followed by the feedback received for each iteration and how it influenced the prototype development, and concludes Phases 1 and 2 of the DBR model in Figure 3.1. The study aims to deliver additional evidence of the perceptions and possible advantages of using an online collaborative platform as a knowledge repository at postgraduate level.

The methodology and strategy that were applied are discussed in Section 3.6. Following an iterative approach (see Section 3.5), qualitative data were collected (see Section 3.7) through reflective journals (see Section 3.7.2) and a focus group interview (see Section 3.7.2). The methods applied to sampling and participants are discussed in Section 3.7.1. The data-analysis method is discussed in Section 3.7.3, followed by quality assurance and ethical considerations in Section 3.5 and 3.7.

## 1.5 CHAPTER OUTLINE

The current chapter introduced the study and briefly introduced the design and methodology that were followed. The remainder of the chapters address different aspects of the study, and are outlined as follows:

### **Chapter 2: Literature Review**

This chapter explores the available literature to provide a brief portrayal of the characteristics, components, and the value of an online collaborative environment with the specific application of a collaborative platform to facilitate and manage teaching and learning in building and integrating a knowledge repository for use in postgraduate supervision. The chapter reports on the investigation of the literature on the value of a knowledge repository concerning educational theory, pedagogy, supervision, online learning, and applicable Web 2.0 technologies, and highlights the characteristics and components of an online collaborative platform and knowledge repository, as well as supervision challenges and potential solutions for supervisors.

### **Chapter 3: Research Design**

In this chapter, the choice of philosophical paradigm (pragmatism) applied to the research is motivated. The DBR approach is explained and the reasons why a qualitative methodology and strategy were followed are provided. This conceptualisation, the population, the sampling process, and sample size are discussed. The chapter concludes with a discussion of the data-collection method and measuring instruments that were used.

### **Chapter 4: Research Analysis and Discussion**

The outcomes of the research are presented in this chapter, followed by an exploration of the critical findings, their interpretations, and implications. The chapter focuses on how an online community and knowledge repository can be used to centrally manage and facilitate the creation and sharing of knowledge, with specific application in postgraduate teaching and learning of research methodology.

### **Chapter 5: Summary, Conclusions, Implications, and Recommendations for Future Research**

The last chapter concludes the research and presents a summary of the research, discusses the recommendations for another iteration of the same conceptualised model,

and makes recommendations for future research. This chapter closes the study with a discussion of the limitations and presents some final thoughts.

## **1.6 CHAPTER SUMMARY**

This chapter presented and outlined the study as an investigation into the creation of knowledge portals for postgraduate studies through the use of online communities. It was followed by a rationale stating the research problem. The research problem seeks to find ways in which online communities and knowledge repositories can be used effectively in knowledge creation and sharing for postgraduate studies of research methodology. Thus, the aim is to establish what the value, characteristics, and components, as well as their composition, are to meet the research needs of supervisors and postgraduate students.

The sub-questions were stipulated together with the research aim and objectives. The research design and methods were subsequently briefly introduced, followed by the layout of the chapters in this dissertation and the chapter summary.





## **CHAPTER 2: LITERATURE REVIEW**

### **2.1 INTRODUCTION**

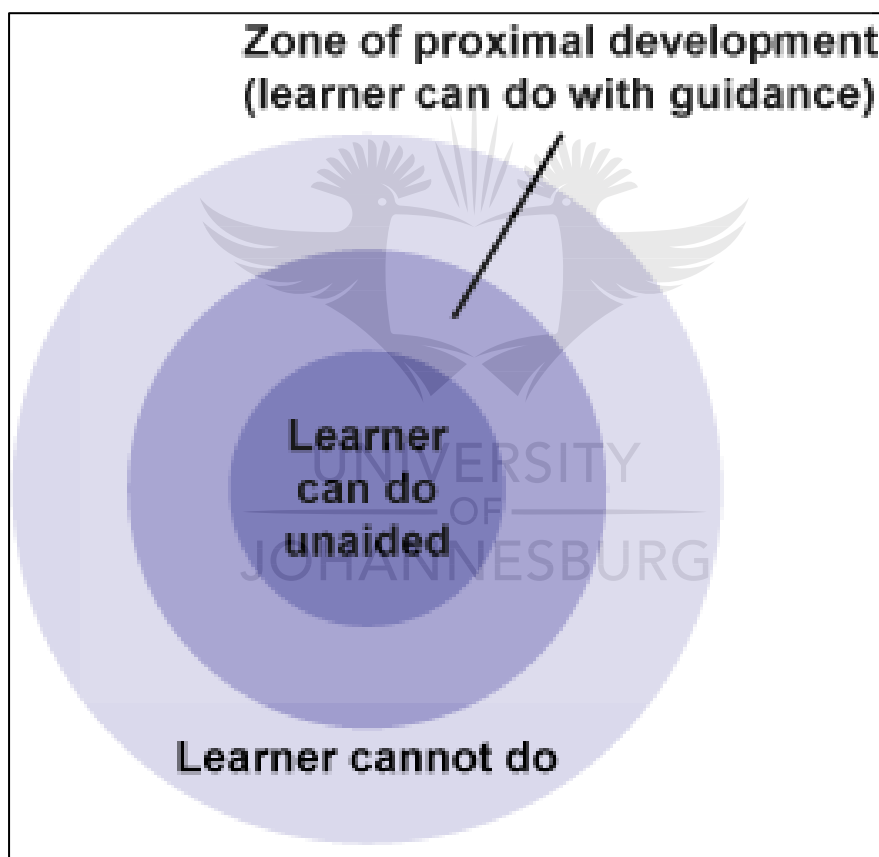
The improvement of educational processes has resulted in a permanent need for applicable, high-quality knowledge creation and advancement (Jakovljevic, Buckley, Bushney & Majewski, 2013:3). Internet technologies, specifically Web 2.0 tools, provide the ability to share knowledge online. Tools such as blogs and wikis, unlike Web 1.0 tools, allow for continuous knowledge creation in ways that static web pages can never do (Jakovljevic *et al.*, 2013:5). It is important to recognise that globalisation has an effect on society and their expectations. Singh and Hardaker (2014:109) argue that literature is sufficiently representative of the benefits found in learning technologies within higher education, which include access to resources globally with a perceived reduction of prices to students, making it conceivable to provide an improved and flexible learning environment.

According to Xing and Marwala (2017:10), a new form of university is starting to arise – one in which teaching and research are taking on a different format in an interdisciplinary fashion and in which virtual classrooms are embraced. Universities should understand the workforce expectations of the 21<sup>st</sup> century and its appetite for creation and innovation (Albert, 2013). The universal trend of always being online, with a “work when and where it suits me best” mentality, is a trend common to the younger generation that will not diminish and that must be embraced to take full advantage of it.

The overall objective of Chapter 2 is to underpin the pedagogical theory that supports higher education learning with specific application of Web 2.0 technologies and the required 21<sup>st</sup>-century labour skills as supported by the literature. The chapter starts with traditional education pedagogy, followed by pedagogical dimensions that are friendly to online and blended learning environments while also serving as guidelines to ensure that amenable teaching and learning principles are maintained. Next, the chapter reflects on supervision in an online environment, followed by evaluation of interactive learning systems. The second half of the chapter considers specific Web 2.0 tools, starting with wikis, reflective journaling, online communities, and knowledge repositories. The chapter concludes with the benefits of communities and knowledge repositories.

## 2.2 SOCIAL CONSTRUCTIVISM

Vygotsky's ZPD connects psychological development with pedagogical perspectives on instructions by assuming that development and instruction are socially embedded, necessitating the need to analyse the surrounding society and its social relations (Daniels, 2005:227). In basic terms, the ZPD (see Figure 2.1) is the difference between what a learner can achieve without help versus being helped (Yasnitsky, 2014). This Vygotskian theory states that learners are able, within limits, to copy a series of actions that surpass their capabilities. The learner can perform at a better level when guided, as opposed to being left alone, and can do so with understanding. The ZPD refers to the variance between the level of solved tasks performed with help as opposed to the level of tasks solved independently (Daniels, 2005:227-228).



**Figure 2.1: Zone of proximal development (ZPD)**

Source: The Open University (n.d.)

A change in understanding the nature of learning, pedagogically speaking from a constructivism viewpoint, which recognises that learners construct knowledge themselves, has resulted in the emergence of learner-centred approaches to teaching (Barraket, 2005:65). The learner-centred approach has been collectively defined as a

process where students have greater control over their pace of learning and methods used by holding students responsible for their educational advances (Barraket, 2005:65). Barraket (2005:66) also defines the shift to a learner-centred approach as having the following characteristics:

- Classroom power shifts from teacher to student (learner-centred).
- Students design content as a means of building knowledge (social constructivism).
- The teacher is positioned as a facilitator and contributor instead of as a source of knowledge (facilitation).
- Responsibility shifts from the teacher to the learner (autonomic learning).
- Learning through effective assessment (development, feedback) is promoted.

The completion of an introduction to a research methods course, as in this study, is not only necessary for students who will need to conduct their research independently in the future, but is also essential for their professional careers as they will need to be able to make informed decisions in the workplace (Ball & Pelco, 2006:147). Around the world, economies have been impacted by technology through accelerated automation and digitisation of routine tasks. The job market is increasingly centred around solving unstructured problems and effectively analysing information; this requires individuals who can collaborate, innovate, and apply creativity (WEF, 2015:2). According to the WEF (2015:3), 21<sup>st</sup>-century labour skills require students to have the following competencies: critical thinking or problem solving, creativity, communication, and collaboration. Technological innovations in the educational space are showing potential to address these skills gaps, and help improve the quality of education, while also lowering the costs by finding creative solutions, increasing access to education, enabling scaling of sustainable educational models, providing insights into student learning through real-time access, and increasing teacher productivity (WEF, 2015:8).

Combining online instruction with face-to-face instruction, referred to as blended learning, is one approach to enhance the learning experience for students (Graham, Spring & Welch, 2014:185,189). In its *2025 Strategic Plan*, the University of Johannesburg (2017:17) identified the need to establish teaching and learning with technology as a mandatory requirement, starting with all first-year modules in 2014. Further vital areas to the plan include ongoing training for academics and students on the use of technology, annual targets for the utilisation of e-books, financial support, and off-campus access to the Internet as part of its technology plan.

Blended learning should be distinguished from other forms of learning that make use of online instruction. Blended learning differs from enhanced face-to-face instruction or fully online courses. The real test of blended learning does not reside with the amount of online learning that is present in a course, but rather how usefully (see Section 2.3) face-to-face interaction and Internet technology is integrated into the course design. Blended learning design introduces a level of complexity that requires a departure from both face-to-face and fully online approaches; this entails a reconceptualisation and reorganisation of teaching and learning tactics (Garrison & Kanuka, 2004:96-97).

The properties of the Internet allow for asynchronous (independent of space and time) learning experiences that are independent and collaborative while also creating the impression of being synchronous. One educational implication of Internet technology is its emphasis on written communication, which can be highly effective in encouraging reflection (see Section 2.8) and precision of expression (Garrison & Kanuka, 2004:97). Blended learning is especially effective in its ability to support a community of inquiry (see Section 2.9). Through the community, open and balanced communication and limitless access to information are achieved, which can be comforting and consistent in providing conditions that encourage open and critical dialogue. Specific learning needs can easily be facilitated through blended learning; for example, at the start of a course, face-to-face classes (see Section 4.3) can allow people to meet and build community, whereas a complex task (for example peer reviews in Sections 2.5 and 4.3) that requires reflection is best implemented as an asynchronous online activity (Garrison & Kanuka, 2004:97).

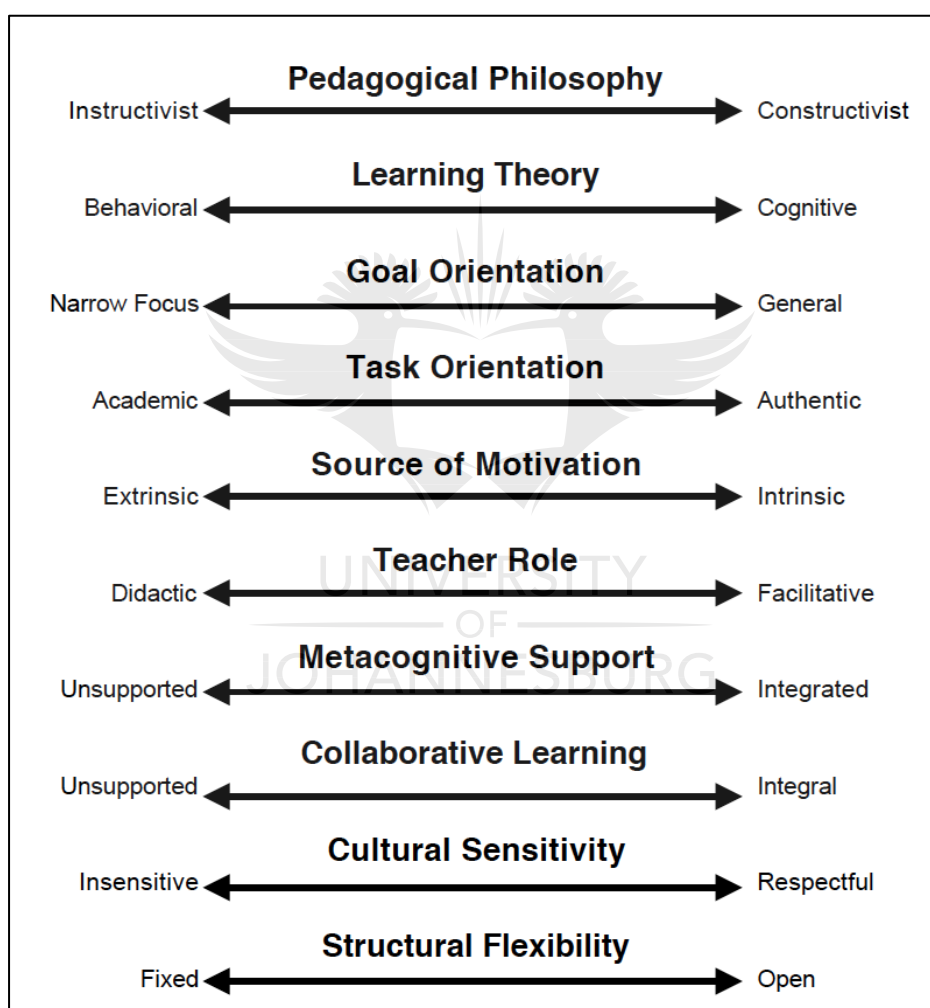
Blended learning brings an opportunity to effectively facilitate critical, creative, and complex thinking, which is an important need of the information age, but it requires reflecting and rethinking course design and delivery from a teaching and learning perspective, providing instructors with an opportunity to apply a much-needed teaching transformation in education through a blended presence (Garrison & Kanuka, 2004:99). This rethinking can be achieved by calling on critical pedagogical dimensions such as suggested by Reeves and Hedberg (2003:190-195).

### **2.3 PEDAGOGICAL DIMENSIONS**

In the past, evaluators often trusted traditional empirical evaluation techniques to equate the use of instructional innovations against other approaches. A significant drawback of

this approach is the assumption that the systems being compared are cohesive and holistic entities with meaningful differences. Given that instructional methods are substantially different from one another, it is essential to identify the appropriate pedagogical dimensions expressed before an evaluation of the method can be telling (Reeves & Hedberg, 2003:190).

In order to analyse an interactive learning system, it is essential to take into account that the pedagogical aspects are being addressed. One such system is proposed by Reeves and Hedberg (2003:190-197), as illustrated in Figure 2.2, which can be used to analyse interactive learning, and is discussed next.



**Figure 2.2: Pedagogical dimensions of interactive learning systems**

Source: Reeves and Hedberg (2003:191)

### 2.3.1 Evaluating alternative learning systems

Reeves and Hedberg (2003:190-197) describe ten dimensions (see Figure 2.2) that can be applied to comparatively analyse and evaluate the differences in pedagogy between

two approaches. They further stress the importance of the instrument being descriptive as opposed to prescriptive. The dimensions are each offered as two-ended scales with opposing ideas at each end, narrowing down the complexity of learning; therefore, it is important to look at the array across those dimensions to understand the representation of the instructional design for the interactive learning system. While the array is not assured to produce an effective learning system, the instrument can be used to identify similarities and differences in pedagogy between two systems (Reeves & Hedberg, 2003:190). The dimensions used by Reeves and Hedberg (2003:190) are discussed in the next section.

### **2.3.1.1 Pedagogical philosophy**

Pedagogical philosophy speaks to ranges of strict instructivist to radical constructivist. Instructivists view the importance of objectives that can be sequenced into different learning hierarchies, which represent the progression of learning from a lower- to higher-order level. From this perspective, the instruction is planned to tackle the learning objectives sequentially with little regard for the learner. They believe that knowledge is acquired objectively and measured precisely with tests (Reeves & Hedberg, 2003:190-191). Constructivists have a completely contrasting view of learning, with emphasis on cognitive strategies, learner intentions, and their experiences. Constructivists believe that each learner constructs different mental processes that are based on their pre-existing knowledge and experiences. An important aspect for constructivists is that a learning environment should be as fulfilling and varied as possible. The aforementioned can be achieved, for example, by avoiding direct instruction, and instead providing opportunities for tasks that address problem solving with personal points of reference for each learner (Reeves & Hedberg, 2003:191-192).

In this study, the philosophy that was followed leaned towards constructivism. The instructional activities were designed to enable students, using methods such as workshops, which were regarded as working sessions, instead of only being used for information dissemination (see Section 4.3).

### **2.3.1.2 Learning theory**

Sound learning theories should form the basis of any interactive learning system. Although there are a few theories that are useful, behavioural and cognitive psychology

dominate the instructional design. Where behavioural psychology is ever present in interactive learning systems, cognitive psychologists instead concentrate on internal mental states, as opposed to behaviour (Reeves & Hedberg, 2003:192-193).

In this study, a blend of both behavioural and cognitive aspects was applied. Students were required to (respond) produce work (desirable behaviour), while stimuli were incorporated through responses and feedback. In order to address the cognitive aspects (mental state of mind), personal reflection and peer reviewing were incorporated as vital components of this course.

### **2.3.1.3 Goal orientation**

Within education and training, goals vary from very precise to broad general goals. Goal orientation is a dimension that also falls within the spectrum of interactive learning. Thus, direct instruction could be applicable in some instances, while a more constructivist approach is more appropriate for others. More advanced learning environments could include opportunities for blending technology as a cognitive tool (Reeves & Hedberg, 2003:193).

The nature of this study required students to learn critical research skills, thus precise goals had to be achieved (see Section 4.3) together with higher-order goals such as critical thinking, reflection, and academic writing skills – all of which are necessary for students to function in the 21<sup>st</sup>-century workforce (see Section 2.2), as well as equipping students with the ability to pursue further research at master's and doctoral levels.

### **2.3.1.4 Task orientation**

The context of learning should be relevant; tasks can range from purely academic to authentic. Interactive learning can be so much more than mere academic tasks and can bring authentic tasks that are of relevance to learners. Transfer to real-world contexts can be achieved by positioning interactive learning activities to represent relevant real-world scenarios (Reeves & Hedberg, 2003:193).

This study emphasises academic outputs (see Section 4.3) that need to be achieved; however, where possible, authentic learning was incorporated to present students with real-world skills required by the modern labour market, such as critical thinking, reflection, collaboration, and group work.

### **2.3.1.5 Source of motivation**

Motivation is a primary factor within learning theory. Sources of motivation can range from extrinsic (external to the delivery system), to intrinsic (integral to the learning system). Therefore it is also apparent that motivational characteristics must be consciously designed into interactive learning (Reeves & Hedberg, 2003:194).

In this study, an unintended source of motivation turned out to be the reflection journal entries (see Section 4.4.2), which were an intrinsic part of the course design.

### **2.3.1.6 Teacher role**

Interactive learning systems provide various roles for educators, facilitators, instructors, etc. The continuum can range from didactic to facilitative. Well-designed interactive learning systems should attempt to assign cognitive responsibility to form part of the learning, allowing the teacher to be a collaborator or coach during the process of knowledge construction (Reeves & Hedberg, 2003:194).

In this study, a blend of both traditional teaching and guidance was applied. For example, students received instructions during the workshops, but were further guided in terms of what was required by their supervisors when working on their research documents, and received guiding feedback from the course instructor in terms of their wikis and reflection entries – all of which were intended to guide the student through a process of self-learning to reach the required levels of competence for each course output.

### **2.3.1.7 Metacognitive support**

Metacognitive support refers to the cognisance of goals and the ability to plan and evaluate strategies for learning, as well as the ability to monitor progress with adjustable learning behaviours to accommodate learners' needs (Reeves & Hedberg, 2003:194).

In this study, one of the aims of the reflection journals was precisely this; by reviewing the students' reflection on their progress, the instructor was able to identify educational gaps early enough, thus enabling the opportunity for focused support and to accommodate learners' needs not only on an individual level but also in terms of the general needs of the cohort that arose during different stages of the year.



### **2.3.1.8 Collaborative learning**

The collaborative dimension can range from nothing to being an integral feature when included where learners can benefit from both instruction and social interactions. Working in groups can allow learners to accomplish more than would be possible when they work alone (Reeves & Hedberg, 2003:194).

In this study, collaboration was an integral part of the course design; students worked in groups on research projects that required extensive collaboration. The peer-review process added another dimension that required collaboration. The wiki space also afforded the students an opportunity to consult their peers, who were able to include multimedia, on how they navigated the learning management system (LMS).

### **2.3.1.9 Cultural sensitivity**

Cultural implications are ever present in every instructional system. Although it is not possible to design a system that is culturally sensitive to every need, it should be designed to be as sensitive as possible. Interactive learning systems should capitalise on the diversity brought by different backgrounds to enhance the overall learning experience (Reeves & Hedberg, 2003:195-196).

Being culturally sensitive means being aware of the differences and similarities that exist between people while not assigning values such as negative or positive, better or worse, or right or wrong (Dabbah, n.d.). Bringing culturally responsive instruction to the table means being aware of the cultural differences of diverse students and executing instruction in a manner that is appropriate and effective (Briggs, 2014). Within this study, especially since it was collaborative, both students and instructors were required to behave in a professional and appropriate manner.

### **2.3.1.10 Structural flexibility**

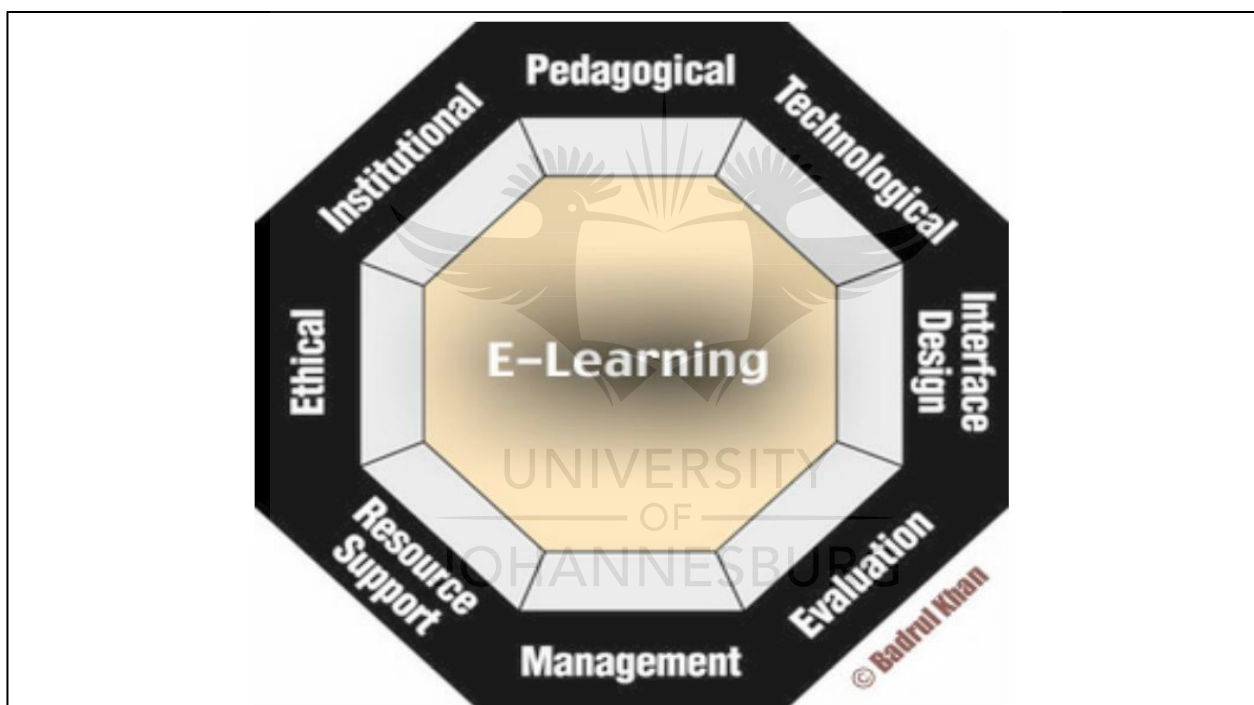
Interactive systems can be designed to be either structured or flexible, where structured refers to available within limitations such as a classroom, a specific time, etc. Flexible systems allow for availability independent of time and place constraints. Flexible systems provide opportunities for more asynchronous learning (Reeves & Hedberg, 2003:195).

In this study, time constraints were applicable due to the high workload required of students to complete the expected outputs (see Section 4.3). Regardless of the time

constraints, other constraints were reduced to the minimum where possible. A level of flexibility was allowed by giving students sufficient timeframes for online tasks, which became available and stayed available for a clearly communicated period of time.

### 2.3.2 Using pedagogical dimensions as an analysis tool

E-learning questions how the attributes associated with the combination of online learning approaches and different technologies can create learning environments that are appropriate for varied learners while still being open, flexible, and dispersed (Khan, 2003:42). Figure 2.3 illustrates Khan's (quoted by Salah, Elsammani & Yousif, 2010:2) e-learning framework. Some of the principles shown correlate with those of Reeves and Hedberg (2003:191), while others introduce other aspects to consider.



**Figure 2.3: A framework for e-learning**

Source: Khan (quoted by Salah *et al.*, 2010:2)

The eight dimensions illustrated in Figure 2.3 are defined in Table 2.1. The institutional and technological dimensions proposed by Khan did not form part of this research and were not considered. The management dimension only partially applied to this research in its concern with information distribution to learners. The pedagogical dimension groups many of the aspects addressed by Reeves and Hedberg (2003:191) separately into one. The ethical dimension proposed considers more categories than Reeves and Hedberg (2003), who only considered cultural sensitivity. An important dimension applicable to this

research is the interface design dimension, which can be seen from the respondents' feedback in, for example, Section 4.4.2.4. The importance of the resource support dimension is also found in respondent feedback, as can be seen in the focus group interview (Section 4.4.3.7), as well as the instructor's feedback in Section 4.4.4.4. Khan (2003:46) further combines the evaluation dimension into not only the assessment of learners but also the evaluation of the instruction and learning environment, which Reeves and Hedberg (2003:191) group as separate dimensions.

**Table 2.1: Eight dimensions of e-learning**

<b>Dimensions of E-Learning</b>	<b>Descriptions</b>
<i>Institutional</i>	The institutional dimension is concerned with issues of administrative affairs, academic affairs and student services related to e-learning.
<i>Management</i>	The management of e-learning refers to the maintenance of learning environment and distribution of information.
<i>Technological</i>	The technological dimension of e-learning examines issues of technology infrastructure in e-learning environments. This includes infrastructure planning, hardware and software.
<i>Pedagogical</i>	The pedagogical dimension of e-learning refers to teaching and learning. This dimension addresses issues concerning content analysis, audience analysis, goal analysis, medium analysis, design approach, organization, and learning strategies.
<i>Ethical</i>	The ethical considerations of e-learning relate to social and political influence, cultural diversity, bias, geographical diversity, learner diversity, digital divide, etiquette, and the legal issues.
<i>Interface design</i>	The interface design refers to the overall look and feel of e-learning programs. Interface design dimension encompasses page and site design, content design, navigation, accessibility and usability testing.
<i>Resource support</i>	The resource support dimension of the e-learning examines the online support and resources required to foster meaningful learning.
<i>Evaluation</i>	The evaluation for e-learning includes both assessment of learners and evaluation of the instruction and learning environment.

Source: Khan (2003:46)

Khan (2003:45) asked: "What does it take to provide flexible learning environments for learners worldwide?" In answering this question, he understands e-learning to be a paradigm shift, innovative of nature, not bound to a closed learning system but rather open and flexible, empowering students to decide when and where they want to learn, with immediate feedback needed on work done in order to continue the learning processes. Khan (2003:45-46) identified numerous factors and grouped them into eight dimensions that can assist designers to create meaningful learning environments. The eight dimensions are institutional, management, technological, pedagogical, ethical, interface design, resource support, and evaluation. Supervision of postgraduate students, and in particular online supervision, certainly also qualifies as an e-learning

environment that can be evaluated using the framework and the pedagogical dimensions listed above.

## 2.4 ONLINE SUPERVISION

Higher education has been observed to embrace Web 2.0 technologies not just to access knowledge, but also to form communities (Section 2.9) of learning and enhance their sustainability. This increased adoption of web technologies to create virtual spaces for learning has reshaped how academics teach, communicate with colleagues, perform research, and supervise postgraduate students. The established profession of supervision may be transformed by these new technologies (Maor, Ensor & Fraser, 2016:172-173). Attraction to digital tools is increasing due to the effectiveness with which they mediate interaction over a distance, and their capacity for recording and storing large numbers of discussions that are available and handy to be retrieved when needed (Al-Shahrani & Mohamad, 2018:352). The use of technology can reduce the repetitive nature sometimes associated with supervision while enhancing the online learning environment. It should, however, be noted that students' attitude will be directly correlated to their computer skills and level of comfort with technology (Mearns & Loots, 2016:255).

According to Maor *et al.* (2016:173), postgraduate supervision has in recent years shifted from a one-on-one relationship to that of a team approach. This lessens the stretches of independent research and affords students contact with a panel of supervisors consisting of members with various forms of expertise, resulting in the emergence of project-based research approaches that move away from the one-on-one supervisor-student relationship. Another suggestion is that there is a shift from a product-orientated thesis to a process-orientated or person-centred to community-centred thesis (Maor *et al.*, 2016:173).

Supervisors must be aware that students may prefer online supervision because of the convenience and flexibility it offers, thereby increasing the use of the platform. It mainly provides a space to meet electronically at any time, which is a beneficial factor for both the supervisor and students. With decent facilities, group supervision can satisfy the needs of students through the effective application of technology (Al-Shahrani & Mohamad, 2018). It is becoming more difficult to separate pedagogy from technology, and with research supervision that can be approached from numerous angles,

technology allows for new ways to continuously emerge. The combination of pedagogy and technology, in virtual spaces, is done to enhance supervision and social interaction between the academic and the learner (Section 2.9). The utilisation of technology may help increase student completion rates, the quality of students' theses, student support, and supervisory relationships, which can result in higher research outcomes for universities, reduced time to completion, and higher rankings on world league tables (Maor *et al.*, 2016:174).

The creation of a robust framework for using web-based tools will help with the feeling of isolation concerning the supervisor process, while also incentivising interaction and allowing supervisors with demanding workloads to function with increasing efficiency (Maor *et al.*, 2016:175). According to Maor *et al.* (2016:178), various technologies are in use today that create entirely new virtual spaces to enable collaborative writing, e-portfolios, and a sense of community (Section 2.9). Designing a platform that improves supervision and increases completion rates requires an understanding of the nature of supervision and the factors that work against it, without which any software implementation runs the risk of repeating high intakes while still achieving low success rates (Maor *et al.*, 2016:179).

The literature ratifies the necessity for web-based platforms that incorporate the combination of technological and pedagogical criteria into a digital pedagogy as the one on its own is not adequate without the other. Web-based tools should be embraced as enablers of complex online interaction but should aim at empowering rather than controlling the process of learning. Virtual spaces should be structured in such a way that they underpin a robust pedagogical framework. These spaces should enable communities (Section 2.9) where interaction and support among peers are possible through online discussion, collaborative writing, and contact sessions. The key to such a space is its sustainability of the members' academic journey while also being an enabling agent for continuous dialogue, reflection, and knowledge co-creation. It is possible to achieve this through the involvement of experts who contribute to the quality of such a space while also providing exposure for future employment. Group supervision, peer learning, and a connectedness approach to supervision have been found to deliver this sustainability. Not to be forgotten, however, is flexibility to accommodate different models of supervision (Maor *et al.*, 2016:180).

If the changes observed over the past few years in the supervision of postgraduate students are an indicator of what can be expected in the future, it is critical that academics change their approach to supervision. It can no longer be assumed, if it ever was, that students have an equal or acceptable standard of research methodological and design skills training, which increases pressure on academics to offer remedial guidance. Furthermore, challenging supervisor-student ratios and a need to compete in a knowledge economy necessitate a creative and innovative approach to equipping students with appropriate skills in research to ease the burden on the supervisor. The design and analysis of an online platform for the teaching and learning of research methodology through collaboration are intended as continuous and foundational support during the supervision process (Mearns & Loots, 2016:266).

## **2.5 E-LEARNING EVALUATION**

This section addresses the evaluation of an e-learning system and focuses specifically on the theories proposed by Reeves and Hedberg (Section 2.3). The researcher found their theories to be more holistic than the theories suggested by Khan (Section 2.3.2). To add value as well as an additional critical voice to the aspects of online communities (section 2.9) and online supervision (section 2.4) is also addressed in this research.

Evaluation of an interactive learning system (in this case an LMS) seeks to determine if it is accomplishing its goals within the immediate context of the implementation (Reeves & Hedberg, 2003:173). When concerned with changing the performance of students and measuring the learning experience, an effectiveness evaluation will determine whether an implemented interactive learning system was capable of achieving the intended goals or not (Reeves & Hedberg, 2003:174). Effectiveness data can be useful in making decisions on adoption, adaptation, and implementation (Reeves & Hedberg, 2003:176).

Effectiveness data come in different formats and can be obtained from different sources such as focus groups, observations, interviews, and other methods (Reeves & Hedberg, 2003:176). Examples of other methods that were used in this study are reflective journals and peer reviews.

When gathering effectiveness data, Reeves and Hedberg (2003:178-179) suggest that the data fall in the following categories:

- **Knowledge:** Knowledge can be presented in many forms, and much of it is conceptual.
- **Skills:** Skills can be quite diverse, and can be described as a spectrum of internal states of cognitive psychology starting with “simple propositions, proceeding through schemas, rules, general rules, skills, general skills, automatic skills, and finally mental models”.
- **Attitudes:** This is perhaps the outcome that is the most difficult to measure as it incorporates humanoid aspects of values, morale, motivation, and prejudices. There are also self-reported attitudes versus real attitudes. People can be deceitful, or unsure or unable to express their attitudes.
- **Appeal:** If learners enjoy using an interactive system, it creates internal states that support learning.
- **Implementation:** This refers to the actual programme that was implemented; problems such as power failures and other unplanned disturbances can have a positive or negative impact on any best-laid implementation plan. It is therefore essential that the system is evaluated with a degree of variance to ensure one measures the designed system as opposed to an alternative version thereof.

Reeves and Hedberg (2003:180) recommend that a plan be prepared and documented before considering any facet of evaluation. This plan must describe why and how the evaluation effort is to be undertaken. A substantial advantage of a documented evaluation plan is that it can be appropriately reviewed. Another important aspect is to evaluate the data-collection methods by evaluating the chosen methods against their purposes, considering the “acceptability, feasibility, reliability and validity of each method in reference to each question” (Reeves & Hedberg, 2003:181). The following is a list of methods that can be used to collect effectiveness data:

- **Implementation logs** are handy in effectiveness evaluation because they are essential to understanding the composition of the interactive learning system to allow for a basis against which to interpret the outcomes being measured (Reeves & Hedberg, 2003:181).
- **Interviews** are potent data-collection tools for obtaining reliable information on the effectiveness of an interactive learning system that provides participants opportunities to voice their opinions rather than responding to questions. They

provide the interviewer the opportunity to adapt the interview questions as the interview progresses (Reeves & Hedberg, 2003:184).

- **Observations** are another useful measure and are a relatively modest measure of effectiveness. The advantage of observations is the richness of the collected data. They are, however, time consuming and labour intensive compared to other measures (Reeves & Hedberg, 2003:186).
- **Automated user tracking** can automatically act as a reliable electronic observer by recording all user interaction with an interactive programme. Analysing the available data from automated tracking can be an enormous task, therefore planning is essential. Most LMSs provide audit trail functions that can provide useful information on a user's interaction and actions within the platform (Reeves & Hedberg, 2003:186).
- **Expert review** can provide insightful feedback to students. The immediate supervisors of postgraduate students can fulfil this role in not only formative evaluation but the effectiveness of the interactive system as well. The type of technology used can also provide an opportunity to obtain instructional experts to review the effectiveness of the system (Reeves & Hedberg, 2003:187).

Using only one or two measures in effectiveness evaluation is not advised. Instead, it is recommended to use as wide a variety of measures as is feasible to triangulate the effectiveness measurement (Reeves & Hedberg, 2003:187).

## 2.6 ONLINE APPLICATION

Information technology developments have played a significant role in addressing the time and space constraints of physical classroom teaching. Internet access provides students with instant contact with research resources, shorter timeframes for processing tasks, enhanced communication capabilities such as direct access to online journals, short turnover on interlibrary loans, the ability to present and distribute surveys, sharing files, and the facilitation of communication between learners and instructors (Ball & Pelco, 2006:148).

To explain the process of learning within a changing digital environment, Siemens (2005:4) suggests "a learning theory for the digital age", i.e. connectivism, which

"is the integration of principles explored by chaos, network, and complexity and self-organization theories. Learning is a process that occurs within nebulous



environments of shifting core elements – not entirely under the control of the individual. Learning (defined as actionable knowledge) can reside outside of ourselves (within an organization or a database), is focused on connecting specialized information sets, and the connections that enable us to learn more are more important than our current state of knowing”.

Connectivism can best be described as a cycle that starts with the individual, who forms part of a network of peers, and their personal knowledge. Through this peer network, knowledge is fed into organisations and institutions, and, in turn, feeds back to the network of peers and thus provides learning to the individual in a continuous cycle. This allows learners to benefit through continued access to current knowledge while remaining in the network (Siemens, 2005:5).

Siemens (2005:5) further categorises connectivism with the following principles:

- Learning and knowledge are rooted in an assortment of ideas.
- Learning is a process that connects diverse information sources.
- Learning may reside external to human applications.
- To know more is of higher importance than current understanding.
- Fostering and preserving links are needed to aid continual learning.
- The ability to identify links between fields, concepts, and ideas is an essential skill.
- Connectivism is rooted in its intent to be current (up-to-date knowledge) and accurate.
- From the reality of a shifting information climate, information received today may be incorrect tomorrow; being able to decide what to learn and what the meaning of incoming information is, is in itself a learning process.

Online learning environments should promote communication and collaboration among academics and students. Through Web 2.0-enabled learning, 21<sup>st</sup>-century skills (see Section 2.2) and learners’ needs can be accommodated and promoted through engagement, collaboration, creation, and construction. The principles on which connectivism is founded can also be found in several Web 2.0 technologies such as Facebook, YouTube, wikis, etc. Online learning environments should allow students to be involved with their coursework by becoming both participants and creators (Reese, 2015:579-580). Wikis are just one example of such a tool that can be used to increase collaboration and act as a forum for group work (Reese, 2015:582).

## 2.7 WIKIS

The potential for using wikis across different disciplines and levels of education, especially concerning collaborative knowledge construction, has made their application popular in the educational sector, and their use for collaborative writing varies widely in application from story writing to group assignments, to name but a few (Du *et al.*, 2016:380-381). Using wikis for collaborative writing involves group work that is intricate and dynamic, mixing individual aspects and group dynamics through task distribution, coordination among team members, and interaction and communication during the co-construction of the work (Du *et al.*, 2016:181).

The pedagogical value of collaboration stems from social constructivist theories of learning, as described by the works of Vygotsky (see Section 2.2). Social constructivists view cognitive development as an individual learning process through interaction and assistance with others who are more capable than themselves, or scaffolding (Du *et al.*, 2016:381). Unlike personal writing, collaborative engagement allows students to review co-created writing and provides peer-level feedback, which improves the writing process (Du *et al.*, 2016:382).

Collaborative writing allows for the division of labour, which allows differently skilled individuals to pull together in contributing effectively to the completion of tasks.

The allocation and organisation of work in collaborative writing can be done in the following five ways:

- **Single-author writing**, where one member represents the group and produces the document alone.
- **Sequential author writing**, where each member writes a portion of the document and then passes it to the next person.
- **Parallel writing**, where the writing is divided into parts and each person writes their part simultaneously.
- **Reactive writing**, where each member reacts to and reviews one another's portions to contribute to the final work.
- **Mixed-mode writing**, which is a combination of two or more of the above methods (Du *et al.*, 2016:382).

Wiki-based tools allow users simultaneous access, versioning, track changes, and commentary, all of which enable collaborative writing. Wiki tools are seen as a viable platform for collaborators' instant access to the most current edition of joint work, serving as a pervasive means to coordinate writing efforts. Simultaneously, educators have access to every version written, which enables them to engage, through scaffolding, with support outside of time and space constraints (Du *et al.*, 2016:382). This form of collaborative writing supports the concept of produsage as defined by Bruns (2008:9), which was introduced in Section 1.2.

## **2.8 REFLECTIVE JOURNALING**

The notion of ongoing reflection is fundamentally part of a community of practice that intersects the knowledge and experience of others (Ng & Pemberton, 2013:1525). Teaching self-awareness and relationship skills can be achieved by letting students reflect on both their interactions and responses to encounters (Clydesdale, 2016:3). Alternatively, metacognitive theory, which was first defined by Flavell (quoted by Blessinger & Carfora, 2014:56) as “one’s stored knowledge or beliefs about oneself and others ... about tasks, about actions or strategies, and about how all these interact to affect the outcomes of any sort of intellectual enterprise”, rather falls within two categories, namely self-understanding and self-regulation. Acknowledging the limitations of lecture-based methods poses the question if sufficient structured learning opportunities exist to teach learners interdisciplinary thinking, problem solving, teamwork, and communication, which are all tasks required from them upon entering the business world after graduation (Gibson, Hauf, Long & Sampson, 2011:285). By keeping a journal that reflects on day-to-day interactions, learners benefit from translating theory into action, which enables self-critique and intelligent analysis of thoughts and feelings (Clydesdale, 2016:3).

Collaboration can be applied to research learning through peer interaction, supervisor engagement, and any person who shares the same set of interests as long as it promotes interactive communication and development. Online reflective journaling provides students with the opportunity to think and search for information that supports their own reflection, as well as the views of others. This provides a process for scaffolding that includes communication on interpersonal and academic matters, which include different modes such as pictures, audio, and written text. It can be argued, according to Dewey (quoted by Le, 2012:58), who is the father of experiential education,

that reflection within collaborative learning brings not only individual growth but also a development of social values.

During self- and peer assessment, students reflect on their learning behaviour while also adjusting said learning behaviour in order to achieve previously set goals, thereby acting as motivation for improving their learning behaviour (Liang, Chang, Shu, Tseng & Lin, 2015:2). Within a collaborative learning environment, the self-reflective and critical reflective journaling purport to empower students with the ability to gain a greater understanding of practical knowledge (Cvetkovic & Chandran, 2013:3). Reflection aims to analyse the current situation and use the findings to change or enrich said situation or similar future encounters, thus creating an environment for constructing knowledge and improving learning. Reflective activities give students more personal responsibility with a higher awareness of their cognitive processes (Yilmaz & Keser, 2016:164).

Learning activities that are orientated towards constant reflection on what is being learned, how learning is taking place, as well as how this learning is reconstructed, serve as indicators of reflective skills. Indicators for aspects of thought through inquiry and debate show justification and reasoning. Lastly, pointers for critical thinking demonstrate new ideas and decision making (see Figures 4.5 and 4.6). The value of reflection for students lies in the effect that it has on them when they realise that the career implication lies in them being active agents and lifelong learners. Vygotsky's cultural-historical approach (see Sections 1.2 and 2.2) shows that reflective thinking has a social beginning and a facilitated structure. Activities that pursue reflective thinking should provide conditions that allow awareness of actions and surroundings. Tasks should therefore involve conscious design and deliberate organisation, allowing students to complete them with high levels of fulfilment (Sánchez-Martí, Puig & Ruiz-Bueno, 2018:14).

## **2.9 ONLINE COMMUNITIES**

Postgraduate research is not without its difficulties; communities of practice can address some of these issues, such as feelings of seclusion and the need to keep momentum over extended periods of time (Wisker, Robinson & Shacham, 2007:306). A community of practice is formed when people “engage in the process of collective learning in a shared domain of human endeavour” (Wenger-Trayner & Wenger-Trayner, 2015:1) for example online supervision (Section 2.4). Thus, a community of practice can be seen as a group of people who have a shared or common goal, regular interaction, and benefit

from improving their abilities. This definition can be extended to a group of people who come together with the desire to learn something, although not necessarily assumed. The three fundamental characteristics needed for a community of practice must be present, namely the domain, the community, and the practice (Wenger-Trayner & Wenger-Trayner, 2015). Postgraduate supervisors and students who develop and share ideas, and subsequently build good practice over time, can be identified as communities of practice (Wisker *et al.*, 2007:306).

Communities of practice allow for sharing of knowledge other than the formal hierarchies found in larger institutions and are particularly relevant to universities, which constitute a sector mostly composed of knowledge workers who embrace a different kind of authority and success dependent on creativity and intellect. In addition, the knowledge of academics is not solely individual in nature but also collective, with the interaction between colleagues and other researchers being a promoter for stimulating research (Ng & Pemberton, 2013:1526). When members engage with one another by sharing their experiences, they acquire skills because of engaging in the process and reflecting on their practices. Communities are acknowledged as being an effective mechanism to nurture collaboration, thereby increasing the speed and productivity of knowledge diffusion, which brings with it living repositories of knowledge (Ng & Pemberton, 2013:1525).

## **2.10 RESEARCH METHODOLOGY IN AN HONOURS QUALIFICATION FOR THIS STUDY**

Many introductory textbooks on research methods provide students with the popular methodologies and techniques used by social scientists (Ball & Pelco, 2006:1247). While conducting a content analysis, Onwuegbuzie and Leech (2005:276) found that most authors of modern research methodology textbooks identify seven steps within the research process that are also found in research methodology courses, namely:

1. Formulation of the research problem and/or objective;
2. Developing the purpose, research questions, and hypotheses;
3. Choosing the research design and/or method;
4. Data collection;
5. Analyses of the collected data;
6. Interpreting and/or validating the data; and

## 7. Communication of the findings.

By being flexible in investigative techniques when addressing research objectives, students are encouraged to collaborate more with other researchers (Onwuegbuzie & Leech, 2005:290). Aiming to encourage self-directed learning leads to increased motivation, which fosters critical reasoning and problem-solving skills, while also developing a better understanding of processes and skills needed for working in a collaborative setting (Ball & Pelco, 2006:148).

Getting students to participate in group-based research is an excellent way to teach research methodology, which incorporates recent pedagogical and technological innovations to which students respond well (Ball & Pelco, 2006:153). It also provides a more interesting and stimulating experience to teach instead of a traditional lecture-text format (Ball & Pelco, 2006:153). Learning objects are usually assumed to be digital entities, which can be delivered via the Internet, while reusable objects are any digital media that can be used and reused as a resource for learning (Wiley, 2014:3). However, the question arises on spaces where students' created products are recorded and archived for further reference and to serve as reusable learning objects, as in this case with the creation of wiki entries. Such spaces exist as electronic repositories.

### 2.11 KNOWLEDGE REPOSITORIES

Knowledge practices in higher education are commonly seen as the generation, modification, assessment, and challenging of knowledge by academics, including assistance to others who engage with it (Fenwick & Edwards, 2014:36). Systems used for knowledge management are tools geared at supporting the processes involved with the application, creation, storage, retrieval, sharing, management, and the flows between these processes, which provide the functionality that facilitates knowledge creation and usage thereof, as well as the communication and collaboration needed among organisational members. A non-virtual community of practice is possible, although almost all current KMSs are based on information technologies. This was mostly necessitated by the amount of knowledge that must be captured, stored, and shared; the geographic distribution of members; and lastly by dynamic knowledge evolution (Pinto, 2012:2078). It is also essential that a KMS supports the individual's learning experiences through the content, as well as the activities (Pinto, 2012:2079).

A framework for such a system requires different layers that involve technological infrastructure, KMSs, and processes. The infrastructure functions as an enabler tool that allows interactive and collaborative communication between the different members, such as learners, instructors, and researchers. The creation of knowledge involves developing existing content and generating new knowledge through activities related to research, development, and learning. Collaborative systems support teamwork, which increases contact between members and helps accelerate knowledge creation (Pinto, 2012:2080).

The next section investigates how collaborative efforts from online communities and the knowledge created from those efforts can become a valuable source of knowledge for people who are at different stages of development.

## **2.12 BENEFITS OF ONLINE COMMUNITIES AND KNOWLEDGE REPOSITORIES**

To be part of an online research-based community of practice not only allow learners to benefit considerably but the organisation as well since it promotes research and socialisation, and creates an alternative path for professional development. This provides valuable development options outside of the formal structures of the institution by improving individual research abilities while affording opportunities for gaining new knowledge and staying at the forefront of changes in the discipline. Furthermore, institutions benefit from this form of centralisation, which sees members across different academic disciplines function democratically, and enabling knowledge flow that is optimally focused on research. Institutions are also able to capitalise on expertise and the further development of intellectual capability and capacity by bringing together individual motives and institutional goals (Ng & Pemberton, 2013:1535).

Research suggests that a community of practice can behave like a living repository of knowledge by embracing individuals who are at different stages of development regarding their research ability, allowing less-experienced individuals to learn as they participate. This also provides opportunities for reflection and interaction that stem from situated experiences, thus supporting increased research capability in a conducive environment. It also overcomes isolation issues that are associated with solitary research by providing a process where knowledge is exchanged, evaluated, and integrated with others (Ng & Pemberton, 2013:1536).

Within this study, a community of practice established through wikis (see Section 2.7) and peer reviews (see Sections 2.5, 4.3, and 4.4.1) explored the idea of an online

research-based community to further improve individual research abilities and provide opportunities for gaining new knowledge. The introduction of group work in this course (see Sections 2.10 and 4.3) aimed to provide valuable development options by supporting learners with knowledge creation while they participated and overcame the isolation experienced in solitary research. These aspects become evident in the findings discussion chapter (Chapter 4).

### **2.13 CHAPTER SUMMARY**

This chapter aimed to underpin the pedagogical theory that supports higher education learning with specific application of Web 2.0 technologies and the required 21<sup>st</sup>-century work skills. The chapter started with traditional education pedagogy, which was followed by pedagogical dimensions that are friendly to online and blended learning environments. Next, the chapter reflected on supervision in an online environment, followed by an evaluation of interactive learning systems. The second half of the chapter investigated specific Web 2.0 tools; starting with wikis, reflective journaling, online communities, and knowledge repositories. The chapter ended with the benefits of communities and knowledge repositories. The chapter showed that the appropriate application of technology could enhance and complement the learning environment, which creates several advantages.

The following chapter discusses the research design, paradigm, methodologies, as well as the research strategy applicable to this study.



## **CHAPTER 3: RESEARCH DESIGN**

### **3.1 INTRODUCTION**

The success of research in creating new knowledge is situated in the selection of appropriate paradigms and methodologies, followed by the ethical and procedural collection of data and the analysis thereof. Chapter 3 focuses on the discussion of pragmatism as an appropriate philosophical paradigm for this research study, followed by the research paradigm for which DBR was chosen, and, lastly, the implementation of suitable methodologies applied to these paradigms.

### **3.2 PHILOSOPHICAL PARADIGM: PRAGMATISM**

Knowledge inquiry stimulates different inherent commitments and assumptions, giving rise to different approaches that stipulate appropriate, acceptable, or valid forms of methodology. Therefore, the methodological consideration of any research conducted cannot be separated from an underpinned philosophical foundation (Brennan, Voros & Brady, 2011:103). According to Brennan *et al.* (2011:103), a paradigm can be defined as a set of beliefs that represent a worldview which for the viewer defines the landscape of that world, the viewer's place, and possible relationships to that world and its parts. In this study, the philosophy of pragmatism was followed, which evaluates theories or beliefs on the success of their practical application while stressing the priority of action over doctrine ideas, which are derived from consequences and truths from their verification (Thayer & Rosenthal, 2016).

According to De Loo and Lowe (2011:23-24), different rationales influence the researcher's choice of research methods, namely paradigms, pragmatics, and politics. Thus, researchers should be free to choose between or even from different paradigms provided that they can clearly explain the choices made. It is further advised that the type of research conducted is defined clearly with an open mind towards one's interpretations, as well as doubts (De Loo & Lowe, 2011:28). Despite alternatives, interpretivism and qualitative research are usually associated with each other. Within information systems, qualitative research can follow a pragmatist approach that is related to action, intervention, and constructive knowledge (Goldkuhl, 2012:135). Since it is required of the researcher to point out a clear vision concerning paradigms in order to provide a

foundation of philosophical, theoretical, instrumental, and methodological underpinning (Alghamdi & Li, 2013:1), the philosophical paradigm chosen for this research is pragmatism.

Almeder (2015:26-27) characterises pragmatism as follows:

- Pragmatism is to most a theory of knowledge that construes the pursuit of human knowledge as a belief-forming endeavour, where humans adapt to their environment. For humans to adapt, they need instruments or mechanisms to adapt successfully. This can be found in beliefs and systems of belief, which allow the process of human inquiry “to pass from a state of not knowing how to respond to the world” (Almeder, 2015:26) to a state where beliefs are formed that provide ways to successfully adapt to this world.
- The tenets of proofs and norms of acceptance for different convictions about the world are only substantial to the degree to which they create beliefs that are fruitful in their ability to meet our more profound natural needs by successfully manipulating our environment.
- All convictions and frameworks of conviction are inexact and subject to general revision. In light of incoming or ongoing confirmation and vacillations in the rules for examining evidence, the certainty value assigned to a set of convictions is subject to review or even withdrawal. For the pragmatist, there are thus no eternal truths, and all truth values around propositions in this physical world are not immune to revision in light of future confirmation.
- Natural sciences provide the only strategy to determine which convictions regarding the physical world are true or not. With any proposition about the physical world, the only criterion for meaningfulness is either justifiable or falsifiable under those methods. This is because it is the only method that is fruitful in enabling people to adjust to the changes and powers of the physical universe. The only test for this strategy of procuring conviction lies in the ability of the application of that technique to produce convictions that enable people to adapt in the long term.
- Some human information is an autonomous external world. The presence of this world is neither reasonably nor causally subordinate to the presence of any number of human minds; basically, if there were no psyches, there would still be a world that contains physical entities with different identifiable properties.

### 3.3 PRAGMATISM AND INTERPRETIVISM IN QUALITATIVE RESEARCH

Actions and change form the essence of a pragmatist ontology, where humans act in a world that is in a steady condition of becoming. The essence of society, in turn, lies in a continuing process of activity in a postulated structure of associations. Any structure of relations between individuals without action remains meaningless. Without the grasp of action, any society remains misconstrued; thus again highlighting the importance of actions within pragmatism (Goldkuhl, 2012:139).

As Dewey (quoted by Goldkuhl, 2012:139) states, the role of action is that of an intermediary because it is

“the way to change existence. To perform changes in desired ways, action must be guided by purpose and knowledge. The world is thus changed through reason and action and there is an inseparable link between human knowing and human action”,

which can be described as activities, and their results are key to cognitive growth and elucidation.

One of the underlying thoughts within pragmatism is that the significance of a thought/idea relies on the practical outcomes of that thought/idea. In this manner, the significance of a concept can be depicted as the distinctive activities directed, given the conviction of the thought/idea. Peirce (quoted in Goldkuhl, 2012:139) formulated the following pragmatic principle:

“Thus, we come down to what is tangible and practical as the root of every real distinction, no matter how subtle it might be; and there is no distinction of meaning so fine as to consist in anything but a possible difference of practice.”

Qualitative research, based on the social world of people, which is full of subjective and shared meanings, cannot be approached from a purely pragmatic paradigm. It requires a level of interpretivism from the researcher, by imposing their meaning-constructs in order to make sense of the results and findings (Goldkuhl, 2012:137).

Understanding people’s subjective meanings within studied domains is essential in the interpretive paradigm. Through acknowledgement, reconstruction, understanding, and non-distortion, these meanings are meant to be used as building blocks when theorising (Goldkuhl, 2012:137-138).

Understanding and contextualisation are intertwined in interpretivism through interpretation ontology and epistemology. Knowledge through reconstructive understanding and meaning is vital for assumptions made regarding the composition of the world. With interpretivism, the researcher's objective is to generate knowledge through processes of interpretation of the social context of the area being studied, and transforming it into meaningful data where the researcher becomes an interpreter and co-producer (Goldkuhl, 2012:138).

### **3.4 INQUIRY AND CONSTRUCTIVE KNOWLEDGE**

The concept "inquiry" is defined by Dewey (quoted by Goldkuhl, 2012:139) as "the controlled or directed transformation of an indeterminate situation into one that is so determinate in its constituents, distinctions and relations as to convert the elements of original situation into a unified whole". The process of inquiry can be seen as a distinctive human trademark that aims to improve our condition by adapting and accommodating the world. Inquiry can thus be seen as a type of investigation of reality with the motivation to create knowledge for a controlled change within this reality. This intertwines cognitive and applied interests, which have been criticised for not having a clear distinction between science and non-science. For Dewey (quoted by Goldkuhl, 2012:139), however, the practicality of pragmatism should be interpreted as the systematisation of people in their effort to enhance their circumstances. Inquiry should thus be seen as a human root element and not as unmistakably independent (Goldkuhl, 2012:139).

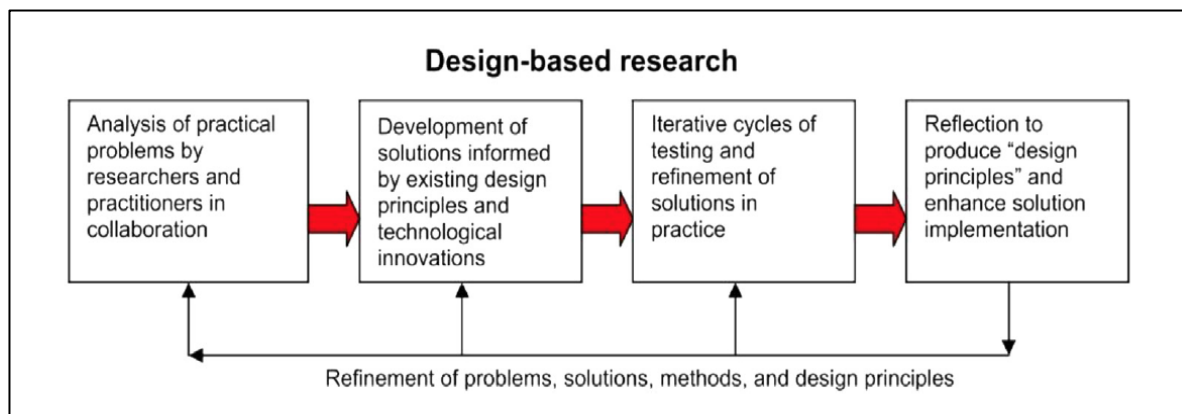
Pragmatism proclaims that the relevance of concepts lies in their ability to support action; alternatively worded as finding meaning (Saunders, Lewis & Thornhill, 2012:130) behind the practical consequences of an idea (Creswell, 2003:6). The pragmatist's view is that the world can be interpreted in different ways; thus, when undertaking research, no single perspective or view can be adopted to provide one accurate reflection of a research undertaking. This means that there are multiple realities that allow reliable, well-founded, consistent, and pertinent data to be gathered, which advances research towards finding a practical solution and enabling the pragmatist to approach a research problem from different philosophical positions (Saunders *et al.*, 2012:130). The ontology best applied to pragmatism allows researchers to answer their research questions through external or multiple views (Saunders *et al.*, 2012:140), for example DBR.

Behavioural science has been a popular perspective from which to approach the research of information systems; there is, however, an increasing consciousness of the significance of DBR because it helps to eliminate the disparity between scholarly research and practice. DBR allows for knowledge to be co-created in an interdisciplinary, problem-focused, and context-sensitive environment. Knowledge is thus characteristically produced while dealing with a genuine issue, in a real setting, thereby increasing the relevance of the research and providing output that is field tested (Helfert & Donnellan 2011:1-2), which allows DBR to be a viable paradigm for this research.

### **3.5 RESEARCH PARADIGM: DESIGN-BASED RESEARCH (DBR)**

DBR is a well-used approach within the learning sciences; it depends on triangulated sources of evidence that are both measurable and qualitative. Although the approach uses established means for sampling, data collection, and inquiry, the goals that it puts forth let it stand out from other approaches. It is defined as an orderly yet malleable methodology that allows for improvement of educational practices through inquiry that is iterative in all aspects of design, development, and implementation from real-world collaborative efforts (Smeyers, Bridges, Burbeles & Griffiths, 2015:1220).

It can be argued that the selection of techniques and the emphasis on authentic and meaningful issues in DBR reverberate with a pragmatic philosophical viewpoint. Design practice typically progresses through the formation and assessment of several models that undergo refinement and continuous evolution through an iterative cycle while being tested in practice. With DBR, the design and implementation of attempts are rarely perfect, with potential room for improvement being discovered during each evaluation cycle (Anderson & Shattuck, 2012:17). Because DBR does not cease until the desired levels of problem resolution are attained (Reeves & McKenney, 2013:4-5), this iterative process is but one of the challenges faced by DBR in deciding when the research is completed, if ever (Anderson & Shattuck, 2012:17). Powerful insights are obtainable for educational research in a given intervention, as data flowing from different iterative cycles of testing and modifying of the intervention coupled with regular exchanges between project participants for intervention refinement and the coalescence of design principles (Reeves & McKenney, 2013:5-6). An outline of DBR is illustrated in Figure 3.1.



**Figure 3.1: The DBR cycle**

Source: Amiel and Reeves (2008:34)

DBR is mostly agnostic concerning epistemological challenges and the selection of methodologies, typically allowing mixed methods and a diverse set of tools and techniques to perform research (Anderson & Shattuck, 2012:17). Pragmatism allows for several methods, various worldviews, and different assumptions, including several practices for data collection and analysis within a mixed-methods approach, to be used (Creswell, 2003:12). Within pragmatism, the idea is not to commit to one system of reality or philosophy, which is similar to a mixed-methods approach, which allows the researcher to draw from both quantitative and qualitative assumptions while engaging with the research (Creswell, 2003:12). DBR is one such strategy.

The origin of DBR lies mostly in response to the absence of a theoretical base when designing and creating mediations to enhance learning and in the lack of assessment studies in true settings. This approach to research is appropriate for designing new educational learning materials since it removes the boundary between design and research, as well as providing theoretical contributions and practical solutions (Smeyers *et al.*, 2015:1220).

According to Smeyers *et al.* (2015:1221), the most significant reasons for selecting a DBR approach are as follows:

- Provisioning of productive outlooks for concept development, since it begins with a defined concept and provides variations to the concept, spanning from the evaluation of the design it was based on and ending with context-specific guidelines. The goal-orientated nature of DBR also guides concept development.

- In terms of the usefulness of results, DBR provides practical solutions that researchers can use immediately in the learning context, providing guidelines for similar interventions.
- It directly involves the researcher in the improvement of education. Where previously in the hands of publishers and experts, the researcher can now directly influence the development process.
- Ecological validity is ensured from the use of real-life settings with high generalisability to ensure usability in the classroom.
- Lastly is the fulfilment of proper research norms in general, such as the expression of clear goals, research questions, providing growing and methodical behaviour for the gathering of evidence, and allowing the use of appropriate research methodologies.

Undeniably, the role of interpretation is of great importance in any research. It is this interpretation of the context that guides a researcher in deciding which research approach is best suited. This interpretation decides on the measurement tools, while participants in turn also interpret the questions posed in these tools, which again influences the results. Those results are then again interpreted by the researcher. Finally, when reporting on the results, it is again the researcher who decides which results are exciting and worthy of inclusion (Smeyers *et al.*, 2015:1231).

With DBR, it is particularly of significance to recognise the role of interpretation. One reason for this is the close connection the researcher has with the design process, and the conflict of interest this may cause. Some argue that the outcome cannot be other than biased, while others claim that this bias, together with insights and understanding by the researcher, provides the best research tool. Another consideration from an ethical point of view is whether researchers, because of their involvement in the design process, should be allowed to intervene when they observe a problem or stand back to minimise their impact on the outcome of the research (Smeyers *et al.*, 2015:1231). Pragmatism is not only concerned with action and change but also the interaction between information and activity. This makes it suitable as a basis for research approaches that mediate the world and not merely observing the world (Goldkuhl, 2012:136).

It is noteworthy to mention that while the impact of interpretation is vital in an individual study, it is the accrual of these interpretations and the impact of the conclusions during the different steps of a DBR that further inform this impact. Since various studies are

frequently conducted consecutively, the consequences of each study affect the setup of the following study, which results in a significant effect on the progress of a study and its final results. However, as expressed before, it is contended that because of the intimate involvement of the researcher in all the steps and that interpretation is inherent to all research, it should not prevent or restrain research from being conducted (Smeyers *et al.*, 2015:1231).

DBR aims to improve the influence and transfer of educational research to generate pragmatic and generalisable interpretivist design principles (Wang *et al.*, 2014:104) through robust and effective interventions with the focus of research being how to make something work and why it works (Reeves & McKenney, 2013:4). DBR can be characterised as follows:

- Positioned in a real educational context;
- Focused on the design of and testing a significant intervention;
- Adopting mixed methods as a guide for educational refinement, through multiple iterations in finding the best design; and
- To promote collaboration between researchers and practitioners (Wang *et al.*, 2014:104).

The selection and creation of an intervention begin with the evaluation of the local context, which is further informed by relevant literature (Anderson & Shattuck, 2012:16), theory (Reeves & McKenney, 2013:5), and practice from others with a specific objective to overcome a particular problem or creating an improvement in current practice. The intervention can take many forms, one of which is technological. For an intervention to be effective, it is suggested that the following four characteristics must be aligned: “frameworks for learning, the affordances of the chosen instructional tools, domain knowledge presentation, and contextual limitations” (Anderson & Shattuck, 2012:16). Another outcome of DBR that is not widely acknowledged is professional development (Reeves & McKenney, 2013:5). In order to align the four characteristics as suggested, the following research methodology is suggested.

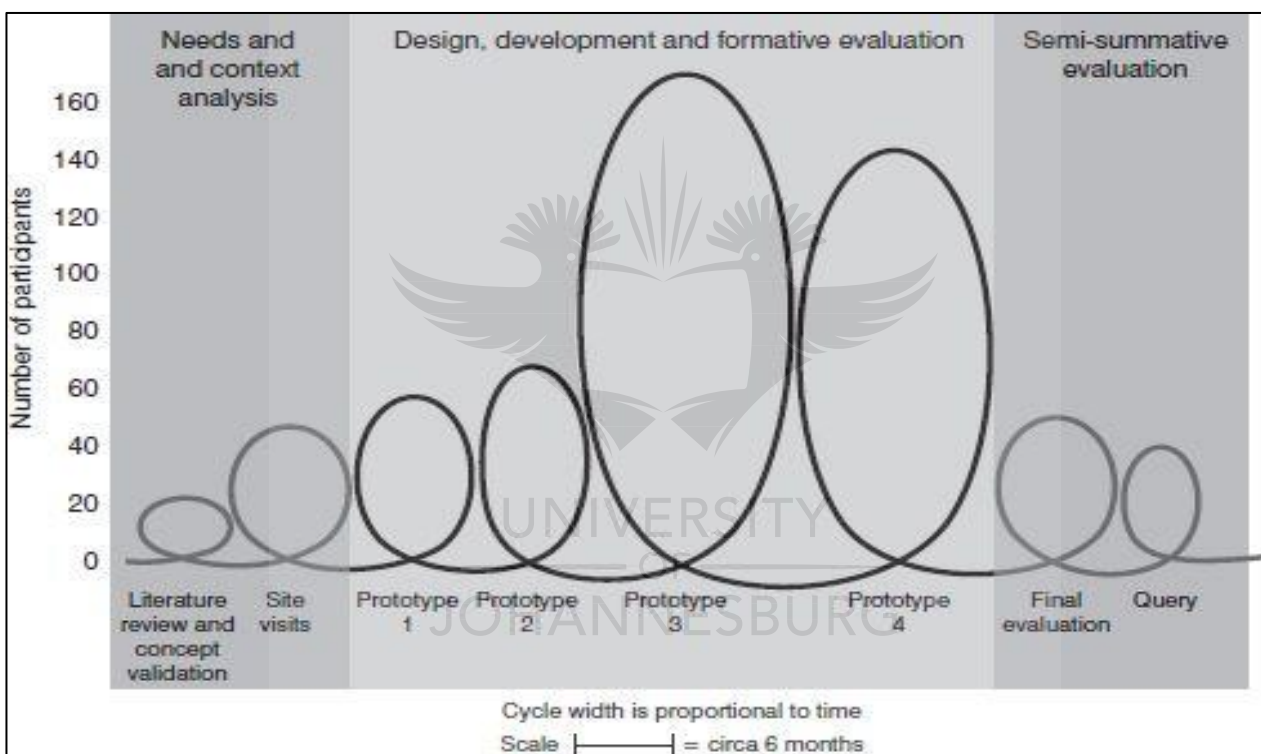
### **3.6 RESEARCH METHODOLOGY AND STRATEGY FOR THIS STUDY**

In order to conduct the research, two cohorts of students, starting in 2016 and ending in 2017, were identified as viable subjects. The prototype underwent two cycles of refinement, as illustrated in Figure 3.2, concerning the coursework composition.



Starting with the findings from the prior research completed in 2014 (see Section 1.4), the researcher revisited the needs and context with the instructor. The second refinement occurred after reviewing the feedback received from the first group of students.

The data collected during both iterations were compiled using a qualitative approach. A focus group interview was held with students from the first iteration in 2016. The interview contained a list of prepared closed- and open-ended questions (see Appendix C). The questions varied between the different aspects of the course, which contributed as a whole to address the research questions. To ensure that reliable data were produced and any bias was controlled, the interview was subject to audio recording for dependable data analysis (Saunders *et al.*, 2012:374-375).



**Figure 3.2: Prototype approach to the development of an online collaborative platform knowledge repository**

Source: McKenney and Van den Akker (2005:49)

Several methods were applied to collect, sample, and analyse the data. The methods included student reflective journal writing and peer-review groups after the implementation of selected iterative interventions from various prototypes. This research concentrated on the four reflective journal entries provided by the students and the instructor, one focus group interview in 2016, and four reflective journal entries from the 2017 students.

### **3.7 QUALITATIVE APPROACH**

Qualitative research in its broadest sense addresses inquiry that is concerned with understanding the meaning and experience dimensions of humans' lives and social worlds. Proper qualitative research illuminates the instinctive meanings, actions, and societal contexts as understood by participants (Fossey, Harvey, McDermott & Davidson, 2002:717). A qualitative study is concerned with the intricacy of humans and their ability to shape and create their experiences. Emphasis is thus placed on understanding the human experience, which is achieved through the careful collection and analysis of qualitative materials that are narrative and subjective. As a result, qualitative studies are abundant, with in-depth information that can reveal varied dimensions of a complex phenomenon (Polit & Beck, 2004:16-17).

#### **3.7.1 Sampling and participants**

When working with qualitative samples, they tend to be purposive rather than random. Sampling in qualitative research involves two directions. The first is to identify the confines that describe the traits of the case about the research questions and which can be studied within the time and means available. The second is to create a conceptual framework that helps uncover, confirm, or qualify the research (Miles, Huberman & Saldaña, 2014:31).

Purposive sampling is a non-probability sampling technique focused on the individualities of a specific population that collectively address the objective of the research undertaken. It is a useful type of sampling when the researcher is not overly concerned with the proportionality of the sample. There are different types of purposive sampling. The type applied to this research was total population sampling. Total population sampling allows a researcher to choose and examine a population in its entirety – one that shares one or more of the characteristics. This type of sampling technique is used to generate reviews of events or experiences and is typical for studies on individual groups within larger populations (Crossman, 2018).

With purposive sampling, judgement is used to select cases that will best answer research questions and meet the researcher's objectives. It is sometimes referred to as judgemental sampling and is used when working with small samples or when a researcher wishes to select cases that are especially informative (Saunders *et al.*, 2012:287). The reason of "convenience" is applied to the selection of those cases that

are the easiest to access under given conditions presented by specific research (Flick, 2009:122).

Flick (2009:125) further states that sampling decisions cannot be made in isolation, and specifies that no one decision or strategy is considered correct. Instead, the appropriateness of the structure and contents of the sample should inform the sampling. Therefore, according to Saunders *et al.* (2012:281), the chosen strategy, which includes an element of subjective judgement, can only be assessed concerning the research questions posed by the study. Selecting a sample can also be judged regarding the degree of generalisation the researcher is striving for (Flick, 2009:125).

In this study, it is argued that it is crucial to recognise that taking larger samples will not necessarily correct for bias, nor are considerable samples evidence for lack of bias. However, convenience sampling is generally assumed to have a higher probability of generating a biased sample. Thus, if a sample is not representative of the population of inference in some way, the resulting analysis is likely to be biased (Fielding, Lee & Blank, 2017:166-167). To minimise any bias by the effect of a weakly represented sample, the researcher incorporated a level of variance by selecting the entire student population registered for the course in both 2016 and 2017. However, for the focus group discussion, convenience sampling was used and the sample did seem to have greater bias as a result, which is indicated as a limitation of the study in Sections 4.4.3.5 and 5.6.

Using a case study can be unfairly categorised as lacking in rigour but is not inherently flawed – provided that the researcher recognises that it requires a significant amount of effort in being thorough (Mills & Birks, 2014:156). Maylor and Blackmon (quoted by Mills & Birks, 2014:156) suggest that the quality of a case study be evaluated by considering the following criteria, which are reflected on in Chapter 5:

- Is the research conducted systematically?
- Does the story purported by the research make sense?
- Does the evidence support the story presented?
- Does the evidence support another story equally well?
- Does the research show something new?

### **3.7.2 Data collection**

The onus of deciding what constitutes the products of data generation and collection through a process of designation resides with the researcher, as “nothing becomes data without the intervention of a researcher” (Mills & Birks, 2014:42). Working with qualitative data can be messy and fluid because it is not always clear what data are needed to answer the question that is being asked. This translates into adopting a flexible approach so that the situation can be understood fully. Qualitative research is chosen for situations that are likely to produce complex records that cannot be reduced without risking the loss of valuable information due to simplification. The situation is to be understood in its given context and cannot be reduced until the researcher can be assured that valuable information will not be lost due to simplification. It is crucial that the situation is understood in its context to reduce the risk of losing understanding (Richards, 2009:34). In order to help maintain and ensure objectivity, the researcher’s supervisors had a constant presence in the online environment, as well as in the oversight of the interview process.

For this research, the data gathered were used to evaluate the prototype that was built on the LMS. The data were evaluated and the results interpreted. For this online community, informed consent was obtained from each of the participants before taking part in the study. Consent was also obtained from the custodian of the university’s Blackboard platform within which the community was hosted (Saunders *et al.*, 2012:234). Ethical clearance was obtained during a Departmental Research Committee meeting on 15 October 2015 and the study was conducted under the ethical clearance code IKM2018\_028\_MEARNS\_LOOTS. In addition to the above, a research review was conducted on available literature to obtain insights into available options and requirements. The authenticity of the literature was verified to ensure that it is representative of the industry (Mouton, 2013:99-101).

#### **3.7.2.1 Reflection journals**

For this research, all the students were sampled for the data interpretation from the reflective journals. The sample comprised 30 students registered for the 2016 intake, and 44 students registered for the 2017 intake. Reflective journal entries were compulsory and each intake submitted four journal entries, resulting in 296 individual journal entries. Burger and Silima (2006:667) propose that for populations of 20 individuals, all

participants should be included in the sample. From the data that were collected, the researcher chose to concentrate on the last reflective journal for each of the two intakes of students. The instructor feedback (see Section 4.4.4), however, considered all the journal entries. This was followed by a focus group interview at the end of the 2016 iteration, which is discussed in Chapter 4.

Participants who reflect on a realistic setting constitute a source of narrative research and comprise a valuable contribution to the practice of education. The advantages of using reflection journals in an educational setting include strengthening the relationship between the instructor and the learner. It also allows for self-improvement of instructors, as well as the learning processes involved (Bashan & Holsblat, 2017:2).

Reflective journals enable students to express the thoughts and changes they experience through the learning process. Not only do reflection journals constitute a necessary means of collecting qualitative data, but also enable the researcher to obtain significant insights that would otherwise not be obtained through other types of data collection. Reflective journals are beneficial to the participant for developing metacognitive abilities and promoting self-orientation, as well as responsibility for personal and collaborative learning. Reflection allows participants to become aware of their thoughts, positions, and feelings related to learning. Another advantage is the connection it creates for the learner between theory and practice. Journals are undoubtedly a useful instructional tool for educators to hear their students' voices (Bashan & Holsblat, 2017:2).

### **3.7.2.2 Focus group interview**

For the focus group interview, the researcher chose convenience sampling as a way to obtain access to willing participants. According to Saunders *et al.* (2012:291), convenience sampling is selecting participants who are easily available. Despite the bias associated with convenience sampling, Saunders *et al.* (2012:291) point out that such participants will often meet the purposive sampling criteria that are relevant to the research aim. From the 2016 intake, six students were selected to participate in the focus group interview.

Different categories of interviews can be considered for qualitative research. The categories range from formalised and structured to informal and unstructured conversations (Saunders *et al.*, 2012:374). For this study, the researcher chose the

category that Saunders *et al.* (2012:375) refer to as a focused interview, which allows researchers to exercise greater direction over the interview while allowing the interviewees' opinions to emerge as they respond to the questions.

With exploratory studies or studies with an exploratory element, it is likely that semi-structured interviews will be included in a researcher's design. Semi-structured interviews are necessary to understand the reasons for the attitudes and opinions of participants. Interviews allow participants an opportunity to participate without needing to write anything down (Saunders *et al.*, 2012:378-379).

When considering data quality issues for semi-structured and in-depth interviews, researchers must consider reliability, forms of bias, generalisation, and validity. Reliability is concerned with the likelihood that another researcher will have similar findings. Researchers should be cognisant of interviewer, interviewee, and response bias. With interviewer bias, the interviewer should take note of his/her tone and behaviour during interviews. Taking part in an interview may be an intrusive process and the interviewees may tailor or omit details from their responses.

For the focus group interview that was conducted (see Section 4.4.3), the researcher specifically considered respondent bias, as mentioned in Section 3.7.1, and did so by correlating the feedback received from the focus group interview (see Section 4.4.3) with the feedback received from the entire group in the form of their reflection journal entries (see Sections 4.4.2 and 4.5.2). Because of the respondent bias observed, the interviewer himself had to concentrate on remaining impartial, and kept his composure during the interview, which required a considerable level of self-constraint. One of the respondents clearly attempted to take control of the conversation and consequently attempted to set the tone on most responses. The respondent continuously contradicted herself while also effectively contributing very little to the discussion. It was also apparent that some of the other respondents became uncomfortable and slightly annoyed with this respondent, not only from observing their facial expressions but also their behaviour, and they started to challenge her, cleverly using humour, slight sarcasm, or providing completely opposing responses. This observed behaviour further necessitated the need to correlate the interview responses with the written journal entries, as mentioned earlier in this paragraph, during the data-analysis stage. The researcher is confident that any bias was sufficiently neutralised by pointing out the contradictions observed during the interview discussion in Section 4.4.3.

### **3.7.3 Data analysis**

Case studies are difficult to present as there are no explicit requirements. Methods of presentation largely depend on the research questions and the methods chosen for data analysis (Mills & Birks, 2014:157).

The principle of obtaining informed consent from the people participating in research is a fundamental element of ethical research. Informed consent requires information about the project to be provided to prospective participants in a sufficient and accessible manner to enable them to decide whether they want to consider taking part. Participants in possession of this information have to participate freely and must be given the opportunity to decline to take part or to withdraw their participation without the implication of triggering adverse consequences for them. The benefits of obtaining informed consent have been argued to contribute to increased research quality since it helps the researcher prepare for the data-collection process by giving more thought to the research, and it increases participants' confidence (Crow, Wiles, Heath & Charles, 2006:83-86).

The researcher followed a phenomenological approach to data analysis. This analysis is informed by intuition and reflection based on intensive and repetitive reading of the collected narratives. Introspection leads the eidetic reduction process. The researcher discovered some common themes related to the questions asked about the different activities throughout the coursework. The themes that appeared in the reflective journal entries helped the researcher discover the meanings in the text. The researcher aimed to discover a theoretical model through these themes that would inform the research questions asked and relate to the experiences documented by the participants (Bashan & Holsblat, 2017:5). The themes were categorised against the categories found in the literature review in Section 5.3, the themes are also analysed in Section 4.6.

## **3.8 CHAPTER SUMMARY**

The objective of this chapter was to relate and discuss the most appropriate research methodology chosen for this research. The researcher decided to approach this study from a pragmatic viewpoint because it fit perfectly from the viewpoint of human interaction with a world that is in a constant state of becoming. DBR was applied because of its reliance on established norms for sampling, data collection, and analysis,

while still being flexible to allow for improvements to the implementation through iterative analysis.

The organisation of this study, with specific reference to the population, data collection, and analysis, was described. This study was organised into two iterations: the first in 2016, followed by analysis of the feedback and refinement of the implementation based on the feedback from the 2017 iteration. Reflective journals were selected as the most appropriate method of data collection for both iterations. A focus group interview was also selected for the first iteration to serve as a confirmation of the data received in the reflective journals and to probe participants on specific findings to provide confirmation to the researcher that the findings were fully understood.

Chapter 4 extrapolates the analysis and interpretation of the findings.





## **CHAPTER 4: RESEARCH ANALYSIS AND DISCUSSION**

### **4.1 INTRODUCTION**

The possibility exists that students who enter research have expectations and preconceptions of learning that do not match that of the research culture they are entering; not only for students but also their supervisors, thus straining student-supervisor relationships, the progress of the research, and the successful completion of a research project. It is conceivable that the transition into a different learning culture with dissimilar learning expectations will result in difficulties to rise to the fore (Wisker *et al.*, 2007:304). This is even more applicable in an Afro-centric institution (University of Cape Town, 2017). Subsequently, the leap into postgraduate studies compels a more complex conceptualisation. Research difficulties at this level go beyond those of mere reading and collecting of data into problematising, creating, and conceptualising (Wisker *et al.*, 2007:304). Therefore, when conducting this study, the techniques and analysis methods were considered carefully against the background of current research literature, examples, and DBR theory (see Figure 3.1).

In this chapter, the researcher discusses the environment in which the study was conducted, as well as the applicable course outline that informed the model conceptualisation, followed by the feedback received for each iteration and how it influenced the prototype development. This also completed Phases 1 and 2 of the DBR model in Figure 3.1. The last section entails a research discussion that aims to provide further insights into the perceptions and potential benefit of using a collaborative platform as a knowledge repository at postgraduate level. The chapter concludes this discussion of the findings mapped against the characteristics found in the literature review in order to provide a consolidated and holistic response to the research problem.

### **4.2 LEARNING MANAGEMENT SYSTEM USED**

Postgraduate supervision takes on four positions, namely expert advisory, quality control, encouragement, and direction (De Beer & Mason, 2009:214). Encouragement within this context addresses research basics through blended learning, constructivism, and locus of control (see Section 2.3). Relaxing control in any of these positions may negatively influence a student's performance. An online environment, which includes peer

discussion forums, encourages students not only to develop but also to produce textual resources for future reference. Blended learning then becomes a plausible solution where blended learning can be seen as a combination of technology, activity, and varied events. “Blended”, from this perspective, refers to instructor-led training that is supplemented with technological sources (De Beer & Mason, 2009:214). During the conceptualisation of this model, these qualities, as well as the items addressed in the literature review, were considered.

For this study, the LMS used was Blackboard Learn 9.1. The reason for this choice was that it was the platform in use by the institution at the time of this study and was thought to be the easiest regarding student administration. The participants were also familiar with this environment from exposure at undergraduate level. The instructor and the researcher were also familiar with the platform and were comfortable in using the tools provided to their optimum capacity.

### **4.3 COURSE OUTLINE**

The course had three primary outcomes in 2016, namely a research proposal, a conference paper, and a conference poster. The students were not required to complete a full research dissertation due to the time constraints of the full qualification and due to the South African Qualifications Framework requirements for an honours study not requiring a dissertation. Instead, to teach them the application of research methodology, they had to complete a proposal, a data-collection tool, and data collection for the said proposal, and develop a conference paper and poster as the write-up component of the research. The collaborative actions were positioned to guide students in the completion of the primary outcomes of the course. The course was presented in a blended format where students had online activities, as well as face-to-face interactions with the instructor. The online platform was structured to present the information logically. Figure 4.1 displays the main headings used to structure the content.

The course is a facilitated process that is offered as a one-year course, through a succession of three compulsory workshops during the first semester and one compulsory workshop in the second semester. The workshops were designed to be working sessions to aid the students with their research projects.

The four workshops covered the following topics:

- Workshop 1: Introduction to the research project
- Workshop 2: Research proposals
- Workshop 3: Research approaches and strategies
- Workshop 4: Journals, conference papers, and posters

The students were expected to complete the following outputs during the duration of the course:

- **Research proposal:** This is a document that guides the research process. It must have a clear researchable problem, identified from a research gap as found in the literature, with appropriate research design and methodology relevant to the field of information and knowledge management.
- **Scholarly conference paper:** In consultation with their supervisors, students must identify a conference for which the conference paper must be prepared. Should the quality of the paper be sufficient, the students will be granted an opportunity to submit their paper to the conference.
- **Conference poster:** The students' research findings were to be prepared and presented in the form of a conference poster, which showcased their findings in a graphical format.
- **Two tests:** Two tests were written before the commencement of Workshops 2 and 3 that covered the pre-workshop preparation work assigned to the students.
- **Five wiki postings:** The wikis were designed as a peer learning process and covered the different research topics required to complete a research proposal. The students were also required to peer evaluate the wikis of their fellow students.
- **Four reflection journals:** The reflection journals were spaced to be completed at the end of specific course milestones. The journal entries were designed to allow the students to take stock of where they were and where they needed to go. It also provided the instructor with insights into the students' frame of being in order to best guide them to complete the course successfully.

<p>▼ <b>16IMA8X08 (16IMA8X11-ILK0607 - RESEARCH PROJECT IN IKM)</b></p> <p>Announcements</p> <p>Research Projects 2016</p> <p>RM Submissions 2016</p> <p>Course Content 2016</p> <p>Conference Paper</p> <p>Poster</p> <p>Workshops</p> <p>Wiki 1</p> <p>Wiki 2</p> <p>Wiki 3</p> <p>Wiki 4</p> <p>Wiki 5</p> <p>Final Research Proposal</p> <p>Reflection Journal</p>	<p>▼ <b>17IMA8X08 (IMA8X11-ILK0607 - RESEARCH PROJECT IN IKM)</b></p> <p>Course Content 2017</p> <p>Announcements</p> <p>Plagiarism check</p> <p>Research Projects 2017</p> <p>Conference Paper</p> <p>Poster</p> <p>Wiki 1</p> <p>Wiki 2</p> <p>Wiki 3</p> <p>Reflection Journal</p> <p>Tests</p>	<p>▼ <b>180IMA8X08 (IMA8X11-RESEARCH PROJECT IN IKM)</b></p> <p>Course Content 2018</p> <p>Announcements</p> <p>Plagiarism check</p> <p>2018 Research Projects</p> <p>Research Proposal</p> <p>Conference Paper</p> <p>Poster</p> <p>Wiki 1</p> <p>Wiki 2</p> <p>Wiki 3</p> <p>Reflection Journal</p> <p>Tests</p> <p>Additional Reading</p> <p>RM Videos</p>
<b>2016</b>	<b>2017</b>	<b>2018</b>

**Figure 4.1: Headings used to structure the course content in 2016, 2017, and 2018**

At the start of the year, a list of research topics was provided to students to choose from, with no more than three students per topic. These students had to work in a group to complete the research proposal but were required to do individual tasks as well. In order to set out a logical flow of work, in the form of a “research journey”, students had to complete five wikis (the reasoning is explained in Section 4.4), perform peer reviews on each wiki entry, and complete four reflection journal entries. For this study, the collaborative and reflective components of their academic year were concentrated on in order to answer the research questions posed earlier. These collaborative and reflective components were the wiki entries, the peer reviews, and the reflective journal. At the end of 2016, a focus group interview was conducted, which is reported on in Section 4.4.3. Figure 4.1 shows how the feedback received influenced the course composition through the two study-related iterations A (2016) and B (2017), as well as the next iteration C (2018) based on the findings from the study.

The remainder of this chapter discusses each iteration; starting with the wiki entries, followed by the peer reviews, the reflection journal entries, instructor feedback, and lastly the focus group interview.

#### **4.4 FIRST ITERATION: 2016**

The 2016 iteration consisted of five wiki entries and four reflection journal entries over the year spanning from February to November. The five wikis were included because of their chosen themes to correlate with the research methods stages as discussed in Section 2.10. The decision to include five of the seven stages for the wiki discussions was due to the close interaction that the instructor and students had during the problem-identification stages of the research as opposed to the other parts of the research process. Four reflection journals were required. Three of these served to support the students' reflection after major milestones of the research process, while the fourth reflection journal was a structured entry required to reflect on the entire year's activities and to reflect on these in hindsight.

##### **4.4.1 Wiki entries and peer reviews**


The wiki topics were chosen to assist students in their completion of the research proposal and were broken into five themes, as follows:

- Wiki entry 1 – Research design
- Wiki entry 2 – Research methods
- Wiki entry 3 – Sampling selection
- Wiki entry 4 – Collecting data
- Wiki entry 5 – Data analysis

The wiki entries were intended to support the students' writing under the principles of produsage (see Section 1.2) and was intended to help them comprehend the content prior to applying it and writing it up in the proposal and conference paper documents. The instructions for each wiki were clearly communicated to the students and included the assessment criteria, as well as how to perform the peer review (refer to Figure 4.2 to view an example of the instructions). Once the students opened the wiki assignment, they were given specific instructions for completing the wiki entry, which included platform-specific steps needed (an example of this is visible in Figure 4.3). The wikis were assessed on a set of criteria, which can be found in Figure 4.4.

For Wiki 1 and 2, example wikis were provided in an attempt to guide the students and to simulate the effect of already having a knowledge repository present. For the remainder of the wiki entries, it was thought that the students would be able to write their own wikis and examples were no longer given. This finding was confirmed by respondents in the focus group discussion (see Section 4.4.3.5).

**Wiki 1**


 **Wiki 1 - Information**


This page contains three links, make sure your are aware of all the requirements for the wiki submission and that you do not miss any of the tasks below.

1. Assessment Criteria for the Wiki.
2. The Wiki assignment, and instructions. (an example of a wiki has also been added and can be seen once you are inside the wiki)
3. The Peer review assignment and instructions.


---


The link for the reflective journal will become available after the peer review deadline. You will find the link in the menu on the left.

 **Assessment Criteria for Wiki Entries**

 **Wiki 1 - Research Design**

**Due date: 8 March 2016 @ 23:59**

 **Wiki 1 - Peer Review**

Attached Files:  [Wiki 1 - Research Design Peer Review Template.docx \(90.081 KB\)](#)

**The due date for your peer review submission is: 15 March 2016 @ 23:59**

1. Download the attached file template.
2. Re save the file with your peer review scores as your student number for example, wiki1\_PR\_2016000000.docx.
3. Submit your review here.

**Figure 4.2: Wiki instructions example**

Source: LMS screenshot

**Wiki Instructions** ^

For your specific research project you have decided on a research design within which you will frame your study.  
As a group you will be well on your way in formulating your draft 1 of your research proposal of which this research design forms a part.

**Instructions:**  
Create a wiki entry in explaining your own research design.  
**Due date: 8 March 2016 @ 23:59**

**Assessment Criteria:**  
This entry will be assessed according to the **ASSESSMENT CRITERIA FOR WIKI ENTRIES** as provided in the worksheets for Workshop 1. [For your convenience it has also been added here.](#)

**Remember:**

1. You may not copy and paste in any way, as your group would have co-authorship on what you have written in your proposal draft.
2. You may also not copy and paste from anywhere on the Web as plagiarism will be tested.
3. Make a meaningful contribution to the learning and understanding of **research design** in this wiki entry.
4. Always reference your work, use the Harvard referencing style. Add your sources at the end of your wiki text.
5. Once you have submitted your wiki it cannot be edited, nor can you submit another wiki.

**Steps to complete your wiki entry:**

1. Click on "Create Wiki Page".
3. Give your wiki a title, followed by your student number in brackets, for making peer review easier.
4. Put your wiki text and references into the content section.
5. Click on submit.

**Figure 4.3: Example of platform-specific instructions**

Source: LMS screenshot

The peer review aimed to motivate the students to read the works of others critically, and to contribute meaningfully so that they can pay better attention to the critical thinking about their own writing. The students were asked to read one another's wikis and to provide constructive feedback in the comments section for each wiki. The students were also given a template to score one another's wikis based on the same assessment criteria used by an expert. The template was then uploaded into an assignment and contributed to their marks. If a student completed the peer review honestly and accurately, they were given the marks. However, students were found to provide peer review scores for deregistered students who did not submit a wiki. The intention of the wiki review by the expert, as well as the peers, was to identify the best wiki entries, which would then be transferred to a knowledge repository to be used and improved on by future students. This task failed to reach its desired outcome (see Section 4.4.3.6) and adjustments were made for the 2017 iteration (see Section 4.5).

Student participation in the peer review aspect of the wikis was limited for Wiki 1; however, from Wiki 2 onwards, their participation increased. This could be attributed to them still adjusting from undergraduate to postgraduate level, as pointed out in the introduction of this chapter. The feedback received in Section 4.4.2.2 also highlights the students' adjustment and realisation throughout the journey.

Wiki entries are assessed by an assigned **expert** (one of the supervisors) **and** as a student you will **peer assess** the wiki entry of each other. Each Wiki entry will therefore have a score equal to the number of students registered in the module plus 1. From all these scores a mean score will be calculated for each wiki entry.

ASSESSMENT CRITERIA FOR WIKI ENTRIES			
	Reader experience	Editing suggestions	Points
A	Professional, outstanding, and thorough; a definitive source for encyclopedic information.	No further content additions should be necessary unless new information becomes available; further improvements to the prose quality are often possible.	7
B	Very useful to readers. A fairly complete treatment of the subject. A non-expert in the subject would typically find nothing wanting.	Expert knowledge may be needed to tweak the article, and style problems may need solving. <b>Peer review</b> may help.	6
C	Useful to nearly all readers, with no obvious problems; approaching (but not equaling) the quality of a professional encyclopedia.	Some editing by subject and style experts is helpful; comparison with an existing featured article on a similar topic may highlight areas where content is weak or missing.	5
D	Readers are not left wanting, although the content may not be complete enough to satisfy a serious student or researcher.	A few aspects of content and style need to be addressed. Expert knowledge may be needed. The inclusion of supporting materials should also be considered if practical, and the article checked for general compliance with style guidelines.	4
E	Useful to a casual reader, but would not provide a complete picture for even a moderately detailed study.	Considerable editing is needed to close gaps in content and solve cleanup problems.	3
F	Provides some meaningful content, but most readers will need more.	Providing references to reliable sources should come first; the article also needs substantial improvement in content and organisation. Also improve the grammar, spelling, writing style and improve the jargon use.	2
G	Provides very little meaningful content; may be little more than a dictionary definition. Readers probably see insufficiently developed features of the topic and may not see how the features of the topic are significant.	Any editing or additional material can be helpful. The provision of meaningful content should be a priority. The best solution for a is to add in referenced reasons of why the topic is significant.	1
H	The article is mostly plagiarised.	The author needs to cite references used and paraphrase writing	0

**Figure 4.4: Wiki assessment**

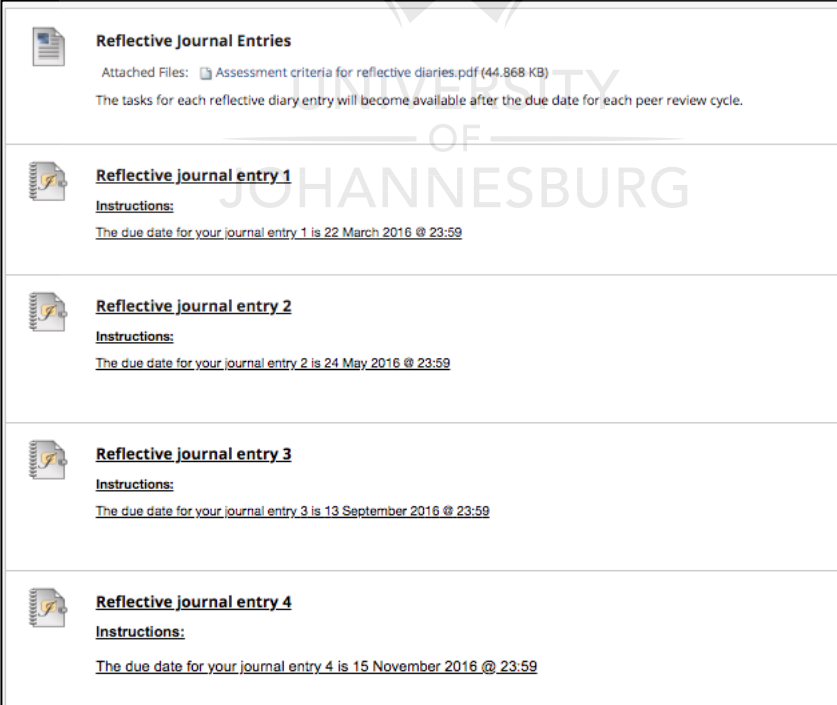
Source: LMS screenshot



#### 4.4.2 Reflection journal entries

The students were required to complete four reflection journal entries (see Section 4.3) during their studies. Reflective journals were used as a technique to help the students learn about the nature of research methodology, and to think critically about the course, their research, and their experiences during the year.

The reflection journal became a place where students had the freedom and trust to vent in a safe place about their whole-person experience. The students also successfully wrote mature solutions to their dilemmas, which enabled them to manage the obstacles very effectively. The reflection journal was assessed according to the criteria listed in Figure 4.7, which were discussed with the students during Workshop 1. From the criteria, it is clear that the students were never assessed on *what* they said per se, and at no time were marks allocated for their expressed opinions. The aspects that were assessed were their ability to reflect on events, present ideas, demonstrate reflective thinking, show evidence of processing, and indicate a statement of result of the learning that had taken place due to the reflective process. The criticisms that the focus group reported in Section 4.4.3.7 regarding receiving marks for opinions were thus unfounded. More on this matter is discussed in Section 4.4.3.7.



The screenshot displays a list of reflective journal entries in an LMS. At the top, there is a section titled "Reflective Journal Entries" with an attached PDF file "Assessment criteria for reflective diaries.pdf (44.868 KB)". Below this, four individual entry instructions are listed, each with a due date and time:

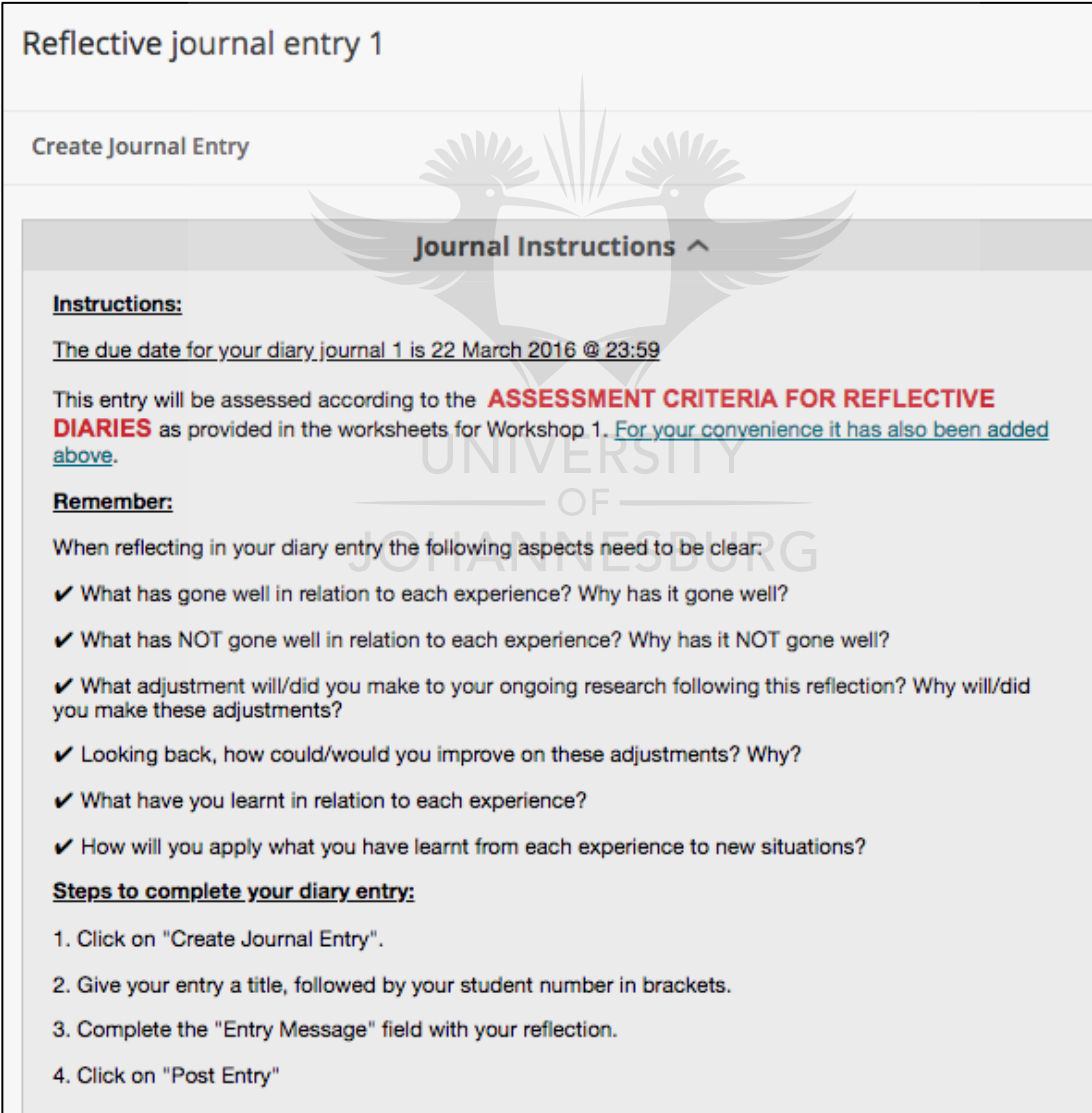
- Reflective journal entry 1**  
Instructions:  
The due date for your journal entry 1 is 22 March 2016 @ 23:59
- Reflective journal entry 2**  
Instructions:  
The due date for your journal entry 2 is 24 May 2016 @ 23:59
- Reflective journal entry 3**  
Instructions:  
The due date for your journal entry 3 is 13 September 2016 @ 23:59
- Reflective journal entry 4**  
Instructions:  
The due date for your journal entry 4 is 15 November 2016 @ 23:59

Figure 4.5: Reflection journal entries

Source: LMS screenshot

#### 4.4.2.1 Reflection Journal 1 to 3 feedback

Instructions were given to students to guide them in completing the reflection journal entries. The instructions for Reflection Journals 1 to 3 were similar, but Reflection Journal entry 4 was slightly different. The aim of Reflection Journals 1 to 3 centred more on self-reflection and as such will not be discussed in much detail by the researcher. Some aspects do, however, require mentioning, and are presented next. The effectiveness of this self-reflection was, however, tested in Reflection Journal 4 and is discussed in Section 4.4.2.2. The instructions for Reflection Journals 1 to 3 are shown in Figure 4.6. The reflection journal entries were assessed by the instructor and counted for some marks towards the students' final grade. The assessment criteria for the reflection journal entries can be found in Figure 4.7.



Reflective journal entry 1

Create Journal Entry

Journal Instructions ^

**Instructions:**

The due date for your diary journal 1 is 22 March 2016 @ 23:59

This entry will be assessed according to the **ASSESSMENT CRITERIA FOR REFLECTIVE DIARIES** as provided in the worksheets for Workshop 1. [For your convenience it has also been added above.](#)

**Remember:**

When reflecting in your diary entry the following aspects need to be clear.

- ✓ What has gone well in relation to each experience? Why has it gone well?
- ✓ What has NOT gone well in relation to each experience? Why has it NOT gone well?
- ✓ What adjustment will/did you make to your ongoing research following this reflection? Why will/did you make these adjustments?
- ✓ Looking back, how could/would you improve on these adjustments? Why?
- ✓ What have you learnt in relation to each experience?
- ✓ How will you apply what you have learnt from each experience to new situations?

**Steps to complete your diary entry:**

1. Click on "Create Journal Entry".
2. Give your entry a title, followed by your student number in brackets.
3. Complete the "Entry Message" field with your reflection.
4. Click on "Post Entry"

Figure 4.6: Reflection Journal 1

Source: LMS screenshot

<b>ASSESSMENT CRITERIA FOR REFLECTIVE JOURNAL ENTRIES</b>	0-44%	Extremely poor
	45-50%	Poor
	51-64%	Acceptable
	65-74%	Above average
	75-84%	Well above average
	85-100%	Outstanding
<b>Purpose.</b> The learner demonstrates: - awareness and understanding of the purpose of the journal The learner identifies: - her or his own purpose for the journal or journal entry.		
<b>The description of an event or issue:</b> - is present. The description: - provides an adequate focus for further reflection; It includes: - a statement of observations - comment on personal behaviour; - comment on reaction / feelings; - comment on context.		
<b>Additional ideas:</b> - is present. The learner demonstrates: - the introduction of (any) additional ideas to the description; - further observations; - relevant other knowledge, experience, feelings, intuitions - suggestions from others; - new information; - formal theory; - other factors such as ethical, moral, socio-political context.		
<b>Reflective thinking:</b> - is present. The learner demonstrates: - the ability to work with unstructured material - the linking of theory and practice; - the viewing of an issue / event from different points of view; - the ability to 'step back' from a situation; - metacognitive processes; - 'cognitive housekeeping'; - application of theoretical ideas; - considerations of alternative interpretations; etc.		
<b>Other processing</b> There is evidence of other processing - e.g. - new ideas are tested in practice; - new ideas are represented, for example, in a first draft or graphic form etc. and there is evidence of review and revision in a later copy.		
<b>A product results</b> There is a statement of: - either something that has been learned or solved that relates to the purpose or the problematic nature of the description - or there is a sense of moving on. For example, there is identification of a new area for further reflection or a new question is framed.		
Reflective diaries are assessed by the lecturer, therefore it is only seen by the lecturer.		

**Figure 4.7: Reflection journal assessment criteria**

Source: LMS screenshot

The students' writing improved with each round of reflection journals. Many of them were confronted with reflective writing tasks for the first time. It is not that their first reflection journal entries were very poor, it is merely that their level of maturity in reflection improved with each round of reflections.

From the very start in Reflection Journal 1, the students reflected heavily on the group work aspect of the course. Group dynamics were a significant aspect for the students. The simple aspect of working in groups, changes to their groups, personality clashes, different work ethics, different expectations, the logistics of working, and meeting in person all made for useful feedback on how the instructor was able to support the students in the phases that followed.

Another aspect the students reflected on heavily from the start was how the workload highlighted the need for time management skills to ensure that they were able to cope with the course. The reflection journals did, however, have a positive aspect, as mentioned in the literature (see Section 2.8). Reflection had an impact on how the students improved their own learning behaviour when faced with obstacles. The students devised creative and practical ideas and solutions to their problems, such as the creation of WhatsApp groups to expedite communication between group members. File sharing such as on Google Drive was a common solution used to coordinate their efforts and ensuring that the documents they worked on collectively were available to everyone and that all group members always had the latest versions available.

The reflection journal feedback also provided helpful information to the instructor in order to improve the experience for the students (see Section 2.3.1.7). Several students reflected on how their lack of Internet access off campus influenced their ability to submit on time if a task was only made available on the LMS close to the deadline.

*“One bad experience about research project is the late link uploads. This is inconvenient for me because I only have access to Internet on campus. The link for final research project was uploaded late” [Respondent 2016:13].*

The reason for this is explained in Section 4.4.4 regarding the instructor’s experiences in terms of the platform’s shortcoming and user expertise.

The reflection journals also helped to motivate the students, again as per the literature (see Section 2.8). Reflecting provided the students with an opportunity to consider how they could overcome these obstacles (self-empowerment). Not only were the students well aware of their obstacles, but the reflection also required them to identify ways to overcome these obstacles. Be it group work, workload, or time constraints, the students quickly realised that it was up to them to find a way around their obstacles in order to improve. Most crudely put, the students were forced to “adapt or die” but in a friendly

way, as is evident from the optimism observed in their reflections once they fully grasped the fact that they alone were in control of their studies. Not only did their optimism grow with each reflection, the satisfaction evident in their last reflection journal entries was also noticeable.

#### **4.4.2.2 Reflection Journal 4 feedback**

The focus of the last reflection journal was slightly different from the previous journal entries. The students were tasked to reflect on the year as a whole, with each question concentrating on a specific aspect of the course. Some of the more important topics covered here were also covered during the focus group interview but were considered necessary to determine the perception of the whole group and not only of a select few students. The feedback discussed here once again highlights the contrasts of the individual experiences with the cynical, disruptive discussant in the focus group. Further discussion of this matter follows in Section 4.4.3.5. The aspects that the students were required to reflect on are shown in Figure 4.8.

#### **4.4.2.3 Wiki rated feedback from Reflection Journal 4**

Wikis were chosen as one of the tools to facilitate collaboration and knowledge creation through an online community (see Section 2.7). To gauge the effectiveness of this experience, the last reflection journal questioned the 2016 Wiki 4 respondents particularly on the aspects of wikis in Questions 1 and 2. Table 4.1 and Figure 4.9 present the overall scoring of the wikis.

## Reflective journal entry 4

Create Journal Entry

### Journal Instructions ^

#### **Instructions:**

The due date for your journal entry 4 is 15 November 2016 @ 23:59

This is your **last** entry for the year, therefore you are requested to reflect on the year as a whole. In this review you are required to reflect on the following aspects:

1. On a scale of 1 to 10 with 10 being extremely helpful and 1 being no help at all, how would you rate the use of wikis to have assisted your:
  - a. Understanding of the different topics covered,
  - b. Ability to express yourself in writing on these topics,
  - c. Ability to critically review someone else's work,
  - d. Ability to critically review your own work.
  
2. If you were given the opportunity to design the wiki area what would you have done the same/differently?
3. Not considering the constraints of Blackboard as a platform, what would help your interaction in an online community to guide you as a postgraduate student?
4. How has the workshops contributed to your studies?
5. Would you say that the Reflection diaries provided you any personal benefit or do you need instructor feedback for confirmation purposes?
6. What has been your experience with regards to the supervision process?
7. Where does your preference lie with respect to individual and group work and why do you feel this way?
8. How has the course structure prepared you to complete your research proposal?
9. How has the course structure prepared you to complete your Conference Paper?
10. How has the course structure prepared you to complete your Poster?
11. In your opinion how has this course helped prepare you for pursuing further research?
12. What would further support your research methodology information needs?

This entry will be assessed according to the **ASSESSMENT CRITERIA FOR REFLECTIVE JOURNALS** as provided in the worksheets for Workshop 1. [For your convenience it has also been added above.](#)

-

#### **Steps to complete your diary entry:**

1. Click on "Create Journal Entry".
2. Give your entry a title, followed by your student number in brackets.
3. Complete the "Entry Message" field with your reflection. Copy and paste questions 1-12 above into this area and start completing the reflective diary by answering each of the questions asked.
4. Click on "Post Entry"

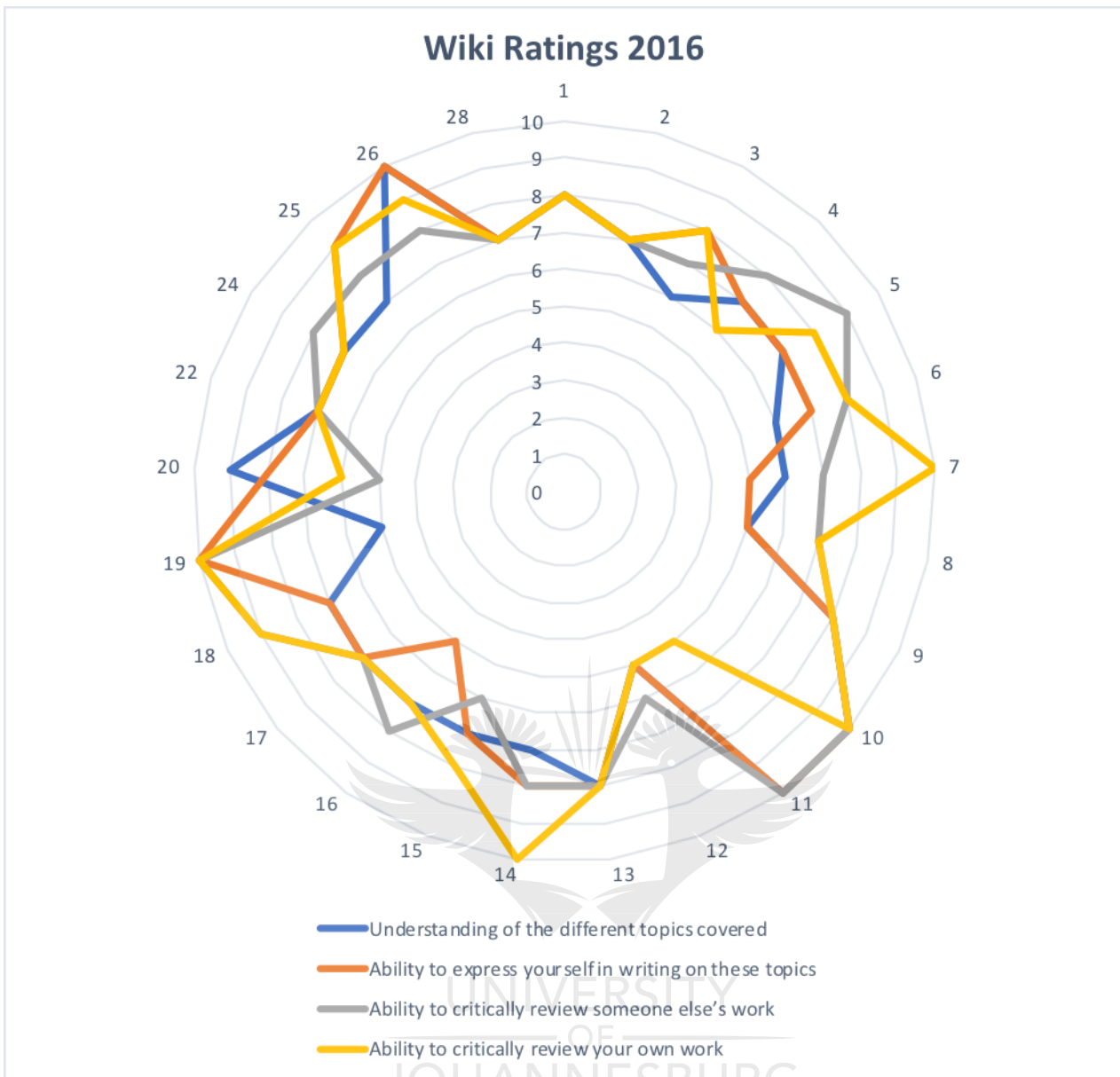
**Figure 4.8: Reflection Journal 4**

Source: LMS Screen shot

**Table 4.1: Wiki ratings 2016**

Questions:	On a scale of 1 to 10, with 1 being no help at all and 10 being extremely helpful, how would you rate the use of wikis to have assisted your:			
2016 respondents	Understanding of the different topics covered	Ability to express yourself in writing on these topics	Ability to critically review someone else's work	Ability to critically review your own work
2016:1	8	8	8	8
2016:2	7	7	7	7
2016:3	6	8	7	8
2016:4	7	7	8	6
2016:5	7	7	9	8
2016:6	6	7	8	8
2016:7	6	5	7	10
2016:8	5	5	7	7
2016:9	8	8	8	8
2016:10	10	10	10	10
2016:11	10	10	10	5
2016:12	5	5	6	5
2016:13	8	8	8	8
2016:14	7	8	8	10
2016:15	7	7	6	8
2016:16	7	5	8	7
2016:17	7	7	7	7
2016:18	7	7	9	9
2016:19	5	10	10	10
2016:20	9	8	5	6
2016:22	7	7	7	7
2016:24	7	7	8	7
2016:25	7	9	8	9
2016:26	10	10	8	9
2016:28	7	7	7	7
	<b>7</b>	<b>7</b>	<b>8</b>	<b>8</b>

\*No rating provided by respondents 2016:21, 2016:23, and 2016:27 (There were 28 respondents who responded to the questions asked, only 25 responded to the wiki rating question.)



**Figure 4.9: Visual presentation of wiki ratings in 2016**

The respondents had much to say about how they did not enjoy the wikis, yet the overwhelming majority rated the wikis quite highly in the four areas quizzed. Three of the respondents (Respondents 2016:21, 2016:23, and 2016:27) did not provide a rating but gave written feedback; those three were excluded when calculating the average rating for each sub-question (see Table 4.1). Some respondents offered written feedback over and above the requested ratings. The four areas that were explored and the feedback received were as follows:

*(a) Understanding of the different topics covered*

The overall average score was seven out of ten. From the feedback received it is evident that the respondents initially saw the wikis as a stumbling block with no value to their



studies. Examples of this can be seen in four of the respondents' feedback where they admitted that they only later realised the importance of the wikis in their function to assist with the completion of their research proposals.

*"It was only later when we had finished conducting the data-collection phase that I was truly appreciative of the wikis because then having to compile them became easier"* [Respondent 2016:6].

*"I only later realised that the way in which the wikis were structured was based only on the important aspects of the research that students should carefully take into consideration when conducting ... research"* [Respondent 2016:11].

*"Towards the end of the wiki submissions, I realised that wikis were helpful in understanding the diversity of research. In the beginning, they were a bit confusing"* [Respondent 2016:16].

*"Thinking back the wikis were the foundation on which we had to build ou[r] Research Methodology papers"* [Respondent 2016:20].

(b) *Ability to express yourself in writing on these topics*

The second aim of the wiki was to assist students with academic writing style; again the average score was seven out of ten. It appears that students were initially uncomfortable with the idea of "public writing" but warmed up to it towards the end. Some notable comments are as follows:

*"The more wikis I did, the more I was able to express myself fully"* [Respondent 2016:6].

*"As much as I would have liked to express myself on the wikis, I found it somewhat difficult because of fear of judgment from my peers"* [Respondent 2016:16].

(c) *Ability to critically review someone else's work*

The respondents started seeing the value of the wikis when tasked to review the work of their peers, as is evident from the following comments:

*"After reading through my friends' work I noticed what I had been doing wrong in my work, and how I could rectify that"* [Respondent 2016:24].

*"I believe that the wikis provided us with knowledge of how to review people's work, which will be very helpful when we get to the corporate world" [Respondent 2016:19].*

*"Over and above, it was extremely insightful and enjoyable. It also helped to elevate my critical thinking skills" [Respondent 2016:24].*

*(d) Ability to critically review your own work*

The respondents were quite vocal in this respect, and it was clear that they found this to be where the value in the wikis truly lied. Some comments were as follows:

*"Having learned the skill of reviewing people's work, I too had to assess my own and going through what I wrote in comparison to the others, I was able to do better with each wiki depending on what topic it was" [Respondent 2016:6].*

*"When I looked back at what I wrote, it was only then that I had misinterpreted much of what had been asked of me" [Respondent 2016:7].*

*"It has given me an opportunity of being able to be in charge of my own work and review it as well as making necessary changes" [Respondent 2016:10].*

*"When I looked back at what I wrote, I feel good as that helped me to better understand my topic better and my research methodology" [Respondent 2016:11].*

*"I was able to see if I did the right thing with my wiki, see where I went wrong, and make sure I improve on my next wiki creation and submission" [Respondent 2016:14].*

*"I had to learn to point out my mistakes and be brave enough to accept my own criticism and improve my writing" [Respondent 2016:16].*

*"I could quickly take recognition of the aspects in [my own wiki] which need a lot of improvement" [Respondent 2016:18].*

*"Looking back to what I wrote on my wikis I found mistakes that could have been avoided; however, I wouldn't have noticed them if there wasn't peer reviews done" [Respondent 2016:19].*

*"The comments passed on by fellow students had encouraged me to rectify my future errors and a big thanks should be given to them all for helping me and the group conduct our work in a more appropriate and correct manner" [Respondent 2016:27].*

#### 4.4.2.4 Wiki design feedback

The respondents were asked, given the opportunity, how they would change the wiki area. Their feedback was mixed, including not liking the wiki but understanding its importance and seeing its benefits.

Seven respondents indicated that they would not change the wiki format and provided the following reasons:

*“I was able to extract vital information from my peers”* [Respondent 2016:9].

*“Critical and strict comments that are made by students ensure each student knows what he needs to know in order to become better”* [Respondent 2016:27].

*“I feel that it was designed specific to the cause, and changing it would not change the dislikes I have for the task”* [Respondent 2016:3].

*“It gave the opportunity to critically review the work that we would have in a certain period of time”* [Respondent 2016:4].

*“I would maintain the ability for others to comment on the wikis being posted”* [Respondent 2016:18].

*“The wikis assisted me in fixing the mistakes I made on my research proposal”* [Respondent 2016:26].

The respondents offered some interesting perspectives and ideas on how they would improve the wiki format. However, aspects such as appearance and multimedia were entirely up to the students to include. They were encouraged to be very creative in their wiki design and to use colour and multimedia such as video links, audio, figures, and graphs to explain the various research-related topics. They were in actual fact not required to write in an academic style, but were tasked to use their write-up as if to teach someone about the various topics. This was an aspect highlighted in 2017 and 2018 and it was since discovered that the lack of multimedia use was related to the students' poor working knowledge of the LMS. The 2017 and 2018 students delivered superior wiki posts to the 2016 group. The suggested improvements from the 2016 group are therefore understood within this perspective and can be summarised into themes as follows.

(a) *Appearance*

Several respondents commented on the need to improve the visual appearance of the wiki; they found the interface bland and boring. One suggestion was to *“add a bit of colour to make it appear livelier”* [Respondent 2016:16]. Another suggestion was to *“encourage the use of images or illustrations as part of posting a wiki”* [Respondent 2016:1]. Another respondent pointed out that *“the design and layout of the page should be eye catching, because we are the visual generation where our brain remembers colour and creative ideas”* [Respondent 2016:23].

(b) *Multimedia*

Several respondents suggested the use of media such as images, video recordings, and audio to be incorporated into the wiki. It seems that they did not want to type for some reason, as indicated in the following comments:

*“... record an audio or a video. This will save time for students and also reduce the amount of typing”* [Respondent 2016:11].

*“I would implement a video link, were students will be allowed to express themselves through video conferencing and share more content than having to type it out”* [Respondent 2016:23].

*“Have a three-minute section where students take a video to show us”* [Respondent 2016:12].

(c) *Team perspective*

Some of the respondents suggested that the wiki submission be done as a group.

*“I would have just added a team retrospective, whereby the team meets and honestly reviews the milestone together with the supervisor”* [Respondent 2016:2].

Another variation limited to the group was:

*“So having a group wiki submission in which each group member submits a wiki”* [Respondent 2016:6].

(d) *Frequency*

A few of the respondents felt that the number of wiki assignments was too high.

*“What I would have changed though would be the frequency it was done in”*  
[Respondent 2016:6].

(e) *Real-time feedback and expert involvement*

Some of the respondents pointed out that they would have liked insights and inputs from their supervisors or an academic expert, which was indeed the initial intention of the wiki.

*“I would involve the supervisors’ input for the wikis to review their students work”*  
[Respondent 2016:13].

*“The lecturer, on the other hand, should have given feedback timely so that one could get direction and improve their marks”* [Respondent 2016:17].

*“More interactive, similar to a group chat with scheduled times during which group members would be active and give feedback in real-time because initially that is what I thought would happen”* [Respondent 2016:7].

*“More interactive, having to leave comments on other people’s work was great but we still needed the guidance of the lecturer. For instance, if everyone interacted in the wikis somehow and after all our comments, the lecturer either agrees or disagrees with the comments that have been said”* [Respondent 2016:6].

(f) *Peer review*

The respondents were not all comfortable with the peer review and thought that students were not mature enough to provide honest reflection, as one respondent commented:

*“However, I think the peer review part was not necessary because I feel some people would allocate marks just for the sake of doing it and I just did not see any value from it”* [Respondent 2016:17].

Another respondent suggested the idea of anonymous review:

*“It would have been good to keep the names anonymous, because not all our comments were positive (not every person can handle constructive criticism)”*  
[Respondent 2016:25].

(g) *Audience*

Two respondents commented on the value of making the wikis available to a broader audience, which strikes a similarity with the aim of this study to generate a knowledge repository.

*“Another online platform would be [to] create a portal where postgraduate students that are in the same field can share insights, knowledge, notes, research articles and journal as well as communicate amongst each other by posting questions and other students answering them”* [Respondent 2016:4].

*“I would suggest that the wiki area would not only be internally but should be published externally after two wikis have been done because at postgraduate level students are able to provide insightful information”* [Respondent 2016:5].

An interesting comment from one respondent was to extend the peer review further by applying and listing a ranking value for each wiki:

*“I would also list the wiki rankings to show the students the best wikis and also the lowest wikis, which can push students to excel further”* [Respondent 2016:9].

To conclude, the researcher is of the opinion that the following comment summarises how most respondents experienced the wikis:

*“I only later realised that if only I invested more time in the wikis, I would have acquired a lot of information. At first, I must admit I was very reluctant because I did not understand their sole purpose and as to why we are doing them, it is quite obvious that the idea of a ‘wiki’ may seem odd at first. But when we dive in, explore its links, and it will soon seem familiar. It made more sense as it guided me to understand the fundamental concepts of research cause [sic] and has helped me as a student to get most of the research analysis, design and data-collection tools into a broader perspective”* [Respondent 2016:9].

Next, the researcher wanted to learn what the students thought of the workshops.

#### **4.4.2.5 Workshop feedback**

All the respondents acknowledged the benefits of the workshops, acknowledging the length and information overload, but still understanding the necessity and valuing the

opportunity. The most important point raised by all the respondents was the value these workshops provided in helping with their research projects.

Several students commented on how overwhelming the workshops were, even to the point that some of them felt despair, as one stated:

*“I feel they have been very condensed and at times overwhelming”* [Respondent 2016:3].

Overall, the students’ overwhelmingly positive comments, despite acknowledging how stressful and overwhelming the workshops were, indicated that they would not have been able to complete the course outputs without them.

*“The workshops have been very influential in a positive way to my studies, they gave clear guidelines of what is expected of us, and they also provide us with light and hope that we could do what was expected of us”* [Respondent 2016:8].

*“The workshops were very necessary and information and their contribution weighed heavily on my understanding, in a good way. They may have been long but they were worth it because I remember the first workshop, I was so lost I was convinced that I was going to fail the course, no doubt”* [Respondent 2016:16].

In general, the workshops have been found to be an integral part of this course, without which the students feel they would not have been able to complete their research proposals, conference poster and conference poster. The online supervision described in Section 2.4 acknowledged that technology alone does not suffice and that some in-person contact is needed. This seems to be the case in this study as the students overwhelmingly commented on how the workshops contributed to their research. This is evident from the word cloud results in Figure 4.10.

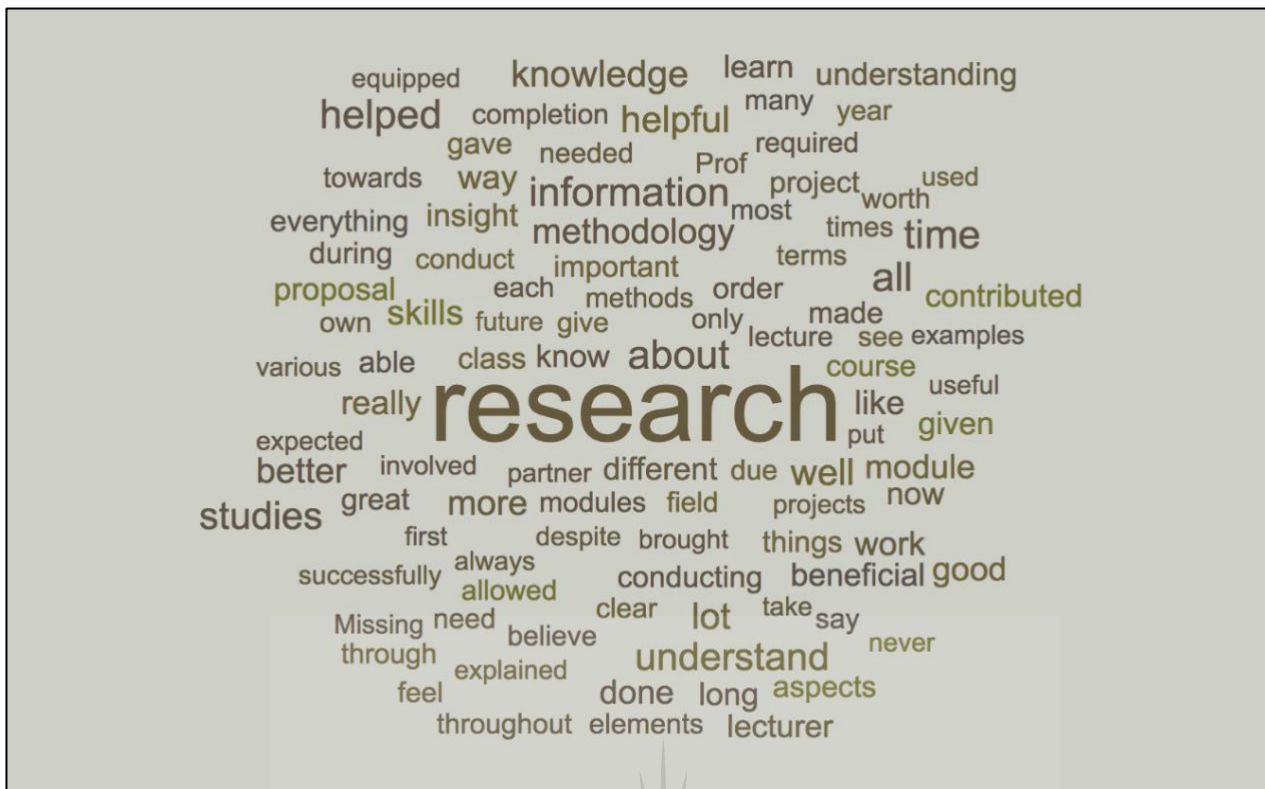


Figure 4.10: Word cloud result of workshops assessment

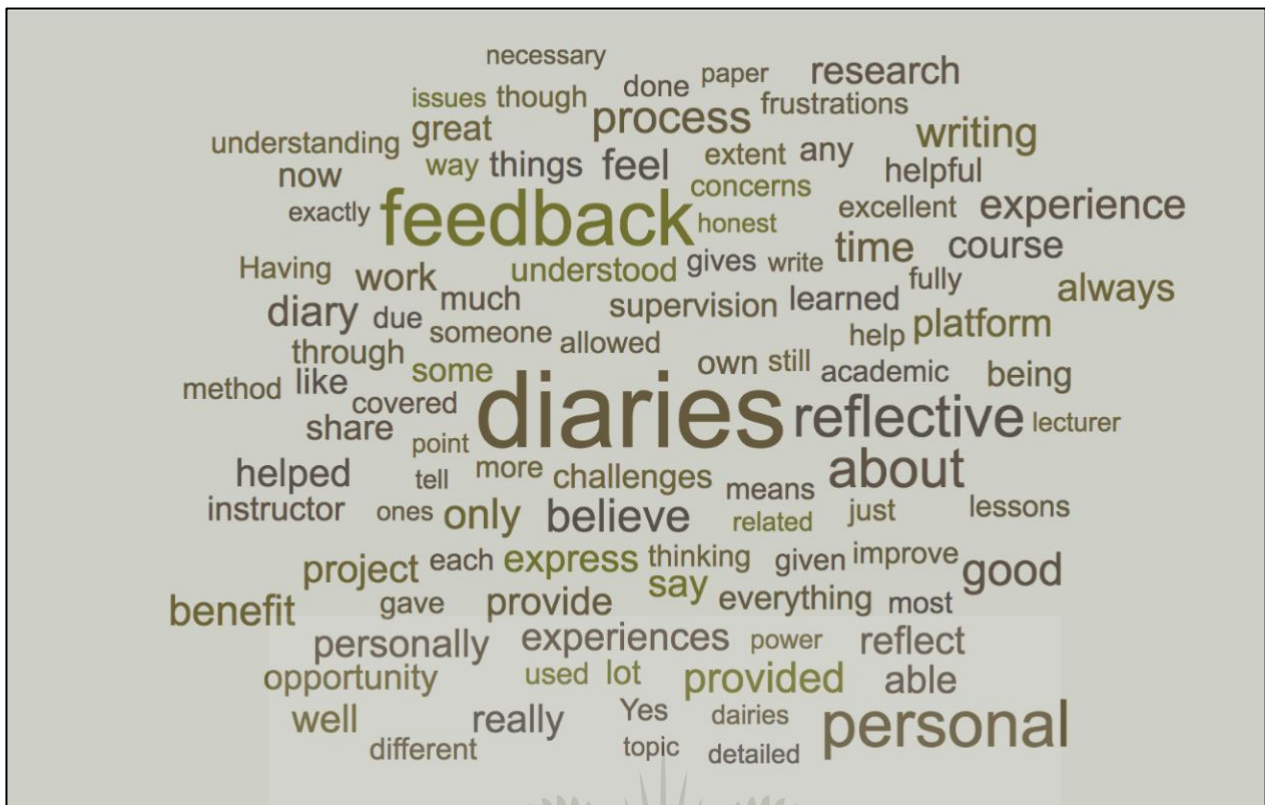
#### 4.4.2.6 Reflection journal feedback

The researcher next wanted to determine whether the students found the reflection journals helpful and useful. The students took well to the journal, and their feedback can be summarised as follows: beneficial, therapeutic, sharing frustrations, and helping with the research journey. The only suggestion that emerged strongly was that the students were expecting feedback from the instructor about their reflections. The need for feedback came through strongly in the word cloud assessment of their comments (see Figure 4.11). This could be because at honours level, students still seek validation and acknowledgement from their instructor on their views. Two notable comments carried the overall theme concerning responses:

*“... helped me to monitor my own progress and really to celebrate my hurdles and successes along the journey”* [Respondent 2016:5].

*“... able to express exactly how I felt about everything, share everything I have experienced truthfully”* [Respondent 2016:14].





**Figure 4.11: Word cloud results of reflection journals**

The students found the reflection journals to be “*calming*” [Respondent 2016:8], “*therapeutic*” [Respondent 2016:24], and they allowed for “*self-awareness and learning*” [Respondent 2016:9]. The second theme that emerged strongly was how honest the students were in their reflections, which also shows complete trust in the lecturer. The students treated the reflection journals very personally (see Figure 4.11) and were willing to discuss their true feelings concerning the course within these entries while being fully aware that the lecturer would read them.

In the next section, students were asked how they experienced the supervision process.

#### **4.4.2.7 Supervisor feedback**

In order to obtain feedback on all aspects of the course, students were also asked how they perceived the supervision process. The feedback was as expected; some students felt that their supervisors were not as involved as they could have been; others felt they did not make use of their supervisors efficiently.

Notable comments that reflect the general theme relating to this answer are as follows:

*“... supervision process throughout the course has played a crucial role ...”*  
[Respondent 2016:1].

*“Supervision is an important part of research, I believe a supervisor adds more value and direction to the research, he or she can determine the success of the project”* [Respondent 2016:9].

*“Personally, I think as a group, we could have done better. The supervision sessions were extremely helpful, but we did not use it fully to our advantage”*  
[Respondent 2016:25].

#### **4.4.2.8 Group work feedback**

The students were asked whether they preferred individual or group work and to supply a reason why they felt this way. The respondents were fairly divided in their opinion on group work; 14 of them showed preference to group work, 11 indicated their dislikes, and three were neutral. Those who enjoyed the group work seemed to have a structured approach such as creating a shared communication channel, as indicated in the following comments:

*“We created a WhatsApp group which acted as the main central place of communicating and sharing important ideas”* [Respondent 2016:2].

*“A Google Drive was created for storing collected information in a central location, to enable remote access to joint information [and] to store large volumes of articles”* [Respondent 2016:2].

In addition to a structured approach, those who indicated a preference seemed to show elements of synergy concerning group members pulling their weight and producing acceptable work in a timely fashion.

The respondents who disliked the group work tended to have incidences where the group dynamics interfered with the task at hand. As one respondent pointed out:

*“I prefer individual work because I can depend on myself to get things done and I do”* [Respondent 2016:7].

Another respondent pointed out that

*“unfortunately not everyone you work with as a person will be as hardworking and dedicated”* [Respondent 2016:14].

Some respondents pointed out that they would have preferred working alone but given the context and workload, fully understood and came to appreciate the need to work in groups.

*“I would rather do individual work at all times, even with the project at first I felt like if only I could do it alone, but later realised its importance”* [Respondent 2016:8].

One respondent effectively summarised the overall group perception by commenting as follows:

*“Groups, if you have the right partner, can help [soar] to greater heights or lead to a lot frustration. Working in groups I felt for many (myself included) of this year may just [stunted] some people’s growth because it was a gamble who you got to work with and what they bring to the table. But there must be those who worked well together”* [Respondent 2016:20].

#### **4.4.2.9 Course structure feedback: Research proposals**

The students were asked how the course structure prepared them to complete their research proposals. In general, all the respondents were satisfied with the course structure, with no critical comments received. All the comments acknowledged the structured approach followed and how it helped with each step of the journey, and can be summarised by the following comment:

*“In my mind the course structure is the entire course, the research journey, workshops and every other aspect that required submissions from me. I think that having gone through the wikis, the workshops and the like, I was able to finish the research proposal with my group. The course structure made it easy to know what is required and what I need to do to ensure that my group and I complete the research proposal”* [Respondent 2016:6].

#### **4.4.2.10 Course structure feedback: Conference paper**

The students were asked how the course structure prepared them to complete their conference papers. The respondents drew inspiration from different aspects of the course structure; some referred to the wikis as being helpful, others the research proposal, while some indicated the last workshop. Overall, all the respondents found some part of the course structure helpful to complete the task of a conference paper. Only one respondent did not feel that the course structure helped, but pointed to external factors as the main reason for his/her discomfort.

#### **4.4.2.11 Course structure feedback: Conference poster**

The students were asked how the course structure prepared them to complete their conference posters. The respondents seemed to enjoy the posters and were initially a little nervous since the majority of the respondents pointed out that it was their first encounter with presenting research in this manner. In the end, all of them felt satisfied that the course prepared them for the task.

#### **4.4.2.12 Further research feedback**

The students were asked to reflect on how the course helped prepare them for pursuing further research. All the respondents commented favourably on this question. To quote one respondent:

*“The course structure I can say was well prepared for those who would wish to further their studies even more. The structure was designed to be insightful and also allowed for an individual to see themselves furthering their studies”*  
[Respondent 2016:8].

#### **4.4.2.13 Research needs feedback**

The respondents were asked what would further support their research methodology information needs. Generally speaking, all the respondents were satisfied with the support received; as the following respondent indicated:

*“Now that we are done with the research methodology [module], I feel like the structure of the module was created in a way which covered all the possible needs that a student would possibly have. From the workshops, the supervisors, the*

*wikis, and reflection diaries, it was a great way to help the students understand their paths in research and excel in it; the rest was up to us to put in the effort of making our research projects a success. By so saying I mean that the research methodology module was structured in a way which addressed all possible information needs we could have as students” [Respondent 2016:8].*

This concludes the individual feedback from the 2016 students. A single focus group interview was conducted with six respondents immediately after the course and just prior to examination time.

#### **4.4.3 Focus group interview**

A focus group of six participants was conducted to measure students’ perceptions on specific aspects applicable to the focus of this study. The interview was led by the researcher with guidance from the co-supervisor, who was also present during the session. The interview questions were decided on before commencement and were approved by the supervisor and co-supervisor. The prepared questions are available in Appendix C. Some questions were omitted if answered indirectly in other feedback. Additional questions were also asked during the session based on the responses received and were mentioned during the data analysis in order to clarify some responses or to prompt participants to provide usable feedback. The facilitators remained impartial and neutral to the feedback during the whole interview. The interview started with a general question in order to neutralise the atmosphere and to gently ease the participants into engaging as a group with the facilitator. The full interview was transcribed and is available in Appendix D. The responses were anonymised. The interview lasted just over an hour and a half, although 21 questions were prepared, additional questions were asked as a result of the direction the focus group discussions went into. Thus the total number of questions which included follow-up questions and exploratory questions totaled 63. The main areas that were chosen to be targeted during the interview were:

- the research journey;
- platform- and instruction-specific aspects;
- group work;
- wikis;
- peer reviews;

- reflection journals;
- online communities; and
- final thoughts and ideas.

Analysing the participants' feedback provided some valuable feedback. This feedback is discussed as follows:

#### **4.4.3.1 Opening question**

The participants were welcomed, the facilitators introduced themselves (the researcher and co-supervisor of this dissertation), the research to which the interview referred was briefly described, and a few practical guidelines for the interview were communicated.

The opening question asked the participants what they liked about the course. The primary purpose of the first question was to be an icebreaker. Some of the notable responses related to learning new skills with relation to technology, research, to working with others, and being taught responsibility and accountability (see Appendix C).

#### **4.4.3.2 The research journey**

The aim of this question was to determine if the students were aware of an unfolding journey during their year. One of the aims of the collaborative platform, as illustrated in Figure 1.1, was that each of the components and tasks assigned to them during their research should build up into their final research project and would be experienced as a journey that leads to a successful conclusion.

The participants all clearly indicated that they experienced a sense of a journey. One participant compared and linked the journey back to their undergraduate studies. Another participant evaluated it agreeably, while also voicing their insecurities and confusion, by saying it felt like

*“reading a map upside down ... you understand that all along it's like going from here to Mount Kilimanjaro, while closing your eyes and hoping that things will work out at the end” [FGP 2016:2].*

Thus, it would seem that despite the students realising that they were on a path with a visualised end goal in sight, they were still uncertain as to the elements that they would encounter on the said path.

Additionally, one participant added another dimension to the journey; referring to the interpersonal aspects, by relating to others in the study when working in groups and their influence adding to the journey, as a “*steep hill*”, which created a sharp learning curve in the realisation that one must address group dynamics constructively. Another participant indicated that they had grown during this journey and that aspects that were perceived as an obstacle in the past had been conquered, which reflects a sense of personal achievement.

#### **4.4.3.3 Platform- and instruction-specific aspects**

The line of thought behind these questions was to determine if the layout of the course was sensible, if the instructions were clear, and to determine what could improve the students’ experience.

For the most part, the participants were satisfied with the layout and the instructions provided for each task. Concerns were raised about the timeous placement of content. For others, accessibility was an issue; when asked, the students were unaware of the mobile application available. The participants specifically wanted to be able to submit earlier to obtain their plagiarism report so that they could make changes when needed. The participants were unaware of the plagiarism tool provided to them outside of the course in a postgraduate community in which they were all enrolled.

The participants had a few suggestions for improvement; one of which was improved ease of submitting assignments. This relates back to their initial comments that they were unaware of the mobile application that provides alternative access points to submit assignments. Another suggested area of improvement was to use less academic language when setting up tasks. One participant noted that the instructions were sometimes confusing because of the wording. Another suggestion was the placement of assignment or submission links. One participant was of the opinion that it was embedded too deep:

*“Just to get to that one submission I have to get through ten pages before I get to submit”* [FGP 2016:2].

This perception was completely unfounded, since all the submission links never exceeded three clicks and most were only two clicks away from the course homepage.

Another suggestion was to provide a help feature that the students could access when they forgot how to do something on the platform.

#### **4.4.3.4 Group work**

As part of the course, students were required to work in groups on their selected research topics. These questions were asked to determine how they experienced working in groups. Although it came up briefly in some of their responses during the first question, they had much to say during the direct questions.

The participants had some very passionate opinions on working in groups; for some it was an enjoyable experience, while for others it was the complete opposite. The typical problems associated with group work were mentioned, such as people not doing their part. The participants were determined regarding the need to have a group leader who can take responsibility and monitor progress to ensure that the participants contribute as and when required.

#### **4.4.3.5 Wikis**

Wikis are an essential component of this module; they are meant to be the main contributing element to the knowledge repository that should be created, as illustrated in Figure 1.1. The questions were aimed at determining the students' level of maturity and their thoughts on writing and sharing knowledge through the use of wikis.

As mentioned in Section 4.4, examples accompanied Wiki 1 and 2. The researcher first wanted to determine what impact the examples had on the students. One participant said, *"I think it was important for her to give examples for Wiki 1 and Wiki 2"* [FGP 2016:3].

Further on in the interview, during another line of questioning, another participant commented that wikis and their relevance were still unfamiliar to them (see Appendix D). The participant further linked the instructions and the examples by indicating that the instructions were also clear. However, despite this, it did not mean smooth sailing, but for the remainder of the wikis, *"everything was good"* [FGP 2016:3]. The researcher can therefore safely assume that the examples were a valuable aid and served their purpose in general. The wikis also happened to be useful to the students in another task, as one participant indicated: *"We got to use them for the posters"* [FGP 2016:4]. Another



participant indicated that the example *“set the standards high”* and indicated that they typed *“something similar”* [FGP 2016:5], as did another participant: *“When you read the example it’s like okay, this is how I should do it”* [FGP 2016:6]. The drawback of this was that the students did not use their own initiative and did not produce work of variety, which was what the lecturer also intended. Therefore, if there is a future knowledge repository, students would again go according to that as an example instead of following their lead. Thus, the researcher can conclude that the examples not only functioned as a valuable confirmative indicator but also reduced individualism.

When asked if the students took the wikis seriously, the response was an overwhelming yes, with reasons as having to *“refer back to what was discussed”*, *“it was a mission”*, *“it was counting towards our year marks”*, and *“you can’t write the same things because of plagiarism”*. Thus, the researcher can conclude that the students put much effort into completing the wikis and saw them as a significant contributing factor to their studies.

The participants were asked if they perceived any value from the wikis. The responses received were mixed and seemed to contradict the feedback received from the individual Reflection Journal 4 responses. At this point of the focus group discussion, Focus Group Participant 2 was already being disruptive and monopolised the interviews. Almost without exception she answered questions first, and appeared to set the tone for the discussion. Her negativity was countered by the group at times and the contradictions of her responses to the individual feedback (see Section 4.4.2) from Reflection Journal 4 became apparent. In hindsight, a major limitation of the study was not including more focus group discussions in order to gauge the group’s perceptions in addition to the Reflection Journal 4 entries. However, the imminent examination and the fact that the students were moving on to another academic year or the conclusion of their postgraduate studies made the arrangements of a second focus group with the 2016 students impossible.

One participant very clearly indicated that *“it was unnecessary”*, and felt that it was *“information overload”* that only added to their workload; *“we are having to type wikis as well”* [FGP 2016:2]. Another participant felt differently and stated that *“the purpose of wikis is [to] collaborate”* and that *“it helps us to learn about other studies also”* [FGP 2016:3]. Another participant disagreed with this by saying that *“if they were interested about knowing what your topic is, they could have chosen it”* [FGP 2016:1]. Another

participant added to that by saying that *“with interest comes things like the conference competition, whereby I will be there standing telling you about my study”* [FGP 2016:2].

When asked if they saw any value in the wikis, one participant commented positively by saying that *“it was very empowering in terms of knowledge”* [FGP 2016:5].

When prompted further to comment if the wikis were a valuable source for a knowledge repository, which is one of the aims of this study, two participants answered with a definite yes.

During the questions, the participants commented frequently on the peer-review process and were quite vocal about it. Because of this, most of the responses related to the peer reviews will be discussed in the following section.

#### **4.4.3.6 Peer reviews**

There were two components to the peer review; the students were asked to comment on a wiki entry directly, and the second component was to submit a completed peer review where they were given the same wiki criteria as used by the instructor to mark their wikis. They were asked to rate the wiki according to this scale.

During the wiki questioning, the participants continually brought up the peer review component of the wikis. Some students did not do proper reviews, and as a result received low marks for their peer reviews due to them giving students who clearly did not do a wiki a peer review score. It was clear from the peer review that not all the students took this task seriously and strong responses on this matter were received during the interview. One participant said, *“A student who was deregistered is on the peer review”* [FGP 2016:2]. The facilitator clarified that this was the list provided to them on which they had to complete the peer reviews.

*“So, you don’t know what the implications are if you give that student the marks or you don’t give the marks. And if you don’t give the student the marks you are afraid that the lecturer will implicate you for saying you didn’t read the wikis. It was there, you didn’t see it, you missed it, or if you give the student the marks, you didn’t read the wiki, your work is not reliable. So, you don’t understand what to do in that regard ... To which I feel is quite unfair”* [FGP 2016:2].

Another participant commented by saying:

*“... we were tired from doing all the research reports. So, you find that you can't read anymore”* [FGP 2016:6].

Only one participant indicated that they noticed which students did not submit a wiki. That same participant, however, also said *“I didn't understand why we had to mark”*, thus indicating that they were not familiar with what it meant to perform a peer review, by confusing it with marking.

Another participant understood the reasoning and commented that *“we are about to go to the corporate world ... it's important for us to know how to peer review each other ... I think it was a good thing that she gave us those tasks to review each other”* [FGP 2016:5].

The participants were asked if they actually read all the wikis. The participants were honest and admitted that *“sometimes I wouldn't read them, the others I would read the first three ... then read the comments 'good' and I'm just gonna type good as well”* [FGP 2016:4]. Explaining that: *“... it was just too much, too many to read ...”* [FGP 2016:4]. One participant found a shortcut by saying that they *“read the introduction and conclusion just to check if they complement”*, then *“if the introduction complements the conclusion then it's really unnecessary”* [FGP 2016:1].

When the participants were asked how they felt about the wikis being shared with everyone in the class, they in general did not have any reservations, but their responses indicated that they did not take it very seriously, as one participant said: *“There is a level of, honestly, you can say immaturity ...”* [FGP 2016:2].

The students appeared to have missed the opportunity presented by the peer review and as a result lost out on valuable insights.

#### **4.4.3.7 Reflection**

The next topic in the interview questions was on reflection. The interviewer wanted to determine the level of self-reflection that occurred as self-reflection was brought into the course in the form of reflection journal entries.

The students were asked how they experienced regularly reflecting on their studies in this manner, which immediately solicited different reactions from the entire group. Some of the participants only smiled, others laughed out loud, one participant said *“Ooh”* in a

high pitch, while another participant remained expressionless. One participant pointed out that it *“is giving your opinion ... how do you say I’m not right for perceiving things in this manner ...”* [FGP 2016:2], while another participant asked, *“How can you give me feedback based on my personal opinion?”* [FGP 2016:6].

When asked if they found the journal to be more personal than a wiki, the group all agreed that it was personal. One participant added:

*“I think it was one of the requirements for the reflection diary to be honest, you know, to communicate in there your experiences and then what is it that you face in challenges”* [FGP 2016:3]

Another participant also added:

*“It is more general ... It doesn’t focus on one thing ...”* [FGP 2016:4].

The facilitator followed up on the point of honesty, and the feedback received from everyone was that they were honest in their reflection, except for one participant who had a nervous laugh.

The facilitator continued to attempt to determine whether the participants saw the reflection journals as a personal benefit or whether the participants wanted confirmation from the instructor in the form of feedback. Three participants indicated that they perceived it to be for personal gain, while two disagreed. The participant who mostly provided cynical feedback to every question was surprisingly quiet on this question.

When asked to elaborate on what the participants learned on the research journey by reflecting in a formal setting, they were unsure of what was asked, so the question was rephrased to ask whether the journal told a story of their journey. Two participants answered with a curt “Yes”, and one participant only realised that she had obstacles that she overcame when she had to reflect on her experience. The assessment criteria (see Figure 4.7) for reflection journals were available to students and were discussed during Workshop 1. The students’ opinions were not assessed; only their ability to use reflection as a self-assessment tool and learning opportunity. During the assessment of Reflection Journal 1, some students misinterpreted the assessment as if a grade would be assigned to their personal opinions. These students were assured in the feedback that regardless of their expressed opinions, they were merely assessed on how effectively they were applying the process of journals as a self-reflective tool and they were reminded of the

assessment criteria. A general announcement prior to the second reflection journal was posted to all the students.

#### **4.4.3.8 Online communities**

The last topic for the focus group interview was the concept of online communities and whether they had any sense of such during their studies. The first question aimed to determine, considering wikis combined with peer reviews, whether there was a sense of an online community.

The cynical participant had many comments about time management and how it was an unnecessary part of the course. The participants then proceeded to debate among themselves about how the practical application of wikis was necessary for the degree that they were doing. Probably the only concrete comment of this whole debate was that given the amount of work, they did not experience it as a fun activity, which was what they perceived from the theory learned about online communities to involve.

When asked what they perceived the characteristics of an online community to be, again much debating followed, which included suggestions like *“interaction”*, *“feedback”*, *“innovation”*, *“excitement”*, *“interesting”*, and *“diversity”*.

From the above, each suggestion solicited different examples. With *“interest”* and *“excitement”*, the participants explained that the discussions should be of interest and it should be exciting to participate in. With *“diversity”* and *“innovation”*, the participants pointed out that they would like other forms of media, such as pictures and videos, with particular mention that video was of higher value and that audio or podcasts were considered lacking. As indicated in Section 4.4.2, the students were specifically requested to design their wikis with multimedia and innovative learning tools, as is suggested here. The 2016 group failed to realise that it was in their power to apply the platform in this creative manner. This was highlighted by the 2017 group and the wiki entries improved substantially in this regard.

#### **4.4.3.9 Final thoughts and ideas**

When asked what their final thoughts were regarding what this course had taught them, the participants mentioned that the course provided good grounding for further studies, taught them to think holistically, made them feel a little intimidated to study further, and

helped them to think out of the box. Thus, each participant took something away from the course, positive or negative, that would stay with them for a long time.

#### **4.4.4 Instructor experience**

The course has one main instructor who teaches the academic content, and several supervisors who were assigned to the different groups. This section highlights the instructor's experience and reflection of 2016 and includes in-time adjustments that were made, as well as planning for the 2017 iteration of the course (see Section 2.3.1.7).

##### **4.4.4.1 Initial obstacles**

There were several administrative and platform-related obstacles during the year. These can be grouped as follows:

###### *a) Registration and onboarding*

- (i) There were some obstacles early on in the module where some students registered late and missed the initial research group allocation. These students were assigned to groups and had to get up to speed with the project and the groups' progress.
- (ii) Some students deregistered. To further complicate this matter, there were instances where they neglected to inform their research group members of this.
- (iii) One student did not have access to the LMS; he was registered for a course code that was not linked to the automated enrolment. This student was added manually to the LMS and was able to continue with the online activities.
- (iv) There were instances where students were placed in the wrong research group on the LMS, requested to be moved to other groups, etc.

###### *b) Platform usage*

- (i) There were several incidents where students made mistakes by misusing the platform. This was surprising since clear step-by-step instructions were given for each online task and students should have been familiar with the institutional LMS (see Section 4.2) by the time they reached honours level.
- (ii) For both Wiki 1 and 2 there were two types of mistakes made by students. The first was to submit their wiki entry over the example that was provided instead of creating a new submission. The second mistake some students made was to

submit their wiki in the peer-review link. The number of mistakes made decreased with Wiki 2 but were not eliminated until Wiki 3.

- (iii) For the peer-review links, two students accidentally created blank submissions by forgetting to upload their files. They did, however, realise this immediately and informed the instructor, who was able to mediate the problem.
  - (iv) For the first draft report submission, one group uploaded the wrong version of their document. They realised it reasonably soon afterwards and subsequently emailed the correct version to the instructor.
  - (v) For the initial reflection journal entries, some students opted to upload a Microsoft Word document of their reflection instead of typing it in the online space provided. This made reviewing difficult for the instructor, who had to download the file before being able to view the contents. The instructor informed those students, as part of the feedback, where to load their reflection in the future.
- c) *Platform shortcomings*
- (i) During the course design, the LMS platform was not able to accommodate some of the instructor's needs, and a workaround had to be found.
  - (ii) The wiki tool allowed for late submissions by students but did not flag them in any way to make it apparent to the instructor. The link could also not be closed because of the peer review. The instructor had to compare the submission date of each wiki entry, as well as the latest version, to ensure that the students who submitted on time were not unfairly disadvantaged.
  - (iii) For Wiki 1, the initial settings were incorrect, which resulted in students being unable to access the "Create Wiki" button. This was immediately rectified when the instructor was made aware of the problem.
  - (iv) The tool used to check for originality and to help improve students' academic writing skills (Turnitin) did not integrate with the LMS's group tool, and as a result group assignments could not be created. To overcome this, two assignment links were provided. The first assignment created was a Turnitin assignment and students were told to submit and verify their document until they were satisfied that the similarity rating was at an acceptable level. The second assignment link created was a native file assignment that was capable of handling group submissions.

- (v) The students who were assigned to incorrect groups on the LMS and subsequently moved to their correct groups after a group file submission was made were not allocated the group mark received, and the mark had to be captured manually by the instructor for the affected students.
- (vi) Submission links appeared closed to the students due to the group submissions needing to be assigned to individual students. This was as a result of lecturer error and restricted experience with this function of the LMS. Once the lecturer was made aware of the closed link, the problem was resolved and the link was made available after a consultation with the institutional Blackboard administrator. A mock group was created so that the lecturer would be able to see what the students assigned to groups can see on the LMS as it was not possible to view a student view when edit mode was toggled.

d) *Pedagogical obstacle*

The course was designed so that the other supervisors from the course would act as experts on the various wiki topics that the students had to complete. Unfortunately, this did not materialise as the experts were unwilling to participate. Ultimately, this task fell to the primary instructor and proved to be a considerable increase in workload since each wiki, as well as the peer reviews, had to be assessed by one person alone. When considering the pedagogical dimension “source of motivation” discussed in Section 2.3, it seems that the source of motivation in this course was not intrinsic to the design of this online environment.

The instructor was also required to reflect on her own experience during the year. The instructor performed three written reflections during this period. The first was at the end of April 2016. This was about one-third into the course duration; Workshops 1, 2, and 3, Wiki 1, Wiki 1 peer review, Reflection Journal 1, and the two tests were completed by this time. The instructor’s first reflection follows in the next section.

#### **4.4.4.2 Instructor reflection 1**

This reflection can be grouped into three sections, which include the obstacles observed by the instructor, as well as suggestions to overcome these obstacles for future iterations.



a) *Group dynamics*

The single most frustrating aspect for the students appeared to be the group work and the dynamics of working with various individuals who have differing commitment levels, strengths, weaknesses, and personalities. Perhaps a session on teamwork can be included as part of an early workshop or compulsory online material can be developed or sourced such as linking to YouTube videos on the subject.

b) *Workshops*

The students found the first workshop most daunting since they arrived unprepared in terms of the textbook and not having looked at the project briefs. A way needs to be developed to inform and ensure that they read the textbook and go through the project briefs before the workshop itself.

Although the workshop itself is really long (see Section 4.4.2), the content that must be covered is essential. The instructor contemplated one solution that could help to have shorter workshops, which is by initially introducing one evening class in which to cover the metaphorical “apple presentation” and using the opportunity to inform students on the importance of coming prepared to Workshop 1 by reading the project briefs and the prescribed chapters of the textbook. This reorganisation will also allow for Test 1 to be moved to Workshop 1, Test 2 to Workshop 2, and a third test can then be introduced that will allow a smaller number of chapters to be studied for each test and ensure that the students arrive prepared for Workshop 1.

c) *Research proposal*

Based on the instructor’s observance, it is further suggested that the Research Proposal Draft 1 submission must happen before Workshop 2 so that feedback can already be given at Workshop 2 and not at Workshop 3 as is now the case.

d) *Additional suggestions*

The instructor also observed that some groups found significant results in having created a Google Docs site where they can work on one document and felt that this should be encouraged from the beginning or even be built into the platform itself.

#### 4.4.4.3 *Instructor reflection 2*

The instructor briefly reflected on group performance during September, which was before the final submission of the conference paper, which is the component that contributed the most towards the students' course marks. This reflection was based on observing the research group she supervised, as well as the frustrations of the other supervisors.

The commitment levels of either entire groups or in some cases individual group members regarding the research projects were concerning. During this time the instructor also communicated these frustrations with the students. An excerpt from that communication is as follows:

*“Each decision you make, whether it is to allow one group member to take the brunt of the workload, whether it is to be absent from a class, whether it is to ignore the fact that you were absent and did not even bother to offer an excuse for it, whether it is continuous refusal to initiate, organise, attend, or arrive on time for a supervisory meeting, etc. (I think you catch my drift!)... Each one of these decisions has consequences; some consequences may be immediate, some may be far-reaching.”*

#### 4.4.4.4 *Instructor's final reflection and 2017 planning*

Towards the end of the first iteration, the instructor reflected on the student experiences and made suggestions for the next iteration of students. These reflections are grouped and discussed next.

<b>Supervision:</b>	
<b>Students were generally very positive and had great respect and appreciation for supervisors.</b>	There were one or two disappointments that emerged: <ol style="list-style-type: none"><li>1. Some [were disappointed] in themselves for having failed the supervisor's expectations.</li><li>2. Disappointment in initial enthusiasm of supervisor that disappeared later on.</li></ol>
<b>They were thankful for the relationships created.</b>	There were some issues with not being able to access the supervisor in their consultation time slots.

**The proposal, paper, poster:**

<p>The instructor was very impressed with the spread of academic documents received.</p> <p>Students were confident in research ability.</p>	<p>Two disappointments that emerged were:</p> <ol style="list-style-type: none"><li>1. Students wanted their wiki feedback prior to submissions.</li><li>2. Students were disappointed in the limited number of research topics available</li></ol>
<p>Students' opinions on the group work aspect of the course were fairly equally split between:</p> <ol style="list-style-type: none"><li>1. Having an extreme dislike (#GroupWorkMustFall).</li><li>2. Preferring group work over working alone.</li><li>3. Having no real preference to either option.</li></ol>	

**Tests:**

<p>The tests undoubtedly contributed to increased preparation for workshops.</p>	<p>Students were disappointed in their test results.</p>
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**Wikis:**

<p>Students were satisfied with the wikis and generally rated them as a 7/10.</p>	<p>Most students wanted more creativity and colour in the wikis.</p>
<p>The wikis helped them to understand and explain themselves.</p>	<p>Students only realised the value of the wikis towards fourth and fifth wiki.</p>
<p>Some students were satisfied with peer-review nature of the wiki, while others need facilitator confirmation and feedback.</p>	

**Reflection journals:**

<p>An overwhelmingly positive experience!</p>	<p>There was some criticism over the reflection entries:</p> <ol style="list-style-type: none"><li>1. Some wanted to know why personal thoughts can be assessed.</li><li>2. Some wanted more timeous feedback from their reflections.</li></ol>
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### Suggestions for 2017:

The instructor listed the following as potential changes to implement for the following iteration:

1. Chat room for instant messages.
2. Fewer wiki topics.
3. Faster wiki feedback.
4. Choice of individual or group assignments.
5. Lecturer role cannot be combined with supervisor role.
6. A more collaborative space.
7. Videos of important and useful resources.




## 4.5 SECOND ITERATION: 2017

From the feedback and suggestions received in 2016, several modifications to the course structure for the 2017 intake were implemented. The students were again tasked to reflect on the activities in the course. The reflection tasks were kept similar to ensure that the results between 2016 and 2017 could be measured correctly. What follows next is a discussion of the wikis for 2017 and the feedback received from the students. The only difference was that for 2017, no focus group interview was conducted. The reason for this is that after correlating the feedback from Reflection Journal 4 and the focus group interview from the 2016 intake, the researcher was of the opinion that the last reflective journal provided sufficient feedback. This provided a confirmatory element to the fourth reflection journal and would thus only grant an opportunity to interrogate participants deeper on replies when needed.

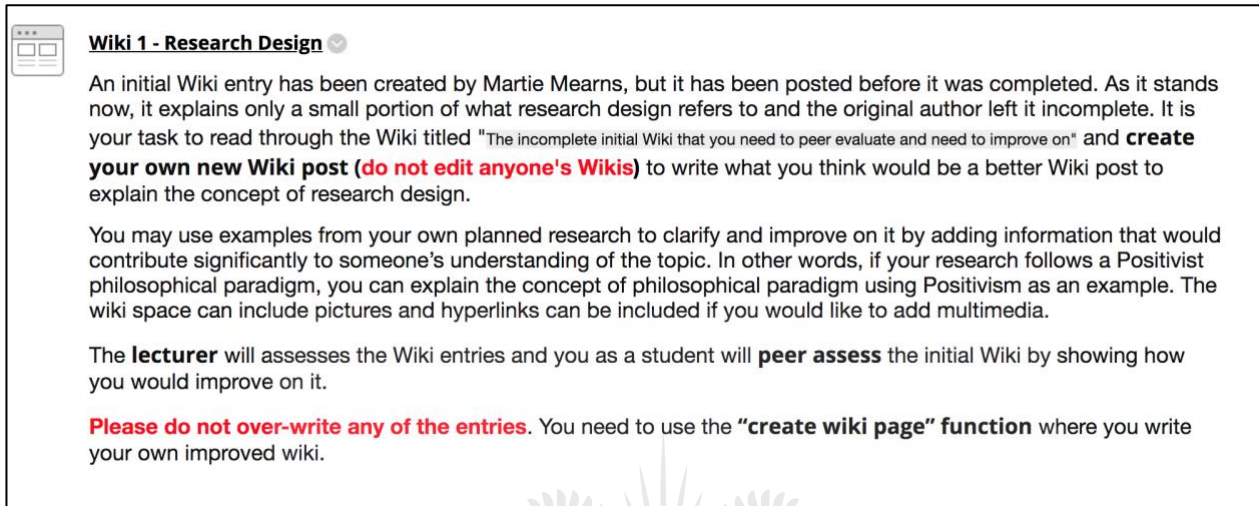
### 4.5.1 Wiki entries and peer reviews


Based on the feedback received in 2016, the wiki tasks were changed in two ways. First, they were reduced from five to three in 2017; these changes are shown in Table 4.2.

Table 4.2: Wiki changes for 2017

2017		2016
Wiki entry 1 – Research Design		Wiki entry 1 – Research Design Wiki entry 2 – Research Methods
Wiki entry 2 – Data-collection Practices		Wiki entry 3 – Sampling Selection Wiki entry 4 – Collecting Data
Wiki entry 3 – Data Analysis Selection		Wiki entry 5 – Data Analysis

Secondly, peer review was changed from peer reviewing the work of the other students to a self-development task by peer reviewing public content that they consulted to complete their wiki tasks. The new wiki instructions can be seen in Figure 4.12; the first wiki instructions are shown in Figure 4.2. In addition to the new instructions, the students were provided with some guidance on the content required for the wiki.



**Wiki 1 - Research Design** 

An initial Wiki entry has been created by Martie Mearns, but it has been posted before it was completed. As it stands now, it explains only a small portion of what research design refers to and the original author left it incomplete. It is your task to read through the Wiki titled "The incomplete initial Wiki that you need to peer evaluate and need to improve on" and **create your own new Wiki post (do not edit anyone's Wikis)** to write what you think would be a better Wiki post to explain the concept of research design.

You may use examples from your own planned research to clarify and improve on it by adding information that would contribute significantly to someone's understanding of the topic. In other words, if your research follows a Positivist philosophical paradigm, you can explain the concept of philosophical paradigm using Positivism as an example. The wiki space can include pictures and hyperlinks can be included if you would like to add multimedia.


The **lecturer** will assesses the Wiki entries and you as a student will **peer assess** the initial Wiki by showing how you would improve on it.

**Please do not over-write any of the entries.** You need to use the "create wiki page" function where you write your own improved wiki.


**Figure 4.12: Wiki 1 instructions**

Source: LMS screenshot

Reflection Diary




**Reflection Diary Entries**

Attached Files:  [Assessment criteria for reflective diaries.pdf](#) (44.868 KB)

Reflection diaries have been designed to support you on your research journey and to help you cope with the demands of the module. It is being assessed not because I want to influence what you say or prevent you from providing honest criticism, but the assessment is done based on your honest reflection, whether you have truthfully done retrospection and what plan you have to move forward.


Working through the criteria will give you better perspective on the reason and process of assessment that you can expect.



**Reflection diary entry 1**

Instructions:


[The due date for your diary entry 1 is 28 March 2017 @ 23:59](#)



**Reflection diary entry 2**

Instructions:


[The due date for your diary entry 2 is 18 July 2017 @ 23:59](#)



**Reflection diary entry 3**

Instructions:

[The due date for your diary entry 3 is 19 September 2017 @ 23:59](#)



**Reflection diary entry 4**

Instructions:

[The due date for your diary entry 4 is 1 November 2017 @ 23:59](#)

**Figure 4.13: Reflection journals 2017**

Source: LMS screenshot

## 4.5.2 Reflection journal entries

The students were again required to complete four reflection journals during their studies.

### 4.5.2.1 Reflection Journal 1 to 3 feedback

Instructions for the reflection journal were the same as in 2016 (refer to Section 4.4.2.1 and Figure 4.6). Similar sentiments were observed with Reflection Journal 1 to 3 as for the previous intake of students in 2016.

### 4.5.2.2 Reflection Journal 4 feedback

The focus of the last reflection journal was the same as in 2016; the questions asked can be found in Figure 4.8.

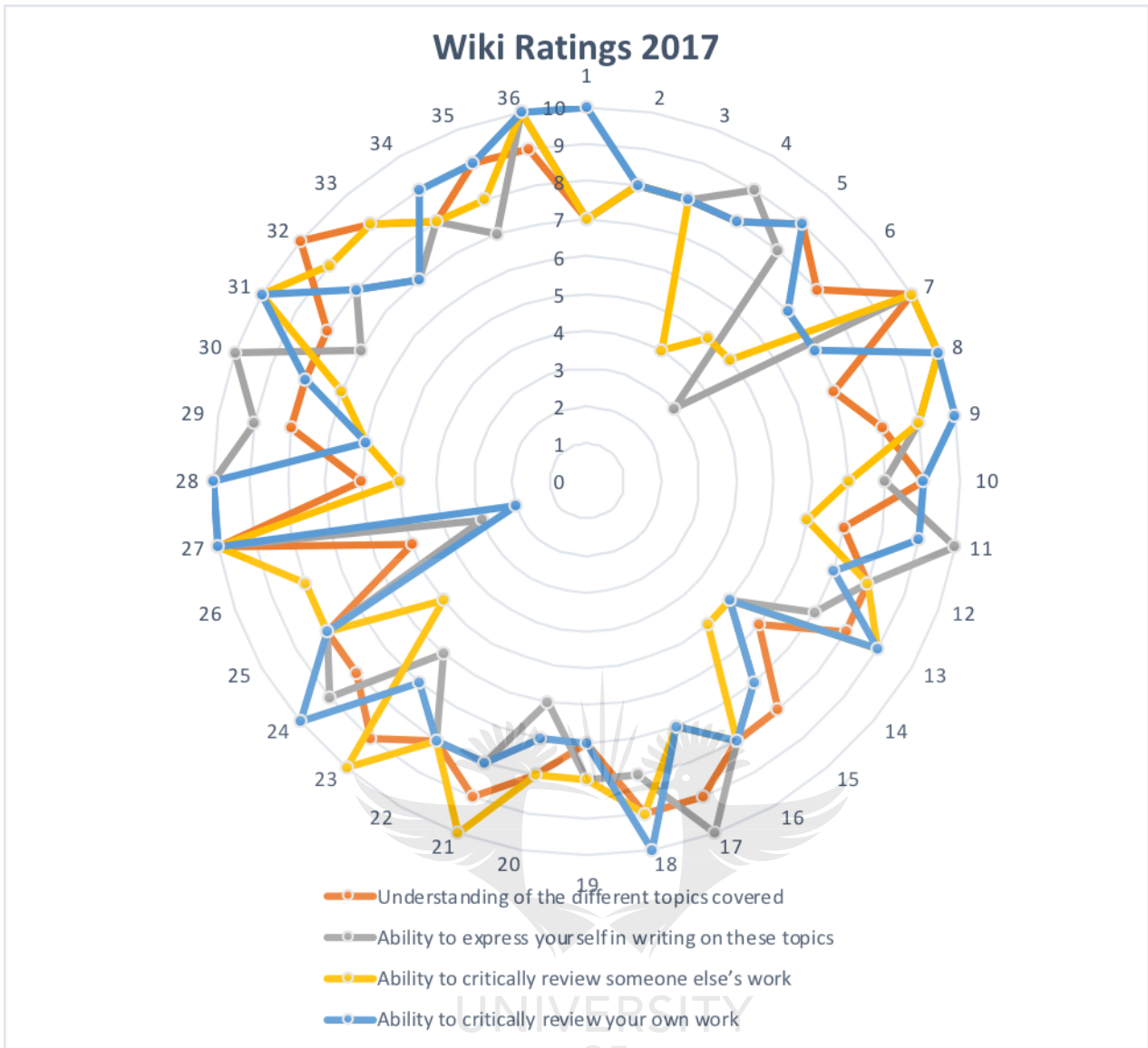
### 4.5.2.3 Wiki rated feedback

The overall scoring of the wikis are presented in Table 4.3 and Figure 4.14.

**Table 4.3: Wiki ratings 2017**

Questions:	On a scale of 1 to 10, with 1 being no help at all and 10 being extremely helpful, how would you rate the use of wikis to have assisted your:			
2017 respondents:	Understanding of the different topics covered	Ability to express yourself in writing on these topics	Ability to critically review someone else's work	Ability to critically review your own work
2017:1	7	7	7	10
2017:2	8	8	8	8
2017:3	8	8	8	8
2017:4	8	9	4	8
2017:5	9	8	5	9
2017:6	8	3	5	7
2017:7	10	10	10	7
2017:8	7	10	10	10
2017:9	8	9	9	10
2017:10	9	8	7	9
2017:12	7	10	6	9
2017:13	8	8	8	7
2017:14	8	7	9	9
2017:15	6	5	5	5
2017:16	8	7	5	7
2017:17	8	8	8	8
2017:18	9	10	7	7
2017:19	9	8	9	10
2017:20	7	8	8	7
2017:21	8	6	8	7
2017:22	9	8	10	8
2017:23	8	8	8	8
2017:24	9	6	10	7
2017:25	8	9	5	10
2017:26	8	8	8	8
2017:27	5	3	8	2
2017:28	10	10	10	10
2017:30	6	10	5	10
2017:31	8	9	6	6
2017:32	8	10	7	8
2017:33	8	7	10	10
2017:34	10	8	9	8
2017:35	9	7	9	7
2017:36	8	8	8	9
2017:37	9	7	8	9
2017:38	9	10	10	10
	<b>8</b>	<b>8</b>	<b>8</b>	<b>8</b>

\*No rating provided by respondents 2017:11 and 2017:29 (There were 38 respondents who responded to the questions asked, only 26 responded to the wiki rating question.)



**Figure 4.14: Visual presentation of wiki ratings in 2017**

*a) Understanding the different topics covered*

The overall average score was eight out of ten, which is one point higher than in 2016. The 2017 students gave fewer suggestions as written feedback but rated the wiki questions higher. This could be attributed to a better explanation of the purpose of the wikis and informing students that the platform allows for adding multimedia such as images, which the previous group commented on considerably. The majority of the students in this iteration commented that they found the wikis to be extremely helpful.



b) *Ability to express yourself in writing on these topics*

The overall score was again eight, which is one point higher than in 2016. This time, the students commented much the same as the previous year, but the focus moved to the self rather than their peers. Some notable comments in this round were as follows:

*“However, the wikis were a platform that enables creativity and allowed me to have a little bit of fun creating them”* [Respondent 2017:4].

*“... it taught me to express myself writing on academic topics and deliver as such. Even though other students could view my wiki, it felt as if it was my space and I owned it because I produced it”* [Respondent 2017:7].

*“I had the ability to use videos and pictures, which made it possible to make it my own, even adding my own logo to my page”* [Respondent 2017:32].

*“I got to learn to be creative and not be scared to ‘play’ with colour and this was utterly fun!”* [Respondent 2017:7].

c) *Ability to critically review someone else’s work*

Similar to 2016, the 2017 rating was eight for this question. Although the students were not explicitly tasked with peer reviewing their fellow peers’ wikis, they had access to all of them and were able to read what other students posted. Some noteworthy comments made by the participants are as follows:

*“... it felt a little odd to go through another student’s work ...”* [Respondent 2017:4].

*“... after failing the first wiki I decided to go through the wikis of my classmates in effort to understand why I have failed, and rest assured if it [weren’t] for that, I do not believe I would have passed the second nor the third wiki. Therefore, not only did our lecturer contribute to my growth with regards to writing wikis by giving negative comments, my classmates also indirectly assisted”* [Respondent 2017:24].

*“... though I did find it interesting to see differing approaches”* [Respondent 2017:32].

*“The ability to review someone else’s work was a great aspect of the wikis because it allowed me to not only see the issues that others are facing and in*

*which areas they are lacking, but it also allowed me to see my own faults and improvements that I could make based on what I have seen from reviewing the work of the other students” [Respondent 2017:33].*

*“... from what I saw, we have all gotten to be able to review each other’s work to improve their own work” [Respondent 2017:38].*

d) *Ability to critically review your own work*

Again, the review scored an eight, which is the same as for 2016. The students were less vocal than 2016, but those who did comment all acknowledged the role the wiki design played in giving them the ability to review their own work.

*“Based on the ability to have a look at the work of others, I could find possible shortcomings in my own work that needed to be improved” [Respondent 2017:32].*

*“... it also allowed me to see my own faults and improvements that I could make...” [Respondent 2017:33].*

Figure 4.15 illustrates that the main views between 2016 and 2017 stayed the same for the last two questions posed but also that a change was observed in the students’ understanding of the different topics covered, as well as the ability to express themselves in writing.

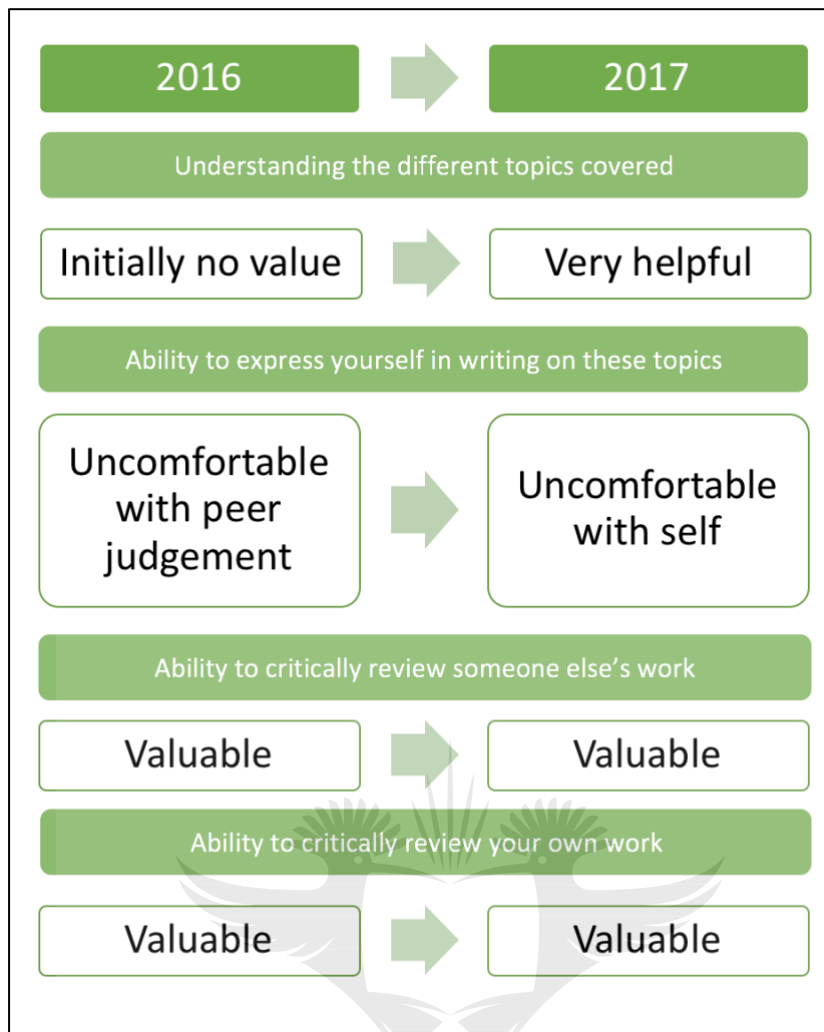


Figure 4.15: Wiki ratings 2016 vs 2017

#### 4.5.2.4 Wiki design feedback

In the second iteration of the wikis, there was an increase from seven respondents to 17 who were happy with the wiki area. Based on the feedback received, some interesting observations were made. The feedback differed greatly from the feedback in 2016. The themes that emerged in 2017 are discussed in the following sections.

##### a) *Self-awareness of improvement*

Nine participants raised dissatisfaction with the work they submitted and commented that they should have either spent more time on the wikis, or provided more illustrations, etc.

Their comments were as follows:

*“... only thing that I would have do differently in writing my wikis is including more pictures to make it easier for a third person reading it” [Respondent 2017:2].*

*“I would have taken more time to be creative and spent more time on them ... I had restricted myself in the beginning. However, once I got the hang of things, I was able to channel my inner creativity ...” [Respondent 2017:4].*

*“Given the opportunity, I will design my wiki in a different way, which will [maybe] be more detailed with a lot of examples” [Respondent 2017:13].*

*“Most of my wikis to my thought were just bland and boring. If I had the opportunity to redo them again, I could have used more visual aids such as illustrations, pictures, diagrams, or videos. More creativity could have been used in my wiki” [Respondent 2017:16].*

*“If I was given the opportunity to design a wiki again, I would be more profound on the matter at hand and explain more, which is something I think I didn't [quite] manage to do successfully” [Respondent 2017:23].*

*“Given the opportunity to design a wiki, what I would [do] different would be to go through as many sources as possible, and thoroughly read the work of various authors surrounding the topic, then after I write everything according to my understanding without having to quote an author” [Respondent 2017:24].*

*“If I had the opportunity to design the wiki area, I would have put in more time and effort in trying to add more videos and pictures in order to make the wikis a whole lot more interesting” [Respondent 2017:26].*

*“I would make it the best I had ever done. Hyperlinks would be added, pictures, tables, graphs, as well as it being colourful, not forgetting making the content easy and simple to grasp by an illiterate at first glance” [Respondent 2017:30].*

*“If I were given the opportunity to complete the wikis again I would add more information and pay more attention to details instead of providing information that will only give users a brief understanding of the relevant topic. I would pay more attention to ensuring the wiki is descriptive and users will be able to gain valuable information that can be utilised practically” [Respondent 2017:35].*

b) *Navigation*

One student wanted to improve on the navigation of the platform but did not provide details.

*“If I was given the opportunity to design the wiki area I would improve on the navigation”* [Respondent 2017:10].

c) *Freedom of topic and composition*

Two students suggested that the topics be left to them with fewer restrictions placed on the content and composition:

*“There were no rules that were specific rules regarding the structure and length of content, which gave each student to express their knowledge on the topics in their own unique way. Make sure that the student can give any title they want to with their student number alongside it as it promotes and enhances originality and creativity”* [Respondent 2017:8].

*“Make the questions a bit less direct so that students can be able to express their knowledge more on a particular topic”* [Respondent 2017:33].

d) *Appearance*

One student commented that the platform needed more colour:

*“I think the wiki space needs a bit of colour. I mean, it is a creative space after all and it should stimulate the minds of students. I think that it can still get the serious look of postgraduate even if it is eye-catching. The most important thing I believe is the content of the topic that will be discussed”* [Respondent 2017:7].

Again, the wiki posts' appearance is in the hands of the students and colour to be added is their own responsibility.

e) *Ease of use*

Regarding ease of use, one respondent commented as follows:

*“If I were able to redesign the wiki area, I would have made it an easier-to-use implementation for the creation wizard. What do I mean by this? I mean that there should be a way to make it more [aesthetically] pleasing, such as tools that can be gained from web design drag-and-drop-style websites. I would make it possible to*

*place pictures anywhere, have hyperlinks easily implementable, and create a YouTube link with ease, as I feel most students did struggle to implement this without help* [Respondent 2017:32].

f) *Templates and examples*

One student suggested providing a different template for each wiki, to encourage students to engage with the topic more. Other students suggested guidelines and examples.

*“Another improvement that can be implemented on wikis is having a different template for every wiki. In this way students will be forced to think”* [Respondent 2017:22].

*“I would also have given a guiding example of what an academic wiki entails and how it may be structured”* [Respondent 2017:6].

Examples were in fact provided during Workshop 1, with links to existing wikis.

*“Perhaps it will help students to provide guidelines or lists of what must be covered in each post – but in this same breath that could be considered spoon-feeding. I would just recommend that they be presented and assessed as they currently are”* [Respondent 2017:5].

*“What I would have done the same is by giving the students a basic understanding as to how a wiki should be done, like ... showed us in the first wiki that was due. Although, it would have helped if it was under a different area on Blackboard, or even in our workshop notes. Because personally I got confused, as to which one is the lecturer’s wiki, and which is my fellow classmate’s wikis”* [Respondent 2017:34].

g) *Usage tutorial*

Three students suggested that platform-specific help be provided in the form of guidelines, step-by-step guides, and tutorials.

*“It was a bit challenging to add creativity to my wiki entries (e.g. adding images and graphics), due to the lack of graphic design skills. So, I would also suggest that creating the wiki entry come with clear guidelines that will assist students to add some visual creativity on their wikis”* [Respondent 2017:10].

*“I would have provided detailed step-by-step guidelines of how to insert graphics, pictures, or videos in the wiki area to make it more simple and less frustrating for those students who battled with inserting visuals and did not catch the verbal guidelines given in the workshops” [Respondent 2017:21].*

*“If I was given the opportunity to design a wiki area I think I would do it differently by ensuring that it is convenient and everybody can easily use it. When I look at the platform that we used for our wikis, it is evident that some of us were not really familiar with regard to using it; options such as posting videos and URLs were challenging. This was very challenging for myself, and I think for other students as well. So providing a tutorial through a video explaining in detail how one can deal with the options that are available on the platform would be very useful” [Respondent 2017:37].*

The next three outlier findings were also identified:

*h) Draft feature*

An example of a student who was not fully aware of the platform’s functionality and who suggested the ability to save a draft version is as follows:

*“I would include a ‘save as draft’ option such as in the reflective diaries, because personally I have had some challenges whereby I would be in a different location somewhere and I would then have to quickly save a draft only to find out that this cannot be done. The saved draft would obviously not be in view of the other students to avoid copying of work” [Respondent 2017:7].*

Another student commented on just the fact that they liked the ability to save a draft version of their attempt:

*“... her design allows one to save the entry as draft ...” [Respondent 2017:12].*

*i) Privacy (disable peer review)*

A few students did not like the visibility offered by the wiki platform and did not want other students to see their work.

*“... the only thing that I was going to change is the part where other students are able to view other students’ work. I was going to disable it ... because I feel like other students just copy other students’ ideas in terms of pictures they have*

*inserted in their wikis, and their headings ... some of [them] go through someone else's work, then copy everything using their own words. It is a good thing that the wikis can be viewed but there are disadvantages to it"* [Respondent 2017:12].

*"I would design it in a way that students can't see each other's work because we used to make fun of each other's work in class therefore it is discouraging for other students"* [Respondent 2017:17].

*"Prevent other students from reviewing the wikis that have already been submitted. Based on my surroundings I have realised students tend to satisfice, instead of starting their own unique work, they prefer to look at the first wiki entry and build from there"* [Respondent 2017:22].

*"Nothing much, just remove the bar where everyone else can see the work you have submitted"* [Respondent 2017:36].

j) *Allow for comments and visibility of others' wikis*

Two of the students seemed to have missed the feature that allows them to comment on the work of others since that is what they suggested for improvements. Another student was not even aware that the students could see one another's wikis and suggested making their peers' wikis available.

*"I would create a platform whereby people can comment on other people's wiki ... like we do on Facebook or Instagram, and probably have a wiki profile, where you put your face and probably your birth date just for fun purpose. This would also facilitate a community that will assist postgraduate students"* [Respondent 2017:14].

*"If possible, allow the students to comment on the wikis of the other students, perhaps on a separate platform ... I think that sometimes when students are learning outside the formal venue their creativity is stimulated, such as myself"* [Respondent 2017:7].

*"I would still allow other students to be able to see how other students completed their wikis"* [Respondent 2017:15].

Figure 4.16 shows the different themes that emerged between the two intakes; this can be attributed to the changes in frequency, format, and instructions implemented for the



2017 intake. It also shows how the participants want to go against the nature of a wiki in wanting more privacy, and the themes where students wanted to view the work of others and a draft feature that highlights the fact that they were not aware of the full capabilities of the platform, which is indicative of a lower level of comfort with ICTs, as mentioned in Section 2.4.

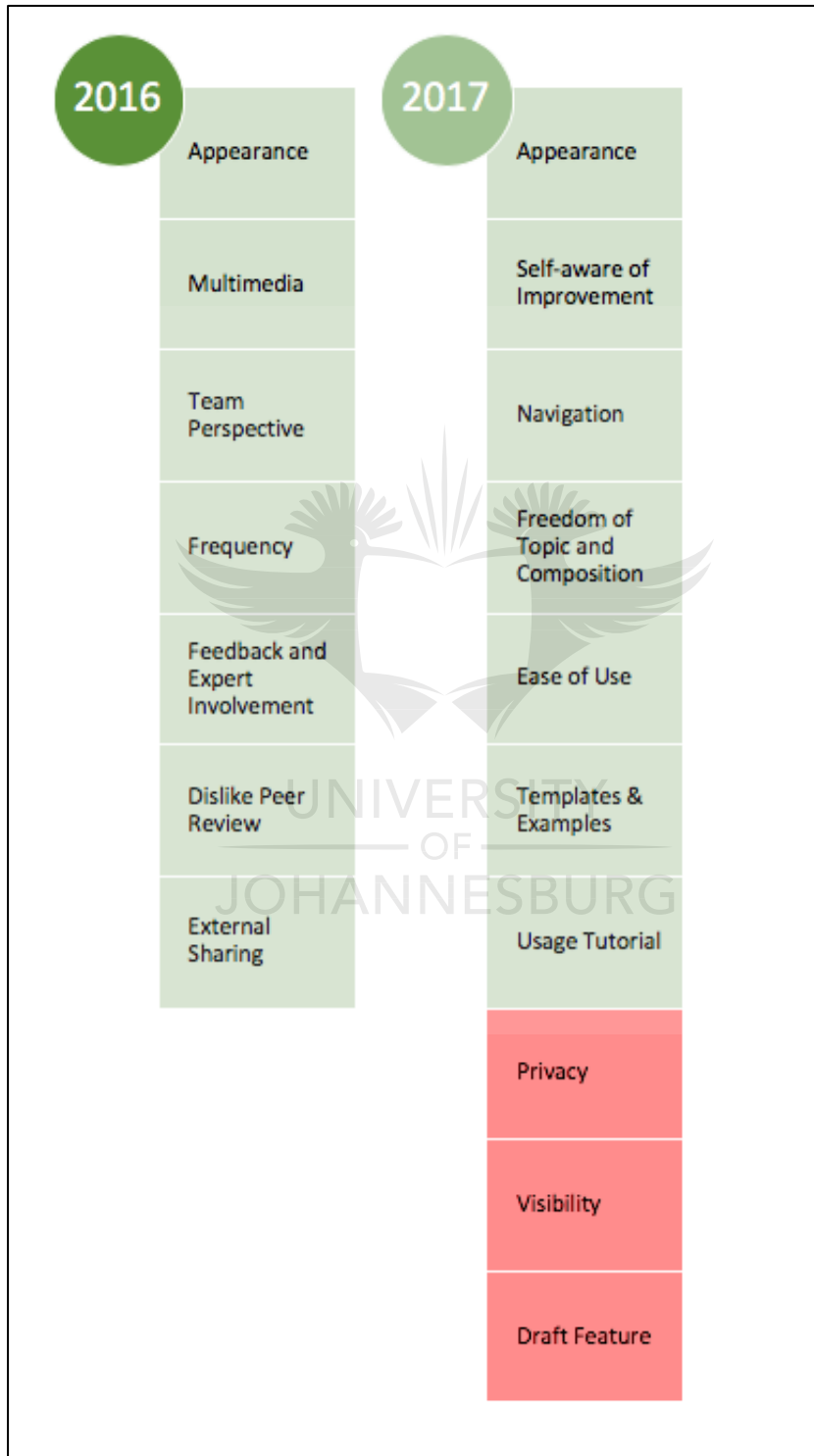


Figure 4.16: Wiki design – Themes comparison 2016 vs 2017

#### **4.5.2.5 Workshop feedback**

As with 2016, the students commented a great deal on the workshops, with a very similar outlook with regard to their feelings of gratitude towards the value it added and their despair with the length and magnitude of the content covered.

#### **4.5.2.6 Reflection journal feedback**

The students held much the same views as those of 2016; except during this round students had, for the most part, no comment on needing instructor feedback, and some specifically questioned the need.

*“... I think [it’s] better that we don’t get any feedback from the lecturer on reflection diaries because they are personal and our own opinions”* [Respondent 2017:2].

*“I believe that a diary should be confidential and [private], and a student should be able to say anything they feel and write about all the experiences”* [Respondent 2017:3].

*“I seriously don’t understand what the feedback would be about”* [Respondent 2017:38].

*“These reflective diaries have been great, wonderful, always put me on a high ...”* [Respondent 2017:27].

Again, these four responses disregarded the assessment criteria (see Figure 4.7) and contradicted the value that the lecturer provides in mediating the group dynamics or supervisor challenges that some individuals expressed in their journals and received support with.

#### **4.5.2.7 Supervisor journal feedback**

The students voiced similar sentiments as those of the 2016 group, with no new insights gained that are worth mentioning.

#### **4.5.2.8 Group work feedback**

The feedback from this group was the same as for the 2016 group. The sentiments and comfort depended greatly on personality, and group dynamics played an essential role in how the students experienced the group work component of the coursework.

#### **4.5.2.9 Course structure feedback: Research proposal**

In general, most students found a part of the course structure extremely useful in completing their research proposal. The only difference with this group was that three of them did not find it helpful at all, but then explained workload across all the modules to be the hindrance, which thus does not relate to the course structure but refers to challenges with the entire degree programme.

#### **4.5.2.10 Course structure feedback: Conference paper**

Again, the results were mostly the same as for 2016. Most students found the course structure to be sufficient to prepare them for completing the conference paper. Most students mentioned a specific aspect of the course that helped each of them the most to prepare.

#### **4.5.2.11 Course structure feedback: Conference poster**

The overwhelming majority of the 2017 group felt the course structure, specifically the last workshop, prepared them well to complete this task.

#### **4.5.2.12 Further research feedback**

The group again had similar views to those of the 2016 group and commented favourably on how the course prepared them to pursue further research.

#### **4.5.2.13 Research needs feedback**

Most of the students provided similar feedback to that of the 2016 group and nothing new was added.

### **4.6 RESEARCH DISCUSSION**

The three sub-questions of this study resulted in several findings, together with the literature review; all of which cannot function in isolation but which must rather come together to provide a solution that is capable of sustaining the research problem that was posed. In this section, the researcher first compares the findings from the participants, followed by the literature review and the combined research findings against the identified research problem and subsequent sub-problems.

This study's first objective was to discover where the value of a knowledge repository lies in the teaching and learning of research methodology among stakeholders. The second objective was to discover the characteristics and components of an online community and knowledge repository in the same setting as above. The third objective was to determine how the composition of the characteristics and components and intended value generators meet the research methodology needs of supervisors and their students.

The significant findings that emerged from the participants with respect to the characteristics and components, their composition, and the formation of a knowledge repository through an online community can be summarised as follows:

- The participants overwhelmingly pointed out that the appearance of the platform should be fun, exciting, and inviting.
- The participants voiced that text alone is not sufficient; multimedia in the form of images, video, and audio should also constitute elements of a knowledge repository.
- Navigation, coupled with ease of use, emerged strongly. The participants believed that the platform should be easy to navigate, especially when contributing and leaving comments.
- Aspects that contribute to a "sense of community" emerged from the findings. The participants felt that working as a team would allow them to produce higher-quality wikis.
- Interaction: The participants felt they received feedback too slowly. It is a definite finding that regular and valuable interaction and feedback from peers are essential characteristics of this knowledge portal.
- Expert involvement, together with regular feedback and interaction, as mentioned above, arose as an essential aspect of a knowledge repository.
- Sharing and visibility to external stakeholders or interested parties emerged as a finding.
- Trust is a strong aspect of public writing; the participants voiced their opinion strongly regarding their feelings experienced when the students made fun of others' attempts. This aspect could be compounded when sharing to external stakeholders as suggested above. When students do not display the maturity to cope with online criticism from their peers within a safe, closed social online environment, the harshness of the bigger social media community could prove to

be problematic. Further study would be needed on what the students mean by “external stakeholders”.

- Maturity is strongly linked to the previous finding of trust; the participants should be mature enough to voice their opinion and likewise mature enough to critically review the work of others.
- Confidence is an aspect that featured highly; the participants voiced their concerns that they were not comfortable with public writing, which is another point that stands in contrast to sharing with “external stakeholders” or “interested parties”.
- Content/contribution guidance, in the form of templates and examples, arose as a finding; this would be important in the early stages of such a knowledge repository.
- Platform usage guidance, in the form of tutorials and frequently asked questions that can assist in the capabilities afforded by the platform when contributing content.
- A sense of purpose and usefulness are strong aspects; the participants need to see value in contributing to a body of knowledge, albeit for self-gain, in order for such a community to be sustainable.
- Reviewing the work of others had value in its ability to allow participants to learn the skills necessary to review their content.
- There was definite value in the wikis contributing knowledge to peers, which assisted the students in their own research projects.
- Managing such a knowledge repository is time consuming and expert involvement in sharing the task is a definite finding of this study.
- Reflective journals were constructive in their application, specifically in realising the feeling of progress. Reflecting gave the participants a voice to air their concerns, comments, and triumphs, and was instrumental in aiding them to realise that they were progressing on their research journey.
- The sense of progress or the visualisation of a journey that leads to completed research outputs is another important finding of this study.

The value in the fruition of a knowledge repository through an online community lies in the composition of the various characteristics and components that emerged from this research. These are summarised visually in Figure 4.17.



**Figure 4.17: Summary of the value, characteristics, components, and their composition according to the participants**

Taking the above into account, the researcher compared the literature reviewed against the research findings to identify further answers posed by the research problems.

#### **4.6.1 Perceived value of a knowledge repository among key stakeholders**

From the perspective of social constructivism (see Section 2.2), the value for students can be found in the zone of proximal development (ZPD). By socially embedding psychological development and pedagogy, the learner can achieve more when learning is guided in this manner, which fits well with the benefits of online communities and knowledge repositories (see Section 2.12).

Thus, from the perspective of promoting socialisation and an alternative path for personal development, this study has shown that students found value in the ability to collaborate and interact with their peers. The wiki entries aided in gaining new knowledge in a centralised environment with optimised focus. In Section 4.4.2 (reflection journal entries) and Section 4.5.2.2 (Reflection Journal 4 feedback), the students' comments were illustrated in Figures 4.9, 4.14, and 4.15, clearly showing how students perceived the

wikis as a driver in their self-learning and as an essential enabler of their research journey. Table 4.2 showed how the student feedback from the first intake affected the course design for the second intake, which further improved the value of the wikis to the students.

Although the 2016 wikis were not elevated to a knowledge repository for the 2017 intake as intended, an exciting outcome, as suggested by the research (see Section 2.12), was that the ability to access and peer review the wikis, whereby the community itself acted as a living repository. This is clearly visible from the students' wiki rated feedback in Sections 4.4.2.2 and 4.5.2.2.

Another valuable aspect that emerged was the exposure to the necessary 21<sup>st</sup>-century skills (see Sections 1.2 and 2.2). The group work aspect of the course required students to collaborate with their peers, communicate with both peers and experts, and to be innovative and creative in solving real-world challenges (see Section 4.4.2.1), all of which will be expected of them in the workforce.

## **4.6.2 Characteristics and components of an online community and knowledge repository**

### **4.6.2.1 Pedagogical characteristics**

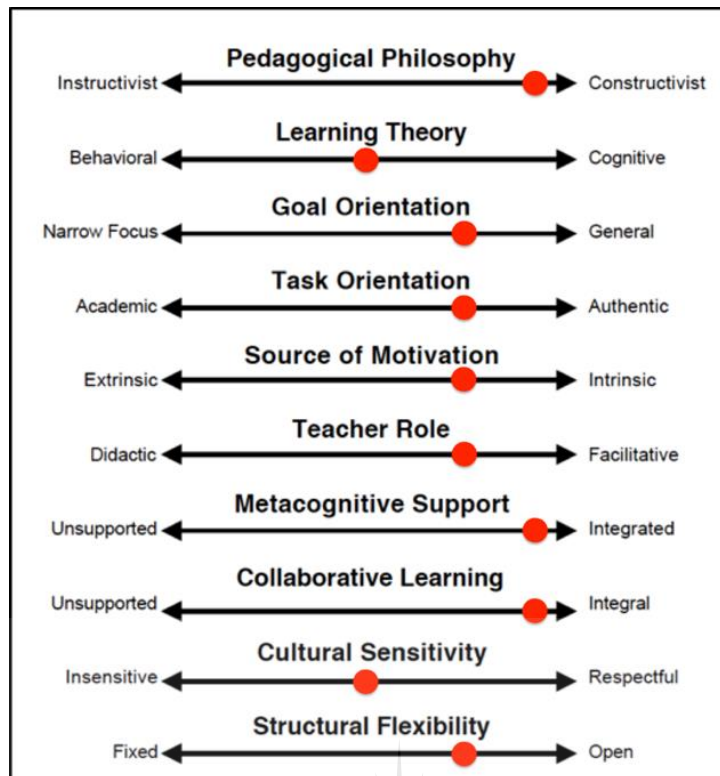
When using the ten pedagogical dimensions of interactive learning systems (see Section 2.3) from Reeves and Hedberg (2003:191), the following characteristics emerge (also see Figure 4.18):

- Pedagogical philosophy: The course is strongly **constructivist**, limiting direct instructions to only three workshops. Tasks and problems were left to the students to complete through group collaboration and peer reviews.
- Learning theory: Both **behavioural and cognitive** characteristics were present in this course, with neither one being applied more than the other.
- Goal orientation: This course leaned towards **general** goals to achieve higher-order thinking and to help students achieve 21<sup>st</sup>-century skills (see Section 2.2). Precise goals formed part of this course to equip students with the tools necessary to complete the course (see Section 4.3).
- Task orientation: Research methodology comes across as a subject area that focuses strongly on academic nature, but this course used the academic ground

rules to achieve **authentic** tasks in the form of research outputs that address real-world problems.

- Source of motivation: The outputs of this course were structured using tasks that contributed to the outcomes. It was **intrinsically** planned to motivate students through higher-order thinking, peer reviews, and collaboration. Reflection journals turned out to be a healthy source of inspiration, possibly due to the higher-order thinking that was achieved.
- Teacher role: Some form of structured teaching was applied during four contact sessions (workshops). These contact sessions were further broken down into work sessions and did not entirely consist of teaching only. The majority of the course, however, relied on a **facilitative** approach through feedback from supervisors to peers.
- Metacognitive support: In order to ensure that the students were aware of objectives and their ability to plan, monitor, and adjust when needed, reflection was **integrated** into the course. This enabled the lecturer to review and adjust the learning experience while giving focused support.
- Collaborative learning: Collaboration was **integral** to this course. Through group work, students had to complete their research proposals, which are the primary outcome of this course and took the entire duration of the course to complete.
- Cultural sensitivity: This course was not designed explicitly for taking cultural sensitivity into account. It is, however, essential to state that South Africa is a country where cultural sensitivity is strongly emphasised due to a diverse cultural heritage. Taking that viewpoint into account, both students and academics remained **respectful** of one another during the duration of the course.
- Structural flexibility: The course required dedication and strong time management to achieve the required outputs. As such, strict deadlines had to be adhered to; however, a **high level of flexibility** was achieved to allow anytime-anywhere learning within these constraints.





**Figure 4.18: Characteristics of this interactive learning system using the ten pedagogical dimensions**

Source: Reeves and Hedberg (2003:191)

#### **4.6.2.2 Supervision characteristics**

When observing the system from the perspective of online supervision (see Section 2.4), the following characteristics emerged:

By dividing the students into groups to produce research proposals, by assigning a supervisor to each group while also facilitating the process online through wiki tasks, peer reviewing, and reflective writing, this system made use of the following characteristics of supervision from an online perspective:

- 1) The group work promoted **collaboration**.
- 2) The team approach fostered a sense of **community**.
- 3) **Peer learning** pooled different skill sets together and promoted self-reflection.
- 4) The approach followed by the instructor was **process** rather than product **orientated**.
- 5) The online format added convenience and allowed for **flexibility** of the learning process.

- 6) The composition of the different elements aimed to **empower** students rather than controlling the process of learning.
- 7) Was **conducive** to **different models** of supervision, as each supervisor assigned to the different groups was able to supervise using their own style.

#### **4.6.2.3 Characteristics of online learning environments**

In Section 2.6, the researcher discussed connectivism, which is described by Siemens (2005:5) as a cycle that starts with the knowledge of an individual who forms part of a peer network. Their collective knowledge feeds into organisations, and the organisational knowledge in turn feeds the network, thus providing continued learning to the individual as a result of these connections. This principle can be found in several Web 2.0 tools to create an environment that fosters collaboration and communication. In the next section, the researcher discusses these tools (the different components) used in this study to create an environment of connectivism.

#### **4.6.2.4 Characteristics from the students' perspective**

During the focus group interview, the students were asked what they perceived the characteristics of an online community to be. The students listed the following characteristics (see Section 4.4.3): “*interaction*”, “*feedback*”, “*innovation*”, “*excitement*”, “*interesting*”, and “*diversity*”. Figure 4.17 further illustrated additional characteristics that emerged from the reflection journal entries.

#### **4.6.2.5 Components of this online community and knowledge repository**

The primary outcomes of this course were a research proposal, conference paper, and conference poster. In order to guide the students in achieving these outcomes, all the components structured around them considered social constructivism (see Section 2.2), pedagogical dimensions (see Section 2.3), and online supervision (see Section 2.4). These were applied using various online tools (see Section 2.6). The first tool used was several wiki entries (see Section 2.7):

- a) **Wiki component:** The wikis were used to achieve several outcomes. First, the wikis were intended to guide students through the process of completing a research proposal, thus it served as a guide for the main research journey. The wikis also achieved collaboration, peer review, scaffolding, and knowledge

creation, which are all aspects that were discussed throughout the literature review.

- b) **Reflection component:** The students benefited more from the reflection journals than was expected. The reflection journal, therefore, achieved more than its intended aim and purpose (see Sections 2.5 and 2.7).
- c) **Knowledge repository component:** For the first iteration, the knowledge repository did not exist, and examples were provided to guide students. The wikis produced during the first iteration (2016) were not at a level sufficient to be used as a knowledge repository for the second iteration (2017) of the study. To overcome this, the students were instead tasked with finding literature on their wiki topics, then peer review the literature and produce their versions as wikis. Subsequently, the wikis themselves became part of an unintended living repository.
- d) **Workshop component:** The literature in Section 2.4 makes provision for face-to-face interaction. As a result, the workshops turned out to be a valuable source of guidance and learning for the students (see Sections 4.4.2.2 and 4.5.2.2).
- e) **Discussion forum / chat room component:** From the student feedback received, having a discussion forum or chat room component could provide added value for the students. This was also noticed by the instructor and commented on in Section 4.4.4.

#### 4.6.3 Composition of an online community and knowledge repository

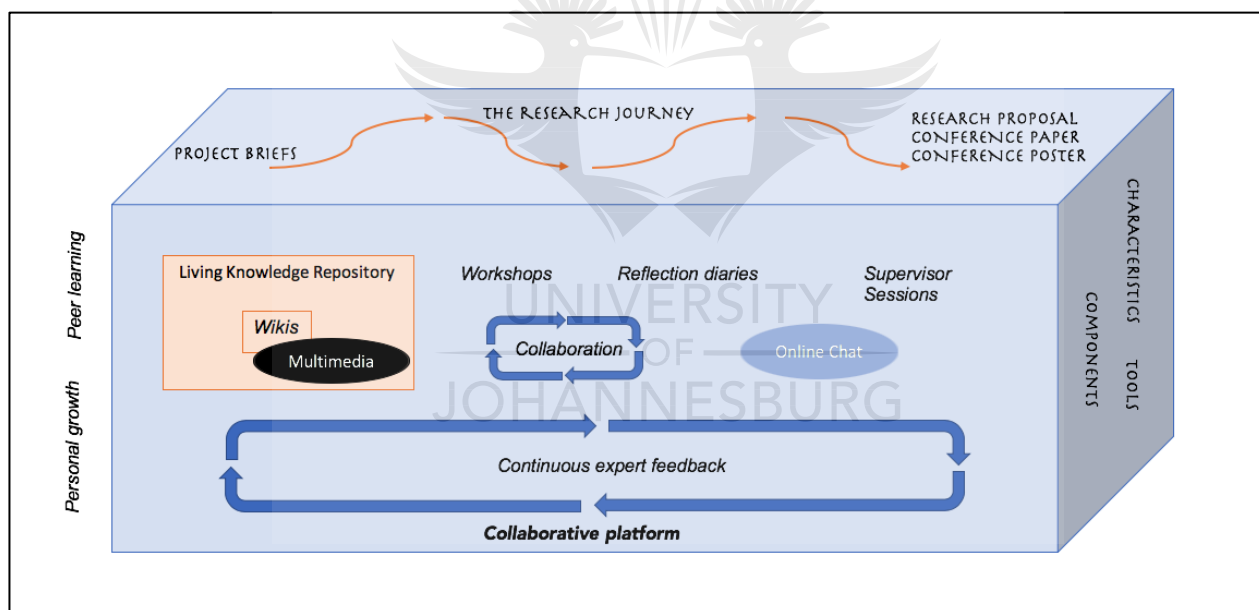
The researcher used various methods to evaluate the effectiveness of this collaborative environment, all of which were suggested by the literature (see Section 2.5). Pooling all these together resulted in the value indicators discussed earlier in this section, the characteristics, and finally the components. Next, the researcher discusses how the composition of these characteristics and components addresses the sub-problem posed in Chapter 1 and as visualised in Figure 1.1, where the researcher conceptualised what the composition of a collaborative platform and knowledge repository would look like.

When considering what form the composition of an online community and knowledge repository would take, it is clear that the values identified should be intrinsic to the design. Furthermore, the characteristics identified should underpin each component where possible, but the characteristics should be identifiable when looking at the sum of

the parts of the assembled community and knowledge repository. The visualisation that was presented in Chapter 1 has been updated after taking the research findings into account in Figure 4.19.

#### 4.6.4 Composition of an online community and knowledge repository to centrally manage knowledge creation and facilitation

This study was blended in nature and had online and contact components to the current implementation. There were four workshops, blended supervision, online wikis, online reflection journals, digital course content, and online tests with three outputs, namely the research project, a conference paper, and graded coursework components. The findings of this research indicated that the composition worked well and students felt that they were well prepared for pursuing research in the future, be it for future studies or work projects. This study therefore found that in this blended approach, the composition of the different components of the course worked well in achieving its goal.



**Figure 4.19: Conceptualisation of the collaborative platform at the end of this research study**

The research findings showed that the platform itself is considerably intricate – more so than was initially implied. The platform alone will never be sufficient in achieving the perceived goals. Instead, it is the combination of really complex characteristics together with the components blended in a mutually beneficial fashion in order to centrally manage the facilitation of knowledge creation and sharing through an online community.

The conceptualisation that was illustrated in Figure 1.1 was adapted to include the characteristics, components, and composition that emerged as a result from this research, as illustrated in Figure 4.19.

Figure 4.19 illustrates that the composition of the platform, its characteristics, components, and tools all function together as an enabler to accomplish the outcomes of this course. Through interaction with the platform and the tasks at hand, the students were exposed to peer learning in the form of wikis and personal growth through the reflection journals. It also shows that human interaction through face-to-face meetings such as the workshops and supervisor sessions are integral to this environment. From the research also emerged the continuous nature of expert feedback and the constant need for collaboration between peers and experts. The figure also illustrates how the wikis became a form of a living knowledge repository. The research also showed that there is a need for an online chat facility where peer discussions and expert confirmation would be a valuable source of information and would contribute to a sense of community. Figure 4.19 mainly illustrates the components and should be read in conjunction with the characteristics mentioned in Section 4.6.2, as well as the composition as discussed in Section 4.6.3.

The nature of DBR means that the researcher has to draw a line at some point (Section 3.5), without this line there may never be an end to the research. The researcher is of the opinion the research has answered the questions, in so far as understanding the needs of such an environment much better than before undertaking the study. But it is also clear that, should the research be continued with future iterations of the model, further results and outcomes are still possible. Making it difficult to explicitly state that at the end of this research the final answers have emerged.

## **4.7 CHAPTER SUMMARY**

The objective of this chapter was to understand the results obtained from the reflection entries, as well as the focus group interviews. Firstly, the LMS platform of choice was explained, followed by the layout of the course structure and how its implementation facilitated the research objectives. The results from the reflection entries and focus group interview were discussed and analysed in relation to the three research objectives under the headings “2016 Iteration” and “2017 Iteration”. The changes made from the feedback of the first iteration mostly had a positive impact on the second group of students.

The research discussion concentrated on the perceptions and attitudes regarding learning about participation in an online community, the value of knowledge creation, and lastly stakeholder needs. Throughout the analysis and discussion, the researcher was also interested in whether the composition of pedagogy and tools was effective in demonstrating whether the application thereof has met the research objectives in a manner that is feasible, reusable, and practical. The chapter ended this discussion of the findings mapped against the characteristics found in the literature review in order to provide a consolidated and holistic response to the research problem. The analysis of the data obtained from both groups showed exciting findings and aligned well with the literature.

The chapter that follows provides the conclusions of this research and makes recommendations for a future iteration cycle of this research, as well as additional suggestions.



# **CHAPTER 5: SUMMARY, CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS**

## **5.1 INTRODUCTION**

The attempted aim of this research was to determine what the most applicable requirements are to centrally manage knowledge creation and sharing in the teaching and learning of research methodology to postgraduate students. The value of a knowledge repository and the characteristics and components of an online community and knowledge repository were investigated. Lastly, the study attempted to investigate how the composition of such an environment can meet the expectations of supervisors and their students.

Chapter 1 provided and outlined the background and aim of this study. Chapter 2 provided a theoretical discussion of the sub-questions, through academic literature, the concepts, characteristics, requirements, positions, and global views on online collaborative platforms as an enabler of teaching and learning. The discussions emphasised areas of prominence, dangers, and contemplations that must be considered when the conceptualised model was developing within the platform. Chapter 4 focused on the findings and analysis as guided by the research sub-questions and objectives as gained through the decided research design and methods of Chapter 3.

This chapter provides a summary of the research study, the findings, recommendations for a third iteration, followed by additional considerations and the applicable research limitations, and ends with some final thoughts.

## **5.2 SYNTHESIS OF THE RESEARCH QUESTIONS**

This research project originated from the dilemma of teaching diverse postgraduate students from various backgrounds and disciplines in research methodologies for research projects. The research problem stemmed from the importance of providing quality supervision, and the lack of research into peer learning as a supervision method for students. The argument made in Section 1.3 encouraged collaborative methods, which add value, as a means to accommodate growing and diverse student populations through increased participation and authentic academic activities. Research projects

developed individually or in smaller groups by students provide an intense learning experience, which does not only have to be provided by the course instructor but can also be obtained from peers.

Group research encourages social interaction and peer-induced learning because it allows students to be supportive of one another in information-seeking practices, information retrieval, building knowledge, critical thinking, problem solving, and knowledge acquisition. Because of the lacuna in empirical evidence that cognitive tools have on classroom practices and student learning, the research addressed collaborative learning among peers, together with peer learning supervision, to find a new approach to postgraduate supervision. This was done by allowing students to engage through group learning, social interaction, and peer-induced learning. The researcher aimed to address this goal through the following research question:

**How can an online community and knowledge repository be used to centrally manage the facilitation of knowledge creation and sharing in the teaching and learning of research methodology to postgraduate students?**

The following three sub-questions were identified to answer the main research question:

- 1) What is the value of a knowledge repository for the teaching and learning of research methodology as perceived among key stakeholders?
- 2) What are the characteristics and components of an online community and a knowledge repository for the teaching and learning of research methodology?
- 3) How can the composition of an online community and knowledge repository as identified from Sub-problems 1 and 2 meet the research methodology information needs of supervisors and postgraduate students?

The outcome of each sub-question is briefly synthesised as follows:

- a) **Value:** The research has shown that the value of a knowledge repository lies in its ability to guide students in successfully completing their own research journey. The ways in which this is achieved are answered by the remaining research sub-questions.
- b) **Characteristics and components:** Various characteristics played a role in this prototype community and knowledge repository, namely pedagogical, supervisory, connectivism, and motivational. The characteristics flowed from and



complemented the use of several components, namely wikis, reflection, knowledge repository, workshops, and interactive chat.

- c) **Composition:** The composition of the components and characteristics aids the value of the prototype in guiding students to successfully complete their research journey (see Figure 4.19), while exposing them to lifelong skills and 21<sup>st</sup>-century competence.

## 5.3 FINDINGS AND DISCUSSION

This research found that all the components and characteristics have a relationship, which in their combination function favourably (as illustrated by the final prototype in Figure 4.19) to provide a solution that is capable of sustaining the research problem that was posed. This solution should have a purpose, clear goals, and create a sense of progress within an environment that supports a sense of community. The significant findings that emerged are discussed in the following section.

### 5.3.1 Value of a knowledge repository among key stakeholders

By socially embedding psychological development and pedagogy, the course achieved the ZPD (see Section 2.2), which fits well with the benefits of online communities and knowledge repositories (see Section 2.12). The students found value in the ability to collaborate and interact with their peers. The wiki entries aided in gaining new knowledge, and the reflection journals (illustrated in Figures 4.9, 4.14, and 4.15) clearly showed that students perceived the wikis as a driver in their self-learning path throughout their research journey. From the ability to access and peer review the wikis, the community itself acted as a living repository (see Sections 4.4.2.2 and 4.5.2.2).

Lastly, the exposure to necessary 21<sup>st</sup>-century skills (see Sections 1.2 and 2.2) in solving real-world challenges (see Section 4.4.2.1) was another valuable outcome.

### 5.3.2 Characteristics of an online community and knowledge repository

#### 5.3.2.1 Pedagogical characteristics

When considering the ten pedagogical dimensions of interactive learning systems (see Figure 4.18), the characteristics that emerged from this study can be summarised by the following statement:

The course followed an integral collaborative approach – philosophically relying on constructivist pedagogy, incorporating both behavioural and cognitive learning theory in a flexible structure, which included higher-order goals that were authentic and intrinsically motivational – and followed a facilitative approach while also integrating metacognitive support and respectful behaviour.

#### **5.3.2.2 *Supervision characteristics***

When considering the system from the perspective of online supervision (see Section 2.4), the characteristics that emerged can be summarised by the following statement:

The diverse models of supervision and process-orientated academic approach resulted in a flexible learning process for the teams, which empowered students through peer learning and collaboration to foster a sense of community and purpose.

#### **5.3.2.3 *Online learning environment characteristics***

The Web 2.0 tools used in this study promoted connectivism (see Section 2.6), which was found to be an important characteristic of this study. Connectivism is defined as a cycle where the knowledge of individuals who form part of a peer network collectively feeds into organisations, and the organisational knowledge in turn feeds the network, providing continued learning to the individual through these connections.

#### **5.3.2.4 *Characteristics from the students' perspective***

Several characteristics emerged from the participants themselves, which confirmed what was found in the literature. The participants found importance in an environment that is fun and inviting, makes use of multimedia, and is easy to use. The sense of community experienced and all the characteristics associated with the inclusion of wikis were valued together with the ability to trust their peers and engage in mature dialogue, which directly influenced confidence to participate. The reflective journal entries provided further value and contributed to the overall sense of purpose and progress.

#### **5.3.3 *Components of an online community and knowledge repository***

The components applied to this study considered social constructivism (see Section 2.2), pedagogical dimensions (see Section 2.3), and online supervision (see Section 2.4). This was applied using various online tools (see Section 2.6). The tools all contributed to the

research and were illustrated in Figure 4.19. The crucial contribution of each tool is summarised below:

- a) **Wiki component:** The wikis can be seen as the spine of the prototype around which all the characteristics and components fell into place (composition).
- b) **Reflection component:** The reflection complemented all the characteristics of the platform and achieved more than its intended purpose. Not only was the researcher able to use the reflection journals, through observation, to evaluate the prototype (see Section 2.5), but the students themselves provided positive feedback as it being a source of motivation and its impact on self-adjusted learning witnessed (see Section 2.7).
- c) **“Living” knowledge repository component:** The wikis themselves became part of an unintended living repository by creating a sense of community (see Section 2.12), and the wikis assisted with knowledge diffusion (see Section 2.9) for students who were able to learn from others.
- d) **Workshop component:** The face-to-face interaction had a positive effect on the students and added a modern approach to blended learning, which favourably complemented the prototype as a source of guidance and learning for the students (see Sections 4.4.2.2 and 4.5.2.2).
- e) **Discussion forum / chat room component:** The feedback pointed to the value of a discussion forum or chat room component to enhance collaboration and peer learning.

#### **5.3.4 Composition of an online community and knowledge repository: Knowledge creation and facilitation**

In Figure 1.1 the researcher conceptualised what the composition of a collaborative platform and knowledge repository is suggested to look like.

From the research conducted it is clear that the values identified should be intrinsic to the design. Further to that, the characteristics identified should underpin each component where possible, but the characteristics should be identifiable when looking at the sum of the parts of the assembled community and the knowledge repository. This study found that in the blended approach, the composition of the different components of the course worked well in achieving its goal. The students who participated in all the activities were

able to successfully complete the outputs required for their research journey (see Section 4.3).

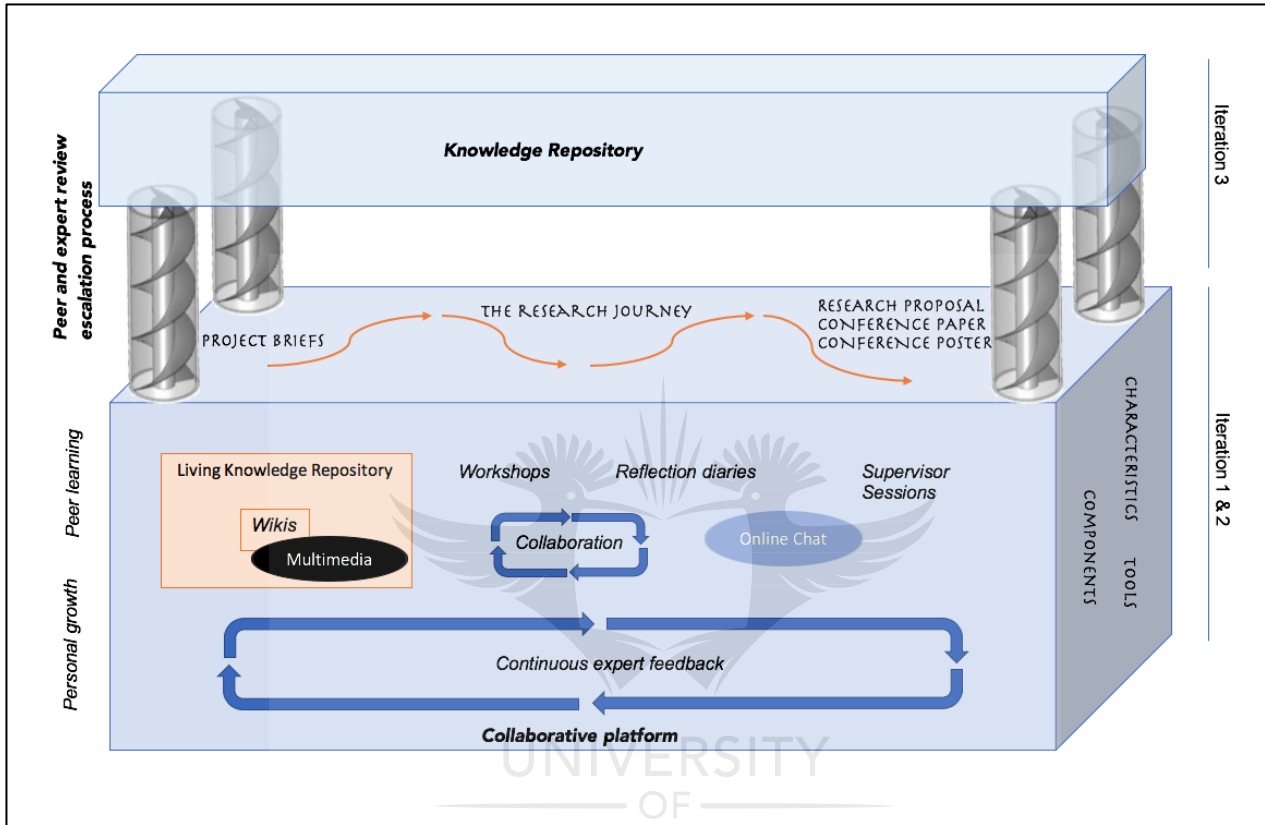
In synthesising the research, the findings have shown that it is the combination of the characteristics together with the components blended together in the online community that contributed to centrally manage the facilitation of knowledge creation and sharing. All of this was taken into consideration to update the prototype accordingly and was visually illustrated in Figure 4.19.

## **5.4 RECOMMENDATIONS AND FUTURE RESEARCH**

This research underwent two iterations. One of the challenges with the iterative nature of DBR, as mentioned in Section 3.5, is to know at which point the research is completed. The first iteration of this study was conducted in 2016 and was discussed in Section 4.4. From that feedback, as well as the instructor's reflections in Section 4.4.4, the model was revised for the next iteration, which took place in 2017 and was discussed in Section 4.5. For purposes of this research, a third iteration would fall outside of the time allowed to complete the degree; however, a prototype was delivered as a product of the study (see Section 1.4.1). A third iteration would, however, be beneficial since the first two iterations partially achieved one of the intended goals of this research (see Section 1.4.1), which was to elevate the best wiki entries through a peer and expert review process to a knowledge repository for future members of the community (see Figure 5.1). The reason for this was mostly because the quality of the wikis produced did not seem to be at a suitable honours degree academic level (see Section 4.6.1). The wikis produced in 2017 did, however, meet the criteria and can be used to complete the intended elevation and creation of a knowledge repository through a third iteration, which is proposed as a recommendation for further research, together with the recommendations made in Section 5.5. Figure 5.1 visualises what the initial conceptualisation would look like should the current research findings be included in a next phase for honours degree Research Methodology as a subject.

Such a third iteration would undoubtedly uncover additional characteristics and components that would further augment the visualisation in Figure 5.1. What would be critical for the continuous expert feedback to be realised is the buy-in from a number of expert supervisors, in addition to the module instructor taking ownership of the wiki-writing process and to support the continuous expert feedback process. The continuous

expert feedback cannot rest with only one module instructor as one person cannot be regarded as an expert on all the methods discussed and produced. It was neither possible in 2016 nor in 2017 to obtain buy-in from experts to support the development of the wikis. In the event that experts never actually provide input into this process, the peer review process of the students must be used more extensively as a possible alternative approach to populating the knowledge repository.



**Figure 5.1: Proposed third iteration to complete the initial goals as set out by this study**

This section discussed how a third iteration could be used to accommodate the initial goals of this study that were not addressed during the 2016 and 2017 iterations. The next section introduces additional recommendations that were identified while evaluating the research findings of this study. Other features depicted in Figure 5.1 are highlighted in Section 5.5.

#### 5.4.1 Recommendations for future iterations

Xing and Marwala (2017:14-15) suggested that although the business of higher education has remained unchanged for centuries, advanced technologies will significantly impact the way in which research and research processes are conducted.

The *New Media Consortium (NMC) Horizon Report* for 2017 on higher education has found that online, mobile, and blended learning is inescapable and that learning ecosystems require agility to support practices of the future (Adams-Becker *et al.*, 2017:2). Specific areas of impact will be seen within the next generation of LMSs, adaptive learning technologies, artificial intelligence, and personalised learning.

Taking the above statements and predictions, as well as the research findings, into account, the researcher recommends and suggests the following options for further research iterations:

- (i) Repeat the study with a broader range of students from different departments to investigate cross-programme collaboration.
- (ii) Repeat the study where subject experts are included by providing them with a source of motivation.
- (iii) Repeat the study but ask students to rate the wiki entries using a voting scale.
- (iv) Repeat the study with an instant chat facility where peers and experts can interact and collaborate to increase the frequency of feedback and a sense of confirmation.
- (v) Consider converting some of the workshop content to interactive online learning content that will further accommodate flexibility.
- (vi) Consider increasing the supervision component to include more online activities.
- (vii) Consider increasing and further accommodating flexibility and frequency of interactions with experts.

## **5.6 RESEARCH QUALITY AND LIMITATIONS**

Case study research requires a significant amount of effort to ensure that thorough research is conducted (see Section 3.7.1). The researcher is of the opinion that the necessary amount of effort was applied when evaluating the research against the following five criteria suggested in Section 3.7.1:

- (i) The DBR approach followed (see Section 3.5) contributed to ensure that the research followed a focused and systematic approach.
- (ii) The researcher is of the opinion that this research has been presented and reported on in such a manner that each chapter followed layout and logic that were transparent and clearly communicated – through the background, necessary

literature, research design, analysis, and conclusions – the study in a manner that was sufficiently sound and understandable.

- (iii) The research evidence provided supported the design followed by this study and the story told by this dissertation was sufficiently representative of the research conducted.
- (iv) The researcher is of the opinion that the data analysis and discussions were undertaken in a manner that was of sound mind and that the research was presented accurately and honestly, portraying the story in such a manner that another opposing story cannot be uncovered from the data collected.
- (v) The outcome of this research, which was presented in Figure 4.19 and discussed in Sections 4.6 and 5.3, contributes new ideas to the academic body of knowledge.

Identifying and acknowledging limitations further improve the level of thoroughness when evaluating the quality of research. The following were identified as limitations applicable to this study:

- (i) The focus of this study was limited in its application to two cohorts of students registered for an honours-level course on research methodology presented by the Department of Information and Knowledge Management within the University of Johannesburg. This has consequently affected the generalisation of the findings, discussions, conclusions, and recommendations made by the researcher. Since the University of Johannesburg is a comprehensive university, this study may yield different results if conducted at a traditional or developing university not situated in an urban environment. In addition to the aforementioned, piloting this study with students at master's degree level may also yield different results.
- (ii) In hindsight, having only one focus group interview also imposed limitations on the research outcomes. One of the respondents monopolised the focus group discussion (see Section 4.4.3.5). On many occasions, Respondent 2 provided contradictory responses and some opinions seemed to have been swayed by her incessant negativity. To minimise the effect this limitation had on this study, the researcher, as explained in Section 3.7.2.2, pointed out any contradiction between the interview and individual feedback received from the reflection journals throughout Chapter 4. Including more focus group discussions in order to gauge the group's perceptions in addition to the Reflection Journal 4 entries would have been beneficial.

- (iii) The research was conducted on the institutional LMS system, Blackboard, which was fully licensed and intrinsically included all the necessary components to conduct this research. Repeating this research on an open-source LMS may influence the generalisability of this model, since an open-source LMS may not be able to support the required components. This means that additional tools may need to be harnessed, which may not be possible or feasible.
- (iv) Similar to 21<sup>st</sup>-century skills requirements (see Section 2.2), this study required digital fluency from all participants (see Section 2.4). This may, however, not always be the case; in which event a similar study would yield different results.
- (v) The Industry 4.0 implication of mobility was available but not explicitly tested in this research; the Blackboard Mobile application could therefore add another dimension to this research. When the students were asked if they used the application during the focus group interview, the responses indicated that they were unaware of it. Repeating this study with students who make use of the mobile application might yield different results.
- (vi) This research was conducted on a course that applies modern blended learning pedagogy. One of the findings was the value the students found in the face-to-face meetings. This can be interpreted as a limitation should this study, using the developed prototype, be repeated for a fully online course.
- (vii) This prototype was specifically developed for the field of research methodology, which may be considered a limitation as the prototype may not be applicable or sufficiently generic in nature for other subject fields.

## **5.7 CONCLUDING THOUGHTS**

The journey to push boundaries and find new and innovative ways for institutions of higher education to remain relevant should not be underestimated, nor should it be discouraged. The fact remains that the world is continually changing and shaping the minds of future generations. Technology is lowering economic, personal, and business barriers, in ways that create entirely new ways of consuming goods and services by altering our personal and professional environments. Knowledge-driven economies are the future and education can help people to ride the wave of change by giving students the needed 21<sup>st</sup>-century work skills.

In this study, digital technologies have shown new ways of owning knowledge, through interactive teaching and learning models, by encouraging collaboration and peer



learning. This study further showed that knowledge repositories can successfully achieve research output through collaboration and strengthening of research capacity while improving the quality of output. These advances bring many benefits to higher education and specifically to research innovation that is sparking knowledge creation.

The researcher experienced great personal growth during this study, especially being from a strong technological background, and much was learned from the teaching and learning perspective with respect to grounded and sound pedagogical theory. The researcher believes that this study is an important contribution to finding alternative ways to accommodate diverse postgraduate student populations, especially in the African context. In closing, from the quote with which this dissertation started, it is important to enjoy the world in which we live, and when you can have fun along the way, it makes your contribution even more profound.



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## APPENDICES

### Appendix A – Academic Activities 2016 Intake

Date	Activity
5 February 2016	Project Briefs
12 February 2016	Workshop 1
4 March 2016	Workshop 2 Test 1
8 March 2016	Wiki 1
15 March 2016	Research proposal Draft 1 Wiki 1 peer review
22 March 2016	Reflection journal 1
8 April 2016	Workshop 3 Test 2
4 May 2016	Wiki 2
10 May 2016	Final Proposal and Data Tool
18 May 2016	Wiki 2 peer review
24 May 2016	Wiki 3 Reflection journal 2
27 May 2016	Feedback Data collection starts
7 June 2016	Wiki 3 peer review
30 June 2016	Data collection complete
13 September 2016	Reflection journal 3
9 September 2016	Workshop 4
4 October 2016	Final Conference Paper Conference Poster Draft
28 October 2016	Poster competition
8 November 2016	Reflection journal 4
9 November 2016	Focus Group Interview

## Appendix B – Academic Activities 2017 Intake

### Academic Activities 2017

Date	Activity
10 February 2017	Workshop 1 & Project Briefs
3 March 2017	Workshop 2 Test 1
7 March 2017	Wiki 1
15 March 2017	Draft Research Proposal
28 March 2017	Reflection journal 1
31 March 2017	Workshop 3 Test 2
5 April 2017	Wiki 2
10 May 2017	Final Research Proposal
11 July 2017	Wiki 3
18 July 2017	Reflection journal 2
6 September 2017	Draft Conference paper
19 September 2017	Reflection journal 3
4 August 2017	Workshop 4
3 October 2017	Final Conference Paper
3 October 2017	Conference Poster
1 November 2017	Reflection journal 4

## FOCUS GROUP INTERVIEW



9 November 2016

15:30 – 17:00

IKM Boardroom

Riaan Loots

Arno Louw

**Knowledge portal creation for postgraduate  
studies through online communities**

## **Welcome**

Good day and welcome to our session. Thanks for taking the time to talk to me about your experiences in your research methodology studies.

My Name is Riaan Loots, I am doing my Mphil IM on: The use of online communities and knowledge repositories to centrally manage & facilitate knowledge creation & sharing.

This is Dr Arno Louw, he is co supervising my studies and is present today to moderate our discussion.

You were invited to participate because you are currently enrolled for Research Methodology with Prof Mearns. Some of the concepts I am researching have been applied to your academic year within her course. Therefore you will be familiar with the concepts and will be able to provide valuable feedback.

## **Guidelines for today**

- Name tags; for me because I am terrible with remembering names.
- No right / wrong answers only differences of opinion.
- Comments may be positive or negative, all of which are valuable.
- Do try and express yourself with dignity when voicing your opinions.
- You do not have to be in agreement with others, but listen respectfully when they voice their views.
- We are video recording, please try to speak one at a time, but don't worry the recording will be kept confidential and all responses will be anonymous.
- The atmosphere is casual and relaxed so we are on a first name basis.
- Please turn your phones on silent, if you have to respond to a call, please do so as quietly as possible and re-join as quickly as you can.

## **Opening question**

What did you like about the Research Methodology module this year?

## **Rest of questions**

How does the metaphor of research being a journey contextualise your experience during the course of this year?

**(Platform and instruction questions)**

What did you think of the course layout in Blackboard and the instructions provided for each academic task that you had to perform? (looking for references to some students who made mistakes by not following the instructions)

What suggestions do you have for improvements?

**(Group work questions)**

What was it like to work in a group on your academic tasks?

**(Wiki questions)**

For Wiki 1 and 2, examples wikis were provided. For Wiki 3 – 5, no examples were given. How did you experience and relate to the task of writing the wikis with respect to the provisioning of examples vs no examples?

Would you say that you put much effort into composing your wiki entry?

Would you say that you put much effort into peer reviewing (actually reading) each other's wikis?

How do you think the wikis can be used to generate a good knowledge repository? i.e. what do you think future groups would use effectively in terms of writing well-formulated and informative wikis?

**(Peer review questions)**

How did you feel about sharing your wiki on Blackboard for others to view?

While performing the peer review how did you experience reading the work of others in relation to your own wikis?

**(Reflection questions)**

How did you experience the reflection diaries?

Would you see reflection diaries for your own personal benefit or do you need instructor feedback for purposes of confirmation?

What have you learned from reflecting formally on your research journey?

***(Online community questions) The online community referred to in this regard only includes the members of this module, their instructors and the supervisors.***

What is your opinion with respect to the sense of an online community, taking into account the use of wikis combined with peer reviews.

What would you recommend to create a greater sense of community on the online platform?

What can be done to promote and stimulate discussion within the online community?

### **All things considered question**

What do you perceive the characteristics and components of an online community to be?

### **Summary questions**

How do you think this course has helped you prepare for pursuing further research?

If you had the opportunity to design and change this course, what would you change?

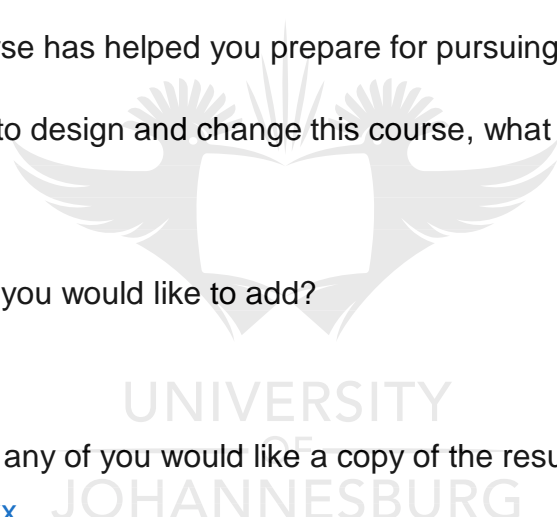
### **Final question**

Is there anything else that you would like to add?

### **Conclusion**

Thank you for your time, if any of you would like a copy of the results you can tell me now or email me on [xx@uj.xx.xx](mailto:xx@uj.xx.xx)

Enjoy the rest of your day.



## Appendix D – Focus Group Interview Transcript

# FOCUS GROUP INTERVIEW

9 November 2016

15:30 – 17:00

IKM Boardroom

**Facilitators:**



Riaan Loots & Arno Louw

**Participants:** For reasons of confidentiality their responses have been kept anonymous.

UNIVERSITY  
OF  
JOHANNESBURG

**Knowledge portal creation for postgraduate  
studies through online communities**

**(Opening question)**

**Facilitator:** What did you like about the Research Methodology this year?

**Respondent 2:** I personally liked the whole process of our ..., the manner in which we analysed our data. The software we used. The fact that it was an experience. Learning new software and the challenges it had to bring forth and knowing that we could still overcome them regardless of people not wanting to help us. Because initially, the idea was to get someone to help us and someone who specialises in that software and that. And before that person was like "No I will not be helping you anymore", and he left us along the way. And then it enabled us to figure it out and to know how I will learn more about it. And it is a software by other companies, and when you put it on your resume, you're like ok now I can use this software, and it's like oh wow great. You know it's a great one. So, for me really it was like, ok I learnt a new skill. So, it was part of those things like ha, that's the only thing. Well, of all the other things that I've enjoyed with this Research Methodology and the fact that we were chosen for the poster. Ooh Ah! (air pump, followed by laughing) That's one thing that I enjoyed, all right finally, well a level of, I don't want to say hard work because I don't believe in hard work. I believe in working, a level of work pays off, you know. So that's how I feel.

**Respondent 4:** Ok, for me I can say I liked the fact that we got to work in groups. And yes, I really learned how to work with others you know, sharing and just gathering everything together. And which is important for the corporate world like collaboration and teamwork, it can get you far. That's what I liked.

**Respondent 3:** Can I also say something? The most I liked, it taught us, to like research skills. Cause for us we came from an undergrad background (inaudible). Learning our research skills by going round and speaking to sub-ordinates, extract information from them. So for us, for me, it was like a broad feeling. Giving us that platform to make, how to gather raw data, not just one data element, just to go and ja [sic].

**Facilitator:** Sorry, just the background, did you say undergrad?

**Respondent 3:** Undergrad background and then we didn't have like a research module before then. So as a postgraduate now being exposed to a certain module they also need to have a research module so for us. It was (inaudible).



**Respondent 5:** For me, it taught me a lot about responsibility and accountability because our facilitator was a bit slacking, so we always had to figure out um, things ourselves. So it was a bit challenging. So we had to be accountable for everything; not saying it's our facilitator's fault. It is our fault as well because we have been students and we are the ones who are going to pay, so I learnt from the facilitators as well.

**Respondent 6:** I won't say I enjoyed anything on the program (group laughing) because (quick laugh) it was challenging and it required us to invest a lot of time. So since we were working in groups and came across with challenges in working with the corporates. Sometimes you find that your partner, she doesn't come to the party, so you need to do a lot of work. So during the whole process of this module, I find it a lot. Especially in terms of time management because every time we submit we are supposed to submit on time. If we don't submit we are in trouble (laughing) and in terms of decision making.

**Respondent 3:** And also the supervising role (laughing). As a student you know it's nice some of us are having the best supervisors you know. So, it was that relationship between me and my supervisor. I've learned a lot between our relationship. So, it was a [sic] good exposure for us as students to have someone who's there to manage you.

**(Rest of questions)**

**Facilitator:** Would you say you have gone through a journey in this process?

**Respondent 4:** Yes (nods head).

**Facilitator:** In what way?

**Respondent 4:** A lot (laughing).

**Respondent 1:** I think the reason why some of us would say that its been a journey, it's because like you, you know that when you're an undergrad everything is just being spoon-fed, and you take things for granted. Like when it comes to time and stuff like that. And when you get to postgraduate level, everything is in your hands. So everything you have been taught for the past three/four years, now you put it into practice, which is quite difficult. Especially when it comes to like time management. In undergrad, they used to make it very hard on us so we used to like submit like all of our assignments on one time and stuff because there someone who were supervising; seeing to it that you actually submit on time and now we see you know. You're just going to class and they just tell

you what to do and everything is all in your hands. It's very difficult so yeah it's a journey. It's a journey.

**Respondent 2:** It was like reading a map upside down (group laughing) at times. Whereby you understand that all along it's like going from here to Mount Kilimanjaro, while closing your eyes and hoping that things will work out at the end. Because for some people like us who work in groups, that are not really used to group dynamics, it becomes a very steep hill so to speak. And I mean this whole experience of being an honours, a postgrad, is a journey on its own. Like you travel with people who are different, and they try to complain and understand. And you know that this is a journey, and you are going to see different people. You need to come to your senses and be polite and forget about the fact that, forget about your emotions and invest in it. And understand that people are slacking and there are people that need pushing. And "ooh, ah" it has been one of a, one hell of a ride (smiling), bumpy ride (laughing).

**Respondent 4:** Ja [*sic*], the journey kept getting harder and harder.

**Respondent 2:** Even now, I'm still like "Why am I getting these marks and for what, I invested". For what I put in, why?

**Respondent 6:** Sometimes we get marks that we don't understand. We spent so much time doing the work and the results were like (smiling).

**Facilitator:** Interesting talking about time, you said "trying to figure out software", was that an obstacle for you?

**Respondent 2:** It was, it was an obstacle and, um, for that fact it was a great obstacle. Merely because it was something that I had never dealt with and initially when we speak about software you think, "ok this software is going to do everything for me". I mean it's a software (shrugging shoulders). Its, you know, going to give everything to me (inaudible). I'm just gonna [*sic*] press, and there's nothing much I'm gonna [*sic*] have to do. It'll just analyse my data and voila. You know, only to find that nooo, (shaking head sideways) not even, and it talks about missing data, and you're like "what is missing data?" But I am not a statistician; this is not for me. And people that are meant to do this are not willing to do so. You have to pay ransom for it and (laughing) for me it's like, it's not that deep. It should not be this serious man. I should not be paying money for this project. But then again you have to understand that ok, some other things they may require one to put in

much effort into learning and understanding. And it has been a very gruelling obstacle, however, it was conquerable.

**Facilitator:** Do you still see it as an obstacle?

**Respondent 2:** I don't see it as an obstacle now because, now I'm like, ha, I'm the one that knows it now, and everyone is coming to me, asking me! So "Respondent 2" you know it better, and I'm like hmm. So, I get to, even at the point of, where I am required to rectify things on my own. I am able to go back on the software than rely on someone who is not available for me at the time and do it on my own. So now it's one of those things that, I am a fundi (swivels head) (group laughing).

**Facilitator:** Does anyone else want to reflect a bit more on the "journey" aspect?

**Respondent 6:** I would like to see some of the research methodology aspects being introduced at final year so that those students who reach honours level, they know what should be expected. When starting this year, we were surprised; everything was new to us.

**(Platform and instruction questions)**

**Facilitator:** What did you think of the course layout in Blackboard and the instructions provided for each academic task that you had to perform?

**Respondent 3:** I think from my point; the struggle was in terms of accessing the study material cause sometimes when you need something at this particular time it's not available on Blackboard. Especially if the lecturer promised to include it. It gives us a process to get information, but each of those tasks on Blackboard was perfect for me because everything was outlined and ja [sic].

**Facilitator:** When you say the content was not available, are you referring to slides etc.?

**Respondent 3:** Yes, and also links for submitting. You find that, for example, tomorrow you have to submit and then you want to submit today, and the link is not on Blackboard.

**Facilitator:** Did you think that the instructions that were provided with the activities for submitting were clear enough?

**Respondent 3:** If you have any computer skills it's clear. But if you are struggling with computers, it can be a bit confusing.

**Respondent 2:** I'd like instructions on how to use Blackboard. Sometimes it changed so you couldn't just upload your work. You had to press ctrl + v, you know, and if you're using a mac, you press this, if you're using a normal computer you must press this and sometimes, some of us. It didn't even need to be required, because at that time you do know, a computer, but a certain proficiency that we need or certain things that we need to understand. That's ok; this has changed. You can't now just take data and upload it. Some people require that we upload a word document others a pdf. So time and again it became a challenge for some people. Sometimes it's not a challenge where I need to submit the wrong way, but I would probably need this help to like "tell me how do I submit again?", "which buttons do I press?" And then I'm able to do it.

**Respondent 3:** And you know what was another challenge. Like some links where we needed to submit our assignment, (inaudible), some links had restrictions, we needed to use laptops. Sometime we submit late, like eleven o'clock, then the only source you have is your mobile phone. Then you can't submit your assignment cause of the format of the link. So those are the difficulties.

**Facilitator:** Are you aware of the Blackboard mobile app?

**Respondent 3:** Inaudible.

**Respondent 2:** (Nods head, No)

**Respondent 6:** Inaudible.

*\* General murmuring indicates group was not aware of the mobile application for Blackboard*

**Respondent 2:** But the app came later, the updates, in terms of the system updates?

**Facilitator:** No I'm talking about the mobile app (pointing to phone) for Blackboard. So you were using the browser on the phone?

**Respondent 3:** Yeah, I was using google chrome, cause you can't use internet explorer for Blackboard you need to use...

**Facilitator:** Ok, I just wanted to know which tool you were using when you struggled.

**Respondent 3:** Oh, ok.

**Facilitator:** What suggestions do you have for improvements?

**Respondent 3:** Just have methods that will enable me to submit easily.

**Facilitator:** With methods? Do you mean instructions?

**Respondent 3:** You can even include instructions there. The layout is fine, but the link for submitting. Like now, I had a problem in terms of submitting. Make that easier for us because you know technology, the role of technology is to make things easier. So if now were using technology and I'm still facing difficulties, it means something has to be changed.

**Facilitator:** Would you say it's not user-friendly?

**Respondent 3:** No, it is user-friendly, it's just this tool.

**Respondent 2:** And not having to have multiple web pages just to get to like one page. Just to get to that one submission I have to get through ten pages before I get to submit.

**Respondent 4:** Also, they should make submission links available before submission date, not on the day or after the submission date, cause we had those struggles. With one of our submissions we had to email the lecturer, "Where's the link?", "Open the link". We want to submit, so those things, they are unnecessary.

**Respondent 6:** Because sometimes its Turnitin and you submit, and you get (inaudible) then you need to redo your work, which you can't if the link gets placed late.

**Facilitator:** Are you guys enrolled for another Blackboard community called Postgraduate Forum?

**Group:** Collective "Yes".

**Facilitator:** Because there is a Turnitin assignment that you can use at any time.

**Respondent 2:** So you could go there and submit anything?

**Facilitator:** Yes, there is a Turnitin assignment setup that you can submit any time to check for similarities.

**Respondent 6:** So, when you submit there, does it saves your document?

**Facilitator:** No, it's specifically set up for postgrad students to check continuously.

**Facilitator:** When you say you were waiting for the similarity report to come back, how did it make you feel?

**Group:** Collective laugh.

**Respondent 6:** Ok, some of these lecturers' state that if you get more than 20%, they will take 10% but on others, it's a 0.

**Facilitator:** When they say that, is it a plain blanket policy, or do they look at it?

**Respondent 6:** No, because sometimes you find that they highlight some of the keywords on your cover page that doesn't count as content.

**Facilitator:** So, they did distinguish between actual content?

**Facilitator:** So, it didn't make you worry?

**Group:** Collective laughter.

**Respondent 4:** We were worried, all the time.

**Respondent 6:** All the time.

**Facilitator:** Any other improvements that you can think of?

**Respondent 1:** Less words, because you guys are talking about instructions. Some students have a difficulty of interpreting what's been said. So, I think it would be much more simpler if there were visuals to show you on how to upload your file; how to access to access certain documents on Blackboard. And sometimes I think also, what's this? Probably an improvement whereby you have multiple access points to cater for disabled people that are blind and allowing them to listen to words and stuff. So, I think those are the kind of improvements that can be made.

**Facilitator:** Was the language too difficult or was it too academic?

**Respondent 1:** It's too academic to a point where sometimes a certain word might mean different things in content. So yeah.

**Facilitator:** How did you work around that?

**Respondent 1:** Sometimes you have to ask for help. If you don't know how to properly follow instructions you have to ask for help. And sometimes you come across people that

are very... They just tell you “no, that’s very simple, you just upload your document” and bear in mind these are people who know how to follow instructions. Because sometimes you find, what’s this, even when you write a test. They are like “You know like save and submit your answers.” There’s like two links for that on the same page. So, you don’t know where to go, like there, or there.

**Respondent 6:** Especially when you are a first-year student. They do complete the whole test, but they just leave it there without submitting. When you go through the process of, especially the multiple choice, you select the answer then it would write something at the top there “saved”. Then by the time you complete everything you have this thing in your mind. “Everything has been saved” you only need to submit, only to find, you didn’t submit the whole test.

***(Group work questions)***

**Facilitator:** What was it like to work in a group on your academic tasks?

**Respondent 3:** It was nice (general laughter).

**Respondent 2:** Inaudible.

**Respondent 3:** I think it depends on the type of group dynamics you have. It also depends on the personalities. Some people are fine to work in groups, some people didn’t like to work in groups. It has disadvantages and advantages. But from my point, I think it was nice to “hear” from different people.

**Facilitator:** Is there a difference for you between working in an online group and working in a face-to-face group?

**Respondent 3:** No, I don’t think there is a difference.

**Respondent 5:** For me the experience was good. It was good because I had two other members which, one was very participating where the other basically did nothing. So for me it was good.

**Respondent 1:** Virtual groups are much more better because you get to pick certain brains, unlike online communities, where I say one thing, you are not going to question it, you’re just going to build on it. As for virtual, I say something you question it. You open my brain to be more open-minded, and I feel like when it comes to like group work, I don’t like group work that much and I actually realise the importance of it at this level. So,

I think the school or the varsity as such must integrate, uhm, working in groups from the first year so that people can get used to working in groups. Coming forth to a point where they can even study together because it actually helps. It opens your mind to like a lot of things. So virtual groups over online communities.

**Respondent 2:** Well, personally for me, uh (laugh) working in groups is yoh [sic], yoh [sic], yoh [sic], far from fun. I feel it, although it's important that it has to be done (inaudible), at some stage, to the point whereby, I mean we are, we know the implications. And because we know the implications, you know what is in it for you, and you know that if I don't pull through I tend to lose out of everything. I had to even get my marks (inaudible). Then you find people that are, you would constantly have to, there are people like, there's no group leader. I think it's important that groups have a group leader, even if it means that the supervisor appoints a group leader because we tend to be scared of ourselves. We tend to be like, I can't take on a group leadership role because he'll feel inferior, he'll feel this way, he'll feel like you know one, two, three and four. But then again there's this one person who's always going to be constantly pushing the group and has to account for the whole group, to which, if people are working, you find that are working while in varsity, and they don't have time to come through. You have to be like the one that, ok you know what I'll come through to the lecturer and talk to the lecturers and have confidence and organise one, two, three, four and five. So, there has to be that level of accountability from that one individual. Who's going to push the whole, cause people are able to work but they are just reluctant. You just need to push them from the back, and then they produce stuff. So, working in a group is quite a challenge, and all you want to do is say "thank God, we are done" (group laughter)!

**Facilitator:** Does everything you say now account in the online environment as well?

**Respondent 2:** For me, in an online environment there's also an element of groupthink and parasiting [sic] you know not working to do things in an online group whereby some people you'll beg, please talk. I think it's harder even in an online group. Some people complain about data (frowning), some people complaining about I'm having to babysit, my network connection is one, two three and four, you know, they even get to escape better if it is an online group. Then when its live, then when you come live together, there's a level of you sit on top of each other's brain you can't think straight. You'd rather be able to think straight alone and come back to produce the work and say this is what I



did, and we have to analyse it together. So, I believe working individually then coming together to amalgamate.

**Facilitator:** Do you think there is something as an online leader?

**Respondent 2:** There are online leaders.

**Facilitator:** Can you identify them?

**Respondent 2:** Well there are people who...

**Respondent 6:** It's difficult, you can maybe in terms of, the person who contributes the most which mean (inaudible) then the one who would write something and then just disappear.

**Respondent 2:** Cause you find passive leaders, you find charismatic leaders, you find you know, different types of leaders. I could bring in the work but be very weak. You know, and be very, the person who doesn't you know. I could bring in the work, but he could speak more, he could be very vocal in an online community. And then we would listen to him, and I will produce the work, but he does not work per se, he just talks. He is able to dominate in that regard, but he doesn't produce the work. So, it also becomes you know, undermine, there is a little bit of blurredness and mistiness going on.

**(Wiki questions)**

**Facilitator:** For Wiki 1 and 2, examples wikis were provided. For Wiki 3 – 5, no examples were given. How did you experience and relate to the task of writing the wikis with respect to the provisioning of examples vs no examples?

**Respondent 3:** I think it was important for her to give examples for wiki 1 and wiki 2. Cause for most of us it was like maybe I need to ask. So that is why I think she decided not to put examples for wiki 3 to wiki 5. So the wiki things for us was after having a discussion in terms of how we should create a wiki and how we should submit. The instructions were clear. Even though for the first time with wiki 1 we had some difficulties. But for wiki 2 until 5 everything was good.

**Respondent 4:** We got to use them for the posters.

**Respondent 6:** I made a mistake. I think I didn't read the instructions very well cause there was a tab in the top left corner written "create wiki" and then this example. So, instead of submitting my wiki, I submitted on the one given at the bottom (group laughter)

**Respondent 5:** I think the examples set the standards high for what was expected from us. So the first time you are looking at the example and you're like, yoh [*sic*], I can't do this. But then you start typing and typing, and ok, at least I've got a guide. So I'll type something similar to this, it must be good.

**Respondent 6:** For me, mine was similar to the example, when you read the example it's like ok this is how I should do it.

**Facilitator:** Would you say that you put much effort into composing your wiki entry?

**Respondent 4 & 5:** Yes.

**Respondent 4:** We did, because we had to refer back to what was discussed, as to what are your methods, and stuff like that. So, it was a mission.

**Respondent 6:** Yes because it was counting towards our year marks.

**Respondent 4:** At the same time we had to. You have to bear in mind you can't go and write the same thing because of plagiarism. So you have to use the words the other way around but saying the same thing that your group members are saying.

**Facilitator:** Did that teach you how to write?

**Respondent 4:** It did, it did, like even the whole research. It was important skills you know, all that.

**Respondent 2:** The challenge I had with the wiki was when a lecturer would take for instance in the peer review. A student who were deregistered is on the peer review. So, you don't know what the implications are if you give that student the marks or you don't give the marks. And if you don't give the student the marks you are afraid that the lecturer will implicate you for saying you didn't read the wikis. It was there, you didn't see it you missed it, or if you give the student the marks you didn't read the wiki, your work is not reliable. So you don't understand what to do in that regard and the lecturer is not easily accessible. So then at the end of it all you are still implicated. To which I feel it is quite unfair. They should know the student deregistered, but if the student deregistered, why is the student still on the list? Because it's confusing you know.

**Facilitator:** Are you referring to the list provided to do the peer review or the actual wiki pages?

**Respondent 2:** The wiki peer review list. So you're given the peer review to review each other's wikis and give each other marks. So that one it came in as a catch twenty-two.

**Facilitator:** For students that deregistered, they submitted for wiki 1 but not for two, three, four, and five. Did you pick that up?

**Respondent 4:** Yes.

**Respondent 6:** For these wikis, we were tired from doing all the research reports. So, you find that you can't read anymore. You look at the names on the list, and you just go through the wikis, and you're going according to what you are understanding there.

**Respondent 4:** I didn't understand why we had to mark, because you don't know the topic you're just going to go ok, you think this is right, maybe this is the right method so, I'm thinking she wanted to test how we write, if we understand the definition of what you've mentioned maybe, or I just didn't understand at first.

**Respondent 5:** So, with regards to giving us a peer review to mark, I think she is giving us a platform because we are about to go to the corporate world. So, at some point you are going to write some stuff. So it's important for us to know how to peer review each other, to know how to detect good academic work from not so good academic work, me, I think it was a good thing that she gave us those tasks to review each other.

**Facilitator:** Would you say that you put much effort into peer reviewing, did you actually read each other's wikis, and did you gain anything from it?

**Respondent 4:** Honestly, honestly, sometimes I wouldn't read them. The others I would read the first three and be like, ok (laughs). And then read the comments "good", and I'm just gonna type "good" as well. Good and then scroll on "good" and move along.

**Facilitator:** Do you feel that what you have read there was enough, was it satisfactory?

**Respondent 4:** Yes, and it was just too much, too many to read so, we're tired, it happened when I was tired.

**Respondent 6:** The more you read, you get tired. Then you end up looking at some technical aspect there, and ok, this person did reference very well and did write a lot of contents, then I'm giving him a five or.

**Respondent 1:** I think to also add onto that. When it comes to reading someone else's wiki, it is very important to read the introduction and conclusion just to check if they complement each other. If they don't complement each other, that's when you know something is wrong, and you know that you have read through everything. But if the introduction complements the conclusion, then it's really unnecessary.

**Respondent 6:** But the problem with that is that you don't even understand my research methodology. How are you going to access or even give me fair marks?

**Respondent 5:** And things that pushed us to do further reading on the whole research, so if you don't understand his methodology I have to go back, to refer, to connect this as this and then go back.

**Respondent 6:** And hoping you pass your research reports, and time is not there (laughing).

**Respondent 2:** And also, I felt like, I felt like the wiki, the wiki was, when I looked at the marks. I felt like my doing the wiki was very unfair. Why was I even doing the wiki initially? Why did I even waste time doing the wiki? To which I am required to produce, to which, I do produce and a small minor mistake, I am [*sic*], my work doesn't qualify. Take, for instance, its sample selection, and I say data selection as a heading, my whole work is implicated, but my work is relevant to the topic that is given. It's just that there was a simple mistake. So, for me, at some stage, I felt like you know what? When you look at the marks, the marks do not even reflect a level of you tried. You put in the efforts. Even if it was a matter of maybe probably you didn't, you do much but your work is not reliable but, when you look at this, was this person able to give criticism on the work given. To show that I just was trying to figure out what method, are you using? To cross-examine that [*sic*] my work is not reliable cause you've given me a link to comment, you've given me the work, you've given me the additional view. If I didn't evaluate the persons work then on the same day, you check did this person even try to comment on some peoples work. You know, just to say ok now I can state that this person, 100%, she, her work is not reliable. I just felt that was very unfair.

**Facilitator:** Do you feel the wiki was valuable, now that you look back?

**Respondent 2:** Was the wiki valuable? For me, because uhm, for me I take things relatively, you know. Things like (inaudible), for me, was the wiki valuable? I felt it was unnecessary. I felt it was unnecessary, because I still, the level of work I put into the RM is the same as the wiki, you see. So in any case, anyone who was going to read my work is reading from a critical perspective, and it's an academic perspective. So if I am putting on the wiki, anyone who is reading the wiki is critical. They're not going to be reading like a teacher. They are not a teacher, they are people that understand the work. So when they read my work they read the wiki, they see the similarities, why am I, it's too much work, why are we wasting time with wikis? That's just me. We do opinion papers, we do research reports, we do wikis, we do reflective diaries for me (inaudible) unless (inaudible).

**Respondent 3:** For me, the purpose of wikis is for collaborating fairly, cause some of us we didn't know about the topic, your topic, but if I open the wiki, your wiki, now I have that thing. I can [sic] be able to learn about your topic. So, it is valuable from my point of view because it helps us to learn about other studies also.

**Respondent 2:** For me you pick up, we do research, we do, we research, and we reference probably twenty-six references, and that's a lot on its own. So when you speak about pickup studies, I am already picking up study [sic] from different references, I am already learning a lot, information overload (laughing). There's too much information overload. There's little time; it's a one-year module. There has to be a level of balance. Too much work and trying to prove that, are you working? Are you getting something out of it? We are doing as much as we can. We are typing more than a hundred thousand words, and we are having to type wikis as well. It hampers on productivity for me.

**Respondent 1:** I would also like to add onto what Respondent 3 just said. Other people are very interested in knowing about your topic. If they were interested about knowing what your topic is, they could have chosen it when we started to choose (laughing). So, like personally, I feel like that no-one has time to knowing (pointing hand to indicate) different projects like you focus on your assignment cause you want to do good in your assignment. If you were interested in someone else's studies and stuff like that, you could have chosen that topic.

**Respondent 2:** And with interest comes things like the conference competition, whereby I will be there standing telling you about my study you know. So with wikis, I don't even

have time to do a peer review, to review everyone's work, because I still have an RR lacking. I still have to do an RR. I'm building a wiki in an honours, there's too much work.

**Facilitator:** So, do you check on other people's methodologies?

**Respondent 2:** Yes, we have checked them. We tried to look to [sic] other people's methodologies. But because I am focused on the here and now. I'm focused on, I need to progress and finish this thing. I need to finish it, and I need, at some later stage. Learning is progressive in any case. I just don't get to the point of honours and stop learning. If I pursue a masters, I'll learn a different methodology. If that is what I wanna do.

**Respondent 5:** For me it was very empowering in terms of knowledge, because when I do something I look at the bigger picture. I won't just do things for now. When I registered for honours I knew what I was in for. Not that I got what I expected; what I expected was much bigger, but I knew what I got into and in such a way that next year. Next year I'm planning to go into the corporate world and it won't be so soft and comfortable. So, I'll have to do, I'll be given my own task, and I'll be given someone else's task maybe to review before it gets submitted and all that. So for me, the wikis and the peer reviews were very empowering.

**Facilitator:** Do you think that wikis can be used to generate good knowledge repositories?

**Respondent 4 & 5:** Yes.

**Respondent 6:** But I think, the way that they are being done should change, especially when it comes to marks. It is better to say to students, ok student you have wikis and this is how you are going to use your wikis. You're going to write anything that relates to your work or studies so that other people will be able to, but based on that I won't be giving any marks because what is the point of going through twenty-eight wikis. Reading everything, assessing people, but then in the end, you get a two (laughing).

**Respondent 5:** I also think that if you get a low mark, it just reminds you where to work harder. For instance if maybe on the part of research design you got a low mark that means you need to revisit your research design and work on it because the audience has spoken. It means it's weak.

**Respondent 4:** Thing is with the wikis we only got our marks the same time, all of them. So there was no way that you could go “ok I am lacking here”, and I have to improve on the next one and read the comments. We only got the marks at the same time.

**Facilitator:** So, the wikis didn't help you with preparing for the ...

**Respondent 4:** For the next one.

**Respondent 6:** We didn't get any feedback, we just got feedback now.

**Respondent 4:** Exactly, everything only now.

**Respondent 2:** If anything on my side it's, they're demotivating because on my side we, I am writing the RR. Already we are going back and forth to our supervisors telling us we are not getting the plot, you know. You are not getting the plot change this, change that and then still not having gotten the plot you are meant to write the wiki. You find supervisors still lacking in their own aspect. They are not delivering things on time, but you are now requested to go write a wiki on research design and still your research design you are, still not getting the plot. So, for me, it is one of those things whereby the wiki is just consuming. It's. It's not making me be [*sic*] productive. It's not making me want to even look at my next wiki and say you know what, “let me just put something in there”, you know. Let me just put a kick in there because in any case, you haven't gotten the plot there. You are still writing here and, when are you going to get it and then still after here, you still get a zero.

**Facilitator:** Do you have any suggestions?

**Respondent 1:** I would also like to add onto what was said. Previously it was mentioned about if wikis improved our writing, I feel that when we started with our wikis, it's a huge writing and then when we get the marks it's not that pleasing, and then you get a comment like, uhm, your writing like an undergrad, this is not academically...

**Respondent 2:** Teaching mode.

**Respondent 1:** Teaching mode, exactly, you know! And then you get to a point whereby you know what I feel like. Most of us have turned into a walking and talking thesaurus because we tend to take what's in the book, or on the net and just take it as it is, and be a thesaurus and just type it up. So, I wouldn't say it improves our writing that much. It doesn't.

**Facilitator:** And the timelines to which wikis was spread out. Do you think having to start working on the next wiki, was it an indication that you should be here by now, how was it?

**Respondent 6:** The time frame between the submissions was fair but the problem on my side was the feedback. Because today we are given a topic, we need to write about research design. You write about research design, you don't get the feedback. And on the other side on your research methodology, you still have to write something about research. You don't know if the [*sic*] that's in my wiki, is the correct one. Should I use it on my conference paper or? You see.

**Respondent 2:** And I also think that the timespan, the period was, you, we, they didn't think much. I don't think it's you know, maybe they did think, but I feel like if. Take for instance we do data, data selection né [*sic*], and then we have to do it in September and then come September we look into fees must fall. This fees must fall things happening and now on campus when you research you can't collect the data, but you are meant to write the wiki in two weeks' time. So what are you writing? What did you collect? What are you basing [*sic*], we collected, so just there and then your work is not reliable. So then you can't even ask. Can you give me enough time? Because they calculated this amount of time. That this is supposed to be done in a set of five weeks. And with all these things, they don't even they, it's not even. I had. I came back and fees must fall hampered my study. You can't come and explain that because now you were supposed to do something and anticipate it. Think and know that you should have done something. Collected data like that and you find some of us, our supervisors have not even asked for permission to conduct the study because of the implications that have been there.

**Facilitator:** Do you think the last few comments can be seen as suggestions?

**Respondent 2:** I think they should.

**Facilitator:** Is it also fair to say that you tend to make assumptions when writing the wiki whereas you would have liked to have gone through the work, be exposed, so you are in a better position to write?

**Respondent 2:** Hence I said that initially, I think wikis are ridiculous. They hamper productivity; it's like to much information overload. We are not being productive enough if we are given such things that will to the point whereby even a wiki because of the timeframe you tend to forget that there was a wiki.



**Facilitator:** Then would more wikis, less wikis or no wikis?

**Respondent 2:** (laughing) There were no wikis before, and it was ok.

**Respondent 6:** There were no wikis before, and the level of work was too much then.

**Respondent 2:** So I think.

**Respondent 3:** And things change.

**Respondent 6:** The increase in terms of technology, and the way people change obviously it's via digital. So, wikis for me are factual, or you are going back and take your pen and paper.

**Respondent 2:** No, for me as I learned the reason. I still state I'm not basing my conclusions on something I have not looked back into. And the amount of work that was put in. I'm not taking away, there has to be... The world is advancing. In our advancement let us now try to advance at a pace, let us advance according to the people. We can't choose to take a stand that is far from us and use it and implement it in the students that we know. That the students are not performing. We know that especially UJ is an institution that has a lot of people that, the standard even for registering and coming in is lesser than other universities, and then implement tech or tools that are far-reaching. That will even hamper on the productivity of the students and not even enable students. Hard work is imperative yes, hard work is relative. Yes, to universities hence the scores. So for me, I believe instead of trying to for progress sake [sic], for people to graduate on time, for people to progress, and the university to make the profits, because as for we know, for every graduate the university makes money. So for people to progress, for us the aim is for the university (inaudible) for people to progress and finish in due time. Let there not be a lot of distractions, a lot of information overload, a lot of things like information overload are things that you need to look into that they have found productivity. And if there is too much information coming in. We have to do one hundred and five sources, a thousand and what-what and I, we are not getting anything from it. Then why are we (inaudible), such things, such methods. If anything, let us put measures that will empower our students and not try to. Let's decolonise things, let's not try to take things that are far from us. Let's bring, come down.

**Respondent 3:** (laughing) So, you believe the wikis are far from us?

**Respondent 2:** I believe that I believe that, for the pro, wikis, I'm not saying we are writers, we are learning how to write and because we are learning how to write definitely with wikis we will be able to write a wiki. Given any day, they can give you a wiki in your sleep and call it something else. You'll be able to write it and say write a paragraph of data sampling this and this. And you will be able to write it because you have written it before, because a wiki is a reflection of what you have written before. So, why for me it's like, do away with the wikis if anything. If there is something better you can stimulate our minds with, and, and make us, you know, we are too, grab our attention let us do it, but with wikis its hampering I'm not going to lie, it's hampering.

**Respondent 6:** The other thing that we have to do, we have to compare our qualification or programme with other postgrad programmes. Other programmes they don't have such things like wikis so, in that way we seem as if our programme, there is too much work compared to the other guys who don't have all such stuff so, for me wikis should be there or maybe there you guys should find ways to improve or do things differently.

**Respondent 3:** Ok when I look at the... Our qualification information management. So, I look at knowledge sharing, knowledge culture, and the reason wikis are there, are [sic] to give us that platform to share information. Not just to talk about sharing, sharing, sharing but we don't share any information. So wikis are there for us to share information, to help each and every one to know about your study. If you don't want to know about my study just go to peer review and write fantastic (laughing). There are people who are keen to know what we are supposed to have done, what data methods we have done to evaluate our data. You get my point. So wikis are valuable. Do you understand?

**Respondent 6:** As an information management student, I believe you need to be exposed to such inaudible.

**Respondent 2:** And can I say from my side also when you speak of other degrees they come with their own challenges, with their own work. You cannot compare them. You can't even say they're not doing wikis. We're doing wikis. They're not doing arithmetics. We're not doing arithmetics. They're doing arithmetics. So it comes with different challenges. Its beyond comprehension, different strokes for different folks.

**Respondent 6:** They say infoman [sic] is a lot of work, even that guy who graduated cum laude, the Chinese guy, he went back to PMG because...

**Respondent 2:** Comprehension, you know what comprehension, you are able to take in what you can you know, even he, probably he is also struggling in PMG or whatever the case might be and still in that, took two modules, there is something that he is struggling with. He is probably not even reaching what he has to reach. And still here in this [sic] modules we are still, having our own challenges and our sufferings in this modules so even with this wiki thing and this inaudible (laughing).

**(Peer review questions)**

**Facilitator:** How do you feel about sharing your wikis on Blackboard for others to view?

**Respondent 2:** You could manipulate that, I have. I know the three of them, they read my work, they know my name, they know my surname. Even though I have 5 mistakes or 10 mistakes, they'll be like I know Respondent 2, with her I am just going to give her a 7, I am just going to give her a 6 because I know her and I mean I wouldn't want to see her here next year. I mean, let me be fair, as he would say at times (pointing to another respondent), we shouldn't be selfish let everyone pass (laughing).

**Facilitator:** Can I make the assumption, relating to what you said earlier about empowerment, that you empower one another?

**Group:** (Collective laughter and heads nodding yes).

**Respondent 3:** But it is a nice thing to share the information but, it is also...

**Respondent 6:** Because there are [sic] no personal, just academic stuff.

**Respondent 3:** And you're also waiting for feedback.

**Respondent 4:** And then you find your friend makes a funny comment while sitting right next to you. He says I am going to say this, and then he does. So it wasn't a big deal. People just commented because it's like Respondent 2 said, I know her, I know them, respondent 2, me respondent 6.

**Respondent 2:** There is a level of... honestly, you can say immaturity, but it's also in the sense that you know what if it is in relation to maturity. My level of intellect tells me that you are bigger than this institution. So mine is to make sure that you graduate in due time. You know my level of maturity is saying that you know what, you need to be out of here, out of this sophisticated prison (laughing).

***(Reflection journal questions)***

**Facilitator:** How did you experience the reflection diaries?

**Group:** Collective reaction: Some smiled, others laughed, one respondent said “Ooh” in a high pitch, another responded remained expressionless.

**Respondent 2:** How do you say “your perception is wrong”? How do you say that someone else’s perception is not right? How do you give, how do you grade perception and say you only get seventy-five, seventy-four percent for seeing things this way? For me, reflective diaries, is giving your opinion on stuff and then getting low marks for it. I mean this is how I felt.

**Respondent 6:** In terms of marks (shakes head), no.

**Respondent 2:** I felt, I got. I always. Even to opinion papers we type, and they say no you didn’t see it, it’s your perception how do you say I’m not right for perceiving things in this manner and especially with a reflective diary. It’s a diary whereby I’m able to write about how I felt at this level. How my experience was, and then my experience doesn’t qualify, your experience is not 100%, you should have gotten a better experience at this and given enough information to tell us, so I am giving you low marks because you’re not telling me enough of your experience.

**Respondent 6:** You can’t even give me feedback based on that. How can you give me feedback based on my personal opinion?

**Facilitator:** Is the diary for you more personal than the wiki?

**Respondent 4:** Yes.

**Respondent 3:** Yes it’s more personal. I think it was one of the requirements for the reflection diary to be honest you know, to communicate in there your experiences and then what is it that you face in challenges.

**Respondent 4:** It is more general, like the whole research methodology. It doesn’t focus on one thing from attending classes your wikis, your conference paper, everything.

**Respondent 2:** I think with the reflective diary there should uhm, create effort if anything, like the effort you put in, the effort you put in, in, not even the effort put in but the amount of time it took to write this reflective diary and I think there should be like a bonus. Let’s

help you kids just for writing (laughing) because really its experiences and perception. It's my reflection and how can you tell me I'm wrong for seeing things this way?

**Facilitator:** Were people honest in their diaries?

**Respondent 3:** I was honest.

**Respondent 4:** I was.

**Respondent 6:** Laughs.

**Respondent 2:** Honesty is (inaudible). You see how things are relative in life because now you can tell me I'm lying, you can't tell me that I'm lying that, that I was happy about this. If I'm to say this was quite a bumpy ride and I didn't, for the, you know, I wish. I couldn't wait to be done. Already you are saying to the leader this thing is. I shouldn't be doing, already she comes in like ooh, I'm gonna give you two, we will see if you, you're not interested now. You find it boring? I find reading this boring you know. So, it comes with that mentality as well and a level of judgement a level of. So for me when I get the marks that I get I'm getting, I feel like, yoh [sic], she probably took off heads.

**Respondent 5:** For me, I was very honest, and even under comments she was like "thank you for the honesty" and the marks were good. It was very good.

**Respondent 2:** What is very good?

**Respondent 6:** Inaudible.

**Respondent 5:** They were like seventy-two, seventy-five percent.

**Group:** Collective chatter (inaudible).

**Respondent 6:** There is no criteria.

**Respondent 3:** Yes, there is.

**Respondent 5:** There was.

**Respondent 3:** She said we must (inaudible). There is criteria for wikis, for reflective diaries.

**Respondent 2:** And if (inaudible) is lying, saying that my, my, circling out people for that thing, it's your, she's not gonna say you were wrong and she is not gonna go and ask

him. Did you do this? Is this what happened? You know. Because, it's one of those things, it's one of those things. If honesty means lying so that you get one hundred percent cause.

**Facilitator:** Would you see reflection diaries for your own personal benefit or do you need instructor feedback for purposes of confirmation?

**Respondent 5:** For me it was.

**Respondent 6:** If I get low marks, how am I to benefit?

**Respondent 5:** I think it was for personal gain because I had a chance to vent out my frustrations to the lecturer and maybe give out suggestions as well. So it was a personal gain.

**Respondent 4:** For me it was. I didn't gain anything from writing, like seriously what I wrote there is what I've been telling my friends, it's what we've been talking about. The stress and stuff. I didn't gain anything.

**Respondent 3:** There was a personal gain for me, cause when I spoke about primarily difficulties in this module. So for me it was a platform to communicate with her and so indirectly communicate with my supervisor (inaudible)(group laughter). So for me it's a communication tool.

**Facilitator:** What have you learned from reflecting formally on your research journey?

Group didn't quite understand the question, rephrase:

**Facilitator:** Does the diary tell a story of your journey?

**Respondent 6:** Yes.

**Respondent 4:** Yes.

**Respondent 5:** Because also I would mainly write out, maybe on the reflective diary, you realise that when you're busy typing your experiences you realise that ok I've been having these difficulties and this is how I managed to get *all* of this (inaudible) so, they do.

**Respondent 2:** For some other things when you reflect you're like, ah that doesn't matter, this experience doesn't matter. She doesn't need to know that. It's one of those experiences that because I overcame the peer review why talk about it.

**Respondent 5:** I think when you say "she doesn't need to know that", I think in a way she does need to know that. When she prepares the course content, she knows how students actually felt about this so that she is able to accommodate her feelings as well.

**Respondent 2:** Unless she's counting on us, that's why I'm saying she doesn't need to know unless she's going to come back and counsel you and talk to you about it. You're like ok, I see some concerns here. So how do you? Fixing this, how? The solution because automatically with a reflective diary there has to be an outcome. What you've learnt from it at the end? You know sometimes you don't learn stuff at the end of the journey. You just want it over and done with, and you also want intervention to which you don't get, you know. You reflect, pour out your heart, talk about it, and you're like you know what maybe she'll hear me, maybe she knows me in person by reading my story, you know. Maybe she will read my story and come back to me and say you know what, "I hear what you're talking about and trust me I've been here before, you'll be better". Maybe I'm fighting with my supervisor. I'm not getting feedback that says you know what we'll deal with this matter, unless people, seriousness is relative again. You now probably feel like, if I were to talk about, I'm being harassed by my supervisor then I would get more attention. If I'm saying my group members are not understanding this, can you please at least, you know. This and this is happening. There is no intervention from my supervisor I've reached a dead end, you know and instead you are meant to now say I've learned from this experience. I've learned from this, and that's why it's not easy to fully express because, sometimes you don't learn from the things you say you know what, tough life, tough.

***(Online community questions)***

**Facilitator:** What is your opinion with respect to the sense of an online community, taking into account the use of wikis combined with peer reviews?

**Respondent 3:** Yeah, there was (inaudible).

**Facilitator:** Did you feel part of something?

**Respondent 3:** Yes, part of my own study (makes quotations in the air) (group laughter).

**Respondent 2:** I felt there was no time to feel, there was no time to feel. There was not time to feel and to really enjoy because there is a lot of work. So, mine is too. I just need to get it done. There is no time to be thinking about am I enjoying reading this. Am I enjoying? It's one of those I don't have time to... Catching any emotions and feelings (group glares at respondent), I must just. (Respondent notices group reaction) Sorry maybe, I'm too critical (looking at the group while laughing) (Group starts to laugh).

**Respondent 3:** Carry on...

**Respondent 2:** I just felt there was no time to feel, you know and stop and feel a bit and ooh, maybe let me write this, ooh there's time. Already when you're typing, you're looking at the time. You know time crunch, and when you review its like I'm reviewing because I need to review. I don't have. It's not. I'm not given a choice but to review, you know. So, for me, there was no time to feel and say I'm enjoying this, it's a happy environment, it's a learning curve for me and you know.

**Facilitator:** So what would you do, to create a greater sense of community?

**Respondent 2:** The only...

**Respondent 5:** I think that there's pressure behind the obligation that you need to finish this and submit it. I think it takes away the fun out of it. Other than having to do it because you really love it and you're actually gaining something from it. But if you are actually gaining something (**Respondent 3:** You like it.), yeah, and you're enjoying it then you are gaining something.

**Respondent 2:** I only got to learn this is a community of practice when I, in knowledge management, we were taught of communities of practice. In the undergrad we didn't learn much about wikis, I only go to learn ok, oh. So, when we saw the wikis, ah, community of practice. Based on what we were taught in knowledge management. Oh ok, I was meant to enjoy it, to [sic] this manner. This was meant to happen, I was meant to, knowledge sharing, it's this, it's that. So undergraduate there's not...

**Respondent 3:** But also, because you're (inaudible), before doing something you analyse the purpose of that system which has been communicated.



**Facilitator:** Which is knowledge management?

**Respondent 3:** Yeah, which is knowledge management. In this scenario but also in my mind you must understand the qualification, understand what is it that you need to proceed and utilise your qualification whereby to succeed in life. For example, if you do information management you need to understand about knowledge sharing, you need to understand about wikis, and then you need to understand about all communication tools because, this is your industry, this is what you do for life. So, you need to familiarise yourself with what this aspect of information management is.

**Respondent 2:** So can I, you speak about you need to internalise and understand the wikis and what-what.

**Respondent 3:** The purpose of everything that is being communicated in the honours programme.

**Respondent 2:** Ok, for some people, like take for instance me myself and me, when I came into the honours programme mine was too, politics doesn't work for me, I just, I also want to be diverse, multi-faceted in my narrative. I wanna know a lot of things, you know. I want to be a jack of all trades and a master of everything. So I wanna be that, so let me also take on I'm ready for this challenge, I'm ready to take on a different challenge you know. I needed to know what this offers now but, I know at the end the fruit of, the reward of this, you know. I even got to the point of asking my supervisors, can you please explain to me the purpose of us having to do so much work. Like having to do the first year again but now intensely we're doing ten modules, you know. For someone who comes to me and say I'm doing politics, how can honours be this hard for you and I'm like, I'm doing ten modules in honours to which I'm required to do, bring in this and this and this. And for me, there's then no time to be looking at the purpose of doing what, the purpose of doing wikis, they didn't do a wiki prior to this. I'm just, I'm coming into the industry of a wiki. To me it's like, it's there, it's something I'm required to do, there's no time of me trying to find out why am I doing this, why am I doing business intelligence. Why am I not doing IT intelligence? If there's anything like that, why am I doing strategic management why am I not doing information systems? Why am I doing management information systems? So, for me there's no, you know you can't now try to question back and ask them to relook into their things to which with knowledge sharing there is a lot of things, components, and we are not covering everything in any case.

**Respondent 3:** So, you should try and read (group laughter).

**(All things considered question)**

**Facilitator:** What do you perceive the characteristics and components of an online community to be?

**Respondent 2:** For me it's.

**Respondent 6:** Interaction.

**Respondent 2:** Yes.

**Respondent 6:** And of course feedback.

**Facilitator:** Feedback from whom?

**Respondent 6:** In terms of this information management course, in terms of wikis, or peer reviews or reflective diaries. You write everything that you write but at the end of the day, even if you can state the problems that you are experiencing right now. The problem (inaudible), if you are my supervisor, I write a reflective diary to you, you also go to the review, and you pick up some challenges that I am facing as your student, but at the end of the day, you don't do anything about it. So, looking in that regard, there is no need for these reflective diaries if nothing is happening.

**Respondent 2:** And uhm, I have a lot of, you know innovation, people speaking about innovation but with innovation, there's a level of virgility [a nuance, entry level]. It's innovation in theory and not in practice whereby we are still, they still understand the language of the millennials and not speaking the language of academia and stuff and all and whatever and whatever. They're just one-sided they are not trying to get to the other side of the people who are actually doing this, you know Come to our side, do I. When you think of these modules when you think of implementing and putting these components together, think of you're doing it for young people. It's young people who are going to enjoy this, it is young people who are, who want to do this. So, that even when you get to the workplace, it's not hard for me to speak about wikis. Like one of those things, you know what, guys you should try it. You should go into that practice, guys you don't understand, you just speak to people, different, the language that, the language they use guys, you know, it's that thing, it's a fun environment it's not only giving, giving, giving. We just want them to finish because it also reflects at the end of. They don't care

about us, they just care about uh [sic], in any case, the business level, teaching is not about feelings involved they're in the business of teaching you know. And we want to get to the point whereby in, these communities of practice there's a level of, we in the same practice we are having fun with one another, we are enjoying it to a point whereby I can't wait to see him. I can't wait to see like, I can't wait to take from him the knowledge that he has, you know. Because he's, there's a level of fun going on. It's very integrated it's very collaborative, it's very fun, is very, you know. Things are going on in that practice so, if it cannot be rigid.

**Facilitator:** Who's innovating?

**Respondent 2:** The people that are introducing these communities to us.

**Facilitator:** Ok so, the designers and the developers?

**Respondent 2:** Yes, the developers.

**Respondent 6:** The developers did their part which is there, or that platform is there, but the person or the leader of the team. For a team like this if you are a leader, you need to make things happen so that we will be able to interact and do it.

**Respondent 2:** Yes.

**Respondent 6:** If you don't take your part all of us will be ugh.

**Facilitator:** So, the participants in the community, must be able to innovate?

**Respondent 2:** In this regard, if it's going to be a thing, if you're going to implement a wiki, you introduce a wiki to us as if, it is the school if it's the varsity you introduce a wiki to us because you know we are going to enjoy it. You can't just enjoy. You can't just introduce something that you haven't done research on. Do you guys think such a practise will be a fun environment, that you interact so, that there also, you can't just introduce. Because it's, it's very academic, every academic institution is doing it, or it's the in thing, you know? You can't just introduce. They introduce it according to the requirement of the people inside the industry, inside the institution, we are doing this thing because the University of UJ is such an institution, they can't generalise.

**Respondent 1:** I also think if, what's this, like lecturers and supervisors want people to be more interactive when it comes to like communities of practice. It should be exciting. We should be allowed to be creative and very innovative within these things you

understand, and they should always come up with ways of exciting us to be like I want to write something. I want to see what others have to say you, I, they have to be very exciting, so that you can keep on coming back for more like you want to hear what people are saying, what's buzzing today, you understand. So, if it's just like plain, there's only text, there's no pictures, no (group laughing).

**Respondent 2:** We're millennials, we want to, we want pictures, we want motions.

**Respondent 1:** And sometimes I feel like it will also be very nice if they would improve to a point whereby we get to share virtually to a point whereby video conferencing you know. You post your video on, and instead of having to type. Because, when you type sometime you want to be so perfect, you want to sound like an academic, you understand. And sometimes you just want, you like, I want you to see my emotions when I talk about a certain thing. That is very creative and trust me if someone posts a video on an online community everyone is gonna watch. If there is like a long text you're just gonna be like (puts chin in his hand and makes a sleeping face).

**Respondent 1:** You get tired.

**Respondent 2:** We like colour.

**Respondent 1:** You get tired, so you would rather watch a video than read.

**Facilitator:** What about podcasts, which is audio?

**Respondent 2:** Audio is also redundant at some point, you know. You wanna see what's happening on the other side of life, you wanna see, In America, is it raining (group laughs). If I wanna speak to, if I'm gonna be in a community of practice with someone in Singapore, in Dubai, I wanna see their face. I want to be like ok guys, you know me Respondent 2, you know, and there are better things in life. You show me the buildings (respondent 3 laughs) that, you know. What (shrugs shoulder)?

**Respondent 6:** But that would come with a cost.

**Respondent 2:** No.

**Respondent 6:** Honestly, if you have a video you have internet. You can't do that.

**Respondent 2:** Videos are minor costs.

**Facilitator:** Any other components, added characteristics?

**Respondent 2:** Uhm, abstracts, you know, abstract yeah abstract, abstract things whereby you know it's not, it's not something whereby its programmed, a program line of thinking to be abstract (waving hands), go all out and speak, and show us, show us things that are, you know, are more, are more. I wanna get that, show us, tell us that, show us that, let us talk to people who are, people who are in the industry, people who have something to offer because even in these practices people that, institutional. Bring us people from outside that have nothing to offer to us you know, you sit, and you sit in these communities and what-what and try to interact, and these people have nothing to offer. We are here we are in this place, and we want something out of this place and if you are just going to bring people who would be talking what they do in their jobs and how fun knowledge sharing. We're doing knowledge sharing, we're learning about knowledge sharing. You coming [*sic*] here to teach us more about knowledge sharing and tell us what this industry does. We've already learned that. We are in postgrad. We are learning such things. Don't bring people that will talk, talk, talk, to us talk, talk, talk but have nothing to offer to us. Everyone who comes must come with goodies.

**Respondent 5:** So, basically, you're saying diversity?

**Respondent 2:** Diversity yes, come with goodies, come with opportunity, come and take two students, we don't have time to sit.

**Respondent 6:** Laughing.

**Respondent 2:** But, we do have time to express our things too, to express our thought and talk about things that shape our lives and so forth.

**(Summary questions)**

**Facilitator:** How do you think this course has helped prepare you for pursuing further research?

**Respondent 3:** For like masters and doctorates?

**Facilitator:** Yes.

**Respondent 3:** I think it helps to understand research quality; how to conduct research (inaudible), and also for example if I want to do my masters next year. Then I've got this experience so, yes for me next year it will be easier even if I go to (inaudible), I know the basics, so for me it's a ground foundation. It's a good foundation in terms of going

forward. That is why pointing to respondent 2, she is complaining (group laughs). I think for me to analyse her complaint, kind of complaining about the workload, but if you can exceed this workload, it means in your masters level, your doctorate-level you can succeed. You are being prepared, this is the preparation stage to go forward.

**Respondent 2:** I also think that this module has been a great module and enabling us to be very holistic in our approach to different fields of study it makes me think that I am able to take any research given and conduct it. Not limited to any field, I could, it makes me understand that I could even un-broad my narrative, that it makes me view the world in a different perspective and see there are people that. The articles that I am reading I'm able to say uh hum, question and say uh hum this is not reliable, and they need to go back (respondent 4 laughs) and be very critical about the work that I read. It gives me that thing that, you know what. I mustn't just take everything given to me like that and accept it and say ok this is, he did research on, ok he's positivist and ok cool. It's ok and you know but it's also enabled me to say and question stuff and say uh hum he should have used this and to some point it's not applicable to this and it can't be taken as an all-encompassing conclusion to a cause because its lacking in one two three, lacking in so many, its allowed me to be very critical about stuff, very critical about life, and if anything it's one of the best modules that we have done, for me.

**Respondent 5:** For me, as much as it's prepared me for further studies it has also made me feel intimidated to do masters because now I just think of experiencing the same bunch of, doing it all over again. But at the same time its good preparation but you also get intimidated as to going back there again.

**Respondent 2:** The only intimidation for me, with regard to continue further, to stay here. You know, continue further meaning continue even in other businesses even outside, even in the field, even now, I know that everything is possible, I can even 5 years from now. I'll be like oh I know how we do research let me try and take something in that regard, you know. If I don't want to do masters next year.

**Respondent 1:** Also to add on, I would say this course in general has, what's this, it has groomed me to be able to apply in other, what's this like departments and stuff because uhm. Let's say for example I am very much interested in like uhm what's this word PR and most important like fashion (inaudible). I can be able to take what I've learnt and implement it in any vehicle within that market, so that's why I say it (inaudible) me very well and counts to my advantage.

**Respondent 2:** And there's also the ego boost (group laughs).

**Facilitator:** Would you say postgrad studies changes your perception or changes the way you think about life in general?

**Respondent 4:** It does.

**Respondent 1 and 3:** Nods head up and down yes.

**Respondent 3:** Like now going to something new, for example, the (inaudible), but then we have this module we're just going to search for everything on the internet and then we're done. But at the honours level, the postgraduate level even this module, it gives you that idea that there's more, more than we've been exposed to before. For example, if now, we have research skills, in the workplace you can use that. During a presentation, you can tell them before you start with your presentation, you can just tell them how you have collected your data as part of research methodology. But if, when you're an undergraduate we didn't have that, besides being exposed we didn't know how to conduct research. So, we kind of had limitations in terms of outlining our sources, how we've gathered our data and how we've analysed our data also. So, for me this module, the whole honours programme, I mean postgraduate also, it helps a lot.

**Respondent 4:** It also improved our level of thinking, like you can think beyond the box, like outside the box. Undergrad, the aim for you, was to pass that's it. You didn't have that bigger picture, but now we get it.

**Respondent 6:** You didn't question things.

**Respondent 4:** Yes.

**Respondent 6:** You're just doing them, now you need to question and find answers.

**Respondent 1:** It's also good to question when, I look at undergrad and now, undergrad I give you twenty-five thousand, I'll teach you five things, if you want your level of thinking capacity to grow how much are you willing to pay, for postgrad? Fifty thousand, ok, I want to learn more, I think.

**Respondent 3:** Laughing, because I'm paying more.

**Respondent 1:** It encourages you as a student. It encourages you because it's like, they leave you with a rhetorical question when you graduate and you're like, hmmm I want to know more and so it encourages you as a person.

**Respondent 2:** But having said that you have free online universities.

**Respondent 1:** To what degree do they share information that is relevant to...

**Respondent 2:** You have free online universities also so, when you talk about, and I could enrol for a postgrad like I do right now, I can go with the University of Sandaró, and I'm doing a free online course and at the end of the road you get a certificate that would also be like, wow in your cv it's one of those ooh ok you did this at this and you got a certificate.

**Respondent 6:** In your cv, it might be there, but sometimes you find that the most of the work there you didn't do the work by yourself it happened (inaudible)...

**Respondent 2:** I'm just in the circle of price.

**Respondent 3:** But the value of that certificate, you know in the academic world it's going to be challenged.

**Respondent 6:** Sometimes the online universities or intuitions don't offer quality education.

**Respondent 5:** Yes, and when you say that I also...

**Respondent 2:** How are you sure of that?

**Respondent 6:** I enrolled for, this course what do you call this?, business language...

**Respondent 5:** I enrolled for medicine and arts at UCT. I expected it to go deeper into medicine and art but it's just the scabs you know, they were only just talking about healing not going into...

**Respondent 3:** First aid, first aid!

**Group:** Collective laughter.

**Respondent 5:** Not into the actual, the whole medicine field, but it was just the top, and you get the certificate yes here it is but at the end of the day what is it you know about medicine and arts?



***(Final question)***

Facilitator: It seems our time is up, is there anything last that you want to add, that you would still like to say?

**Respondent 6:** On my side, I would like to see more practical stuff being introduced in final year because when you look at the projects, there are others that do projects related to information systems and electronic records management and all those stuff. We don't know anything about those systems besides what's on paper. So, if they can introduce practical stuff then when I reach to this honours level when I go to do the research I know what I'm dealing with not just on paper but in practice as well.

***(Conclusion)***

Facilitator: Thank you very much this was very valuable! It was very open, and it was very opinionated (group laughter), but it was lovely information and thank you for your free will to participate. Thank you very much for all your contributions it's worth more than gold, thank you very much, and you can now enjoy the rest of your afternoon.

