



# **Social media enhanced boundary crossing: exploring distance students' ecosystems of learning support**

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Signature:  Date: 30 August 2019

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## ABSTRACT

As the demand for distance learning increases, traditional campus-based universities continue to struggle in supporting working distance students. This has resulted in the increased phenomena of students using social media within their ecosystems of learning support. The use of formal and informal tools such as social media gives rise to boundaries which students need to cross for effective support. How social media facilitates the crossing of boundaries within ecosystems of learning support remains an unfamiliar area of research. This study employed a predominately qualitative research methods, with a small element being a quantitative method to view and investigate postgraduate distance students' ecosystem of learning support holistically. The findings of this study revealed that participants used a combination of formal and informal tools to support their learning, including social media. In particular WhatsApp, which enables the crossing of transitional, formal and informal learning contexts, hierarchical and, time and space boundaries. Recognizing social media as an important part of students' learning support ecosystem, allowed an expanded view on learning support. As such, the study highlighted a range of different learning mechanisms which occur when students cross these boundaries, with coordination being the dominant learning mechanism. In conclusion, social media (such as WhatsApp) does indeed enhance the crossing of various boundaries to support learning. However, some students do not necessarily perceive their interaction on social media as learning, which speaks to the need of *legitimising* social media as learning tools by institutions. This study then recommends the need for institutions to recognize and nurture the use of social media as one element

of a distance learning support ecosystem for cost-effective student support strategies guided by institutional guidelines and policies.

**Keywords**

Distance education, social media, ecosystems of learning support, boundary crossing

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## ABBREVIATIONS

CHE	Council on Higher Education
CHED	Centre for Higher Education Development
CHS	Community Health Sciences
CIECT	Centre for Innovative Educational Communication Technologies
DHET	Department of Higher Education and Training
DE	Distance Education
HEIs	Higher Education Institutes
HEQC	Higher Education Quality Committee
LMS	Learning Management System
PGD	Postgraduate Diploma in Public Health
PHP	Public Health Programme
SADC	Southern African Development Community
SoPH	School of Public Health
UCT	University of Cape Town
UNISA	University of South Africa
UWC	University of the Western Cape

# CHAPTER 1: INTRODUCTION

## 1.1 Introduction

There is a substantial move towards distance learning in higher education globally and in South Africa. In South Africa particularly, this shift was mostly in response to the call to widen the access to higher education for the previously disadvantaged (Akoojee & Nkomo, 2007; DHET, 2014). With the majority of students who enroll for distance education courses being full-time working people ('learn and earn' students), campus-based institutions struggle in giving them necessary support.. This is due to a number of reasons, some of which include capacity of staff and more are discussed in the next chapter ([section 2.2](#)). However, as a response to the shortfall of institutional support, there is an increasing phenomenon of students using social media to support their learning. Studies show that students are taking it upon themselves to find alternative (informal) ways to support their learning (Hajli & Lin, 2016; Jiang & Edirisingha, 2018). These alternative forms are part of what is known as ecosystems of learning support where a combination of tools and structures are made available for the sole purpose of supporting the students learning needs. Within a typical learning ecosystem, students are known to draw support from three elements: Academic, Professional and Personal. These elements come with social-cultural differences which result in discontinuity. In seeking support, students need to be able to access elements of the learning ecosystem for continued learning to take place. Literature shows that students have unintentionally used different informal tools to cross boundaries (eg. Hierarchy and transitional boundaries) within learning context using various strategies. These alternative support strategies can include the use of social media. Although this study explores social media, it has a particular focus on WhatsApp. While WhatsApp is not a representative of all social media, it is however the most widely used communication tool in the world with 1.5 billion montly

active users. In this context the students are finding themselves either intentionally or unintentionally crossing boundaries when interacting with the different elements of their ecosystems of learning support. The concept of boundary crossing places emphasis on discontinued, multi-dimensional actions and interactions between two or more contexts rather than one-sided transition. This concept is associated with the notion that when two or more different interactions meet, they potentially create an in between space where meaning is negotiated (Jiang & Edirisingha, 2018). In this case, this is when students interact with structures and tools within their ecosystem of learning in pursuit of support where meaning is negotiated. This study sets out to explore how students perceive social media as a learning support tool, and how they use social media to facilitate boundary crossing within their ecosystems of learning support. The next sections are aimed at providing background to the study, including a detailed description of the School of Public Health (SoPH), the structure of the Postgraduate Diploma (PGD) and the student composition.

### **1.1.1 The School of Public Health**

The School of Public Health (SoPH) forms part of the Community Health Sciences (CHS), a faculty within the University of the Western Cape (UWC). It was established in 1993 as the Public Health Programme (PHP) under the leadership of Emeritus Professor David Sanders. This was in response to strengthening education and research in the field of Public Health and Primary Health Care at UWC, including building capacity in the health system (SoPH programme handbook, 2018). Since 1993, when the school was established, it has been significant in pioneering initiative in Public Health with increasing continental influence. The schools' main purpose was to contribute to the development of policymakers and implementers who are knowledgeable and skilled in the principles and practices in the field of Public Health. Their practice needed to be based on research that is influenced by informed and active communities. Implementation with commitment to equity, social

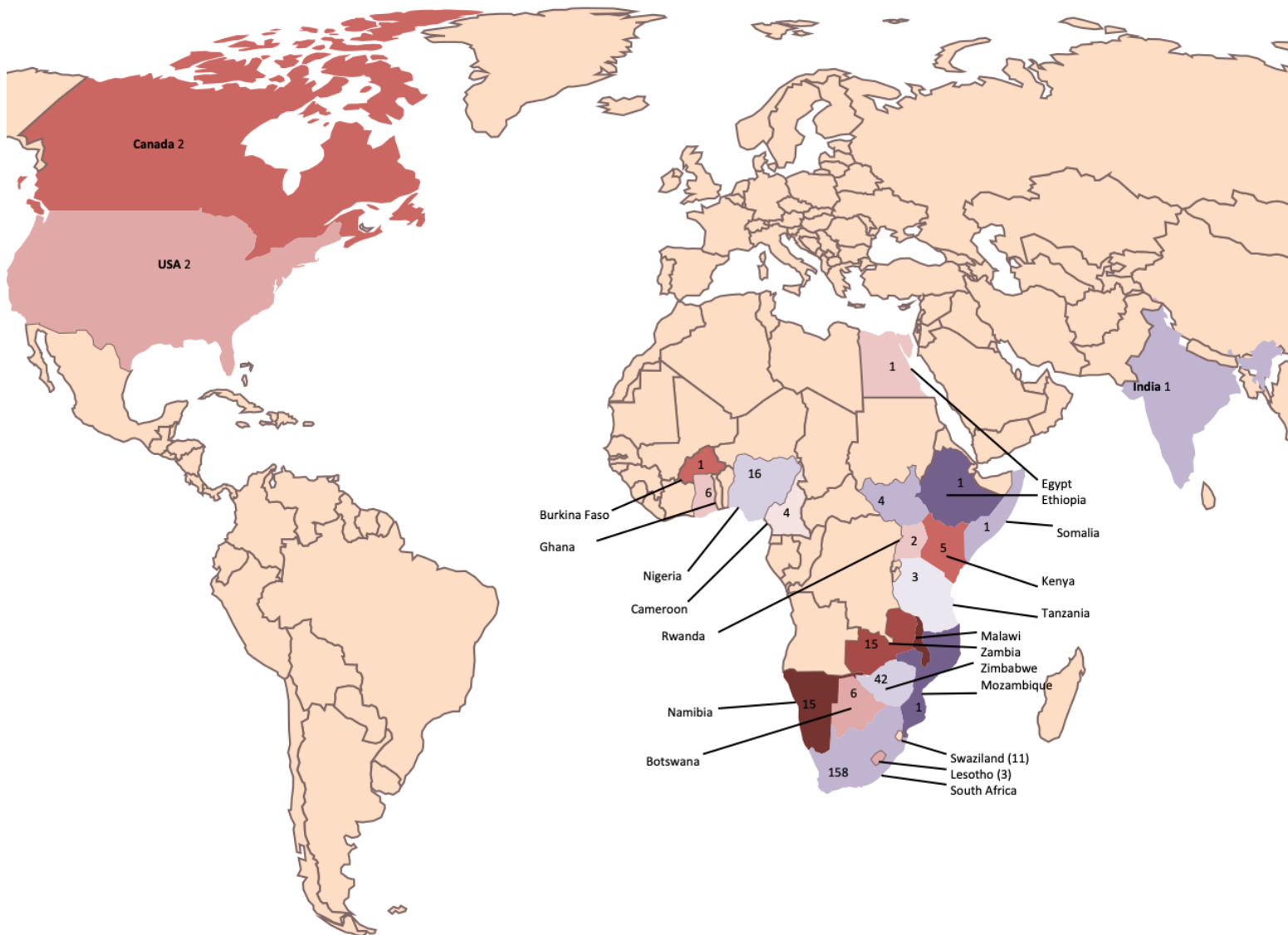
justice, and human dignity of these communities. The school is situated within a university that is traditionally campus-based university offering only postgraduate programmes. It has been known for offering distance learning opportunities for working and experienced health professionals. However, it recently started offering online learning opportunities in the Public Health Pharmaceutical stream.

### **1.1.2 The structure of the Postgraduate Diploma in Public Health programme**

When the Postgraduate Diploma in Public Health was developed, its main objective was to provide health professionals with the opportunity to study Public Health. This was conducted in a way that ensured that the health professionals are able to study while undertaking their professional responsibilities. This decision was informed by the health workforce shortages in Africa at the time (SoPH programme handbook, 2018). The programme was designed in line with international trends in Public Health training to address the needs of Lower- and Middle-Income Country contexts, health sector reform and international health movements. At the same time, the programme was designed that professionals who enroll in it can be informed on public health issues and also be aware of community involvement in health provisions. The programmes' pedagogy places emphasis on the practical application of knowledge and skills in the field. The programmes graduate attributes includes the following :

- Identifying, quantifying, and prioritizing the health problems and needs of communities.
- Designing, implementing and evaluating comprehensive and participatory programmes aimed at countering these problems and meeting health needs.
- Communicating effectively with service providers and communities about Public Health and Primary Health Care.
- Demonstrating leadership in transforming the health and welfare systems of Africa.

Over the years, the Postgraduate Programme has been reconfigured on multiple occasions to address the requirements of the Department of Higher Education and Training (DHET) in South Africa. The reconfigurations took into consideration of the shifts in the needs of the health system and the frequently changing student profile. The student profiles included professionals from health, welfare and allied health professionals across the South African provinces, extending to other African countries and even beyond the African continent (figure 1).



**Figure 1:** SoPH Student distribution (2017-2018) Adapted from the School of Public Health Annual report, 2018

Two study options are offered to accepted applicants. The first option is the fast track option, it is a lot more demanding of the student's time as it requires students to complete six modules in one year. The other option is the slow track option which is more flexible and less demanding of the student as

they are allowed to complete six module over two years. Regardless of the option the students choose, they are still expected to spend between 15-20 study hours per week across university semesters.

Although the courses were developed for distance education, in 2014 the modules were adapted to an interactive online format made available on the university learning management system (LMS) called iKamva. In addition to this effort, the students also have the option to attend two face-to-face learning opportunities; Summer school at the start of the first semester and Winter school at the start of the second semester. In these face-to-face sessions the students are orientated into the programme and modules. Students also get the opportunity to meet fellow students and the academic staff (module convenors and students administrators). The face-to-face sessions are optional and traditionally, only 40 - 55% of the students attend the Summer and/or Winter School, while the rest work throughout the programme online without ever meeting the module convenors and other students in person. However, students in the past have pointed out in the module evaluations how studying at a distance can be lonely and isolating even with the current support systems such as online engagement opportunities. These engagement opportunities are integrated into the curriculum of the modules, they are often restricting as they are prescribed, structured and prompted. Students are encouraged to respond to specific questions, and these engagements are only open for a certain period (7 - 9 days) depending on the level of interaction required from the students. These discussions are mostly graded, which limits the students to a specific style of academic writing.

### **1.1.3 Formal student support tools and strategies offered at SoPH**

One of the programme reconfiguration included the adaptation of distance modules into online modules long before the introduction of iKamva, UWC's Learning Management System (LMS). In



2013, the School had contracted an adult education specialist and an information technology specialist to work alongside the subject matter experts (i.e. the academic teaching staff members - convenors). They worked collaboratively to develop the School's teaching and learning materials. This meant that when iKamva was launched in 2014, the School could draw from a pool of early adopters that embraced iKamva – specifically on the Masters' level. Management Strategies for Public Health was piloted with significant support from the University Centre for Innovative Education and Communication Technologies (CIECT). The main principle for this transition was to improve engagement between the learning community (students and academic programme team). However, this was not the only strategy that the school had implemented to support and improve students' learning experiences. Some additional and equally important well-thought strategies included the following strategies outlined below: (example of these learning material are made available on the schools open education resources page on [www.uwcsoph.ac.za](http://www.uwcsoph.ac.za))

- structured module guides and readings for each module. These are set documents developed for each module. The documents are developed by subject matter experts in collaboration with an adult education specialist to make sure that the content is not only relevant to the module but that it can be easily comprehended by an adult student at a postgraduate level.
- convenors develop module study schedules which helps the students to pace themselves throughout the module and alert them to crucial academic dates (assignments and other graded activities such as discussion forum participation).
- an opportunity for feedback on draft submission for assignments. This is a developmental learning opportunity for students to get feedback and improve on their work before submitting the final assignment. This opportunity is optional to students but has been found to be beneficial. Those who submit draft assignments have been observed to perform better than those that do not.

- email and telephonic consultation with staff members. This is due to the nature of the programme being from purely distance to mixed mode, students are provided the opportunity to consult with the academic team through email and telephonically. In some cases, opportunities for skype is also made available to students. However, students living in Cape Town are encouraged to make face-face appointments for consultation.
- on iKamva, a student communication site is used to announce important notices and the availability of new/updated resources pertaining to particular modules and the programme as a whole. This site is mainly managed by the student administrative staff as well as the programme coordinator.
- in addition to the communication site, there is an Academic Skills resources site. This site is also on iKamva, a place where students can find useful academic resources to help them with academic issues such as referencing, writing a literature review and how to develop good PowerPoint presentations.
- SoPH programme handbook and the Academic handbook which outlines the programmes and the different structures of the school. The programme handbook also provides module overviews and guide students to relevant postgraduate support centres at UWC.
- Lastly, the UWC online library which students can also access off-campus. This is where students can access full-text journal articles which the university has subscribed to. There is also an option to chat with faculty librarian should students have specific needs.

The above-mentioned are the main in-house support strategies but students are not limited to these as there are some offered by the university such as access to the writing centre and the division for postgraduate studies. Students are made aware of all these services as they are orientated in to the

programme. Such information that is included in the programme handbook that all students received at the start of the year.

For this study, we classify the above-mentioned support strategies as formal support, as they are the official tools and strategies offered to all students by the School. To a certain extent, students are expected to engage with these strategies for the successful completion of the programme. A section in Chapter 2 describes in more detail the tools which form part of the formal learning support tools and structures. In addition to these formal tools and structures, through anecdotal evidence such as module evaluation forms and informal conversations with students, we know that students use social media tools such as WhatsApp<sup>1</sup> intensively as a means of supporting their learning informally.

## **1.2 Problem statement**

Students are increasingly relying on the use of social media to support their learning. This may be due to the fact that traditional campus-based universities fall short in providing sufficient support for working distance students. Students are therefore finding themselves using a combination of tools of formal and informal tools to support their learning. Using these tools comes with socio-cultural differences which both create boundaries and help cross boundaries in learning settings. How and why distance students use WhatsApp to facilitate boundary crossing within their ecosystem of learning support still proves to be a grey area. This type of understanding is important because it is said that when boundaries are crossed there is certain learning which takes place. Therefore, it would be of value for institutions to understand the potential of how informal support tools such as social media can be used to support the diverse learning needs of geographically dispersed students. SoPH

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<sup>1</sup> WhatsApp is an instant messaging application for smartphones, which uses the internet to send and receive text messages, images, video, user location, and audio messages. This study looks into the 2.10 or higher version of the tool.

students are particularly interesting to explore because of their rich composition in terms of culture, age, professional and academic experience.

### **1.3 Research questions**

The main research question for this study is:

How does social media (WhatsApp) facilitate boundary crossing in distance students' ecosystems of learning support?

The study has three sub-questions that are:

1. What formal and informal tools make-up students' ecosystems of learning support and how do students perceive the support they get from these tools?
2. Which boundaries do students cross and how does social media facilitate this process?
3. What learning mechanisms takes place when students cross these boundaries?

### **1.4 Aims and objectives**

This study sets out to explore how students perceive social media as a learning support tool, and how they use social media to facilitate boundary crossing within their ecosystem of learning support.

The objectives of the study are

1. To investigate the students ecosystems of learning support (both formal and informal support strategies)
2. To explore how and why students use social media to facilitate boundary crossing in their ecosystem of learning support
3. To understand the type of learning which takes place when crossing boundaries, if any

4. To come up with recommendations for institutions offering distance education on how to best support distant learners

## **1.5 Outline of thesis**

Chapter 2 is a literature review, scoping the problem and attempting to explain some of the terms and how they are used in the study. It also discusses the background of boundary-crossing as a conceptual and analytical framework and its application in past research works. This chapter also lays the foundation of the interpretive approach.

Chapter 3 will delineate the research methodology used in this research, including an overview of the study design, description of the study setting, the process of data collection, and a synopsis of the ethical considerations used for the study.

Chapter 4 forms the initial findings from the data collection instruments. Within this chapter, key boundaries are identified and unpacked.

Chapter 5 provides a map between research purpose, execution and discussion of the findings and discussions of limitations of the study.

Chapter 6 forms part of the conclusions and recommendations are made for future research work.

## **1.6 Conclusion**

This chapter provides an in-depth description of the PGD programme in PH, its' students and in-house support strategies - also referred to as the formal support strategies. This chapter alludes to the need for more social, informal interactions when studying at a distance and the need to understand more about students' informal support strategies. This understanding is essential to effectively incorporate them into an ecosystem of learning support, which incorporates both formal and informal support tools, such as social media. In the next chapter, a scope of relevant literature which gauges the current state of social media as learning support tools in higher education and will introduce boundary crossing, as the conceptual and analytical framework used in this study.

## CHAPTER 2: LITERATURE REVIEW

### 2.1 Introduction

As distance education continues to increase in demand globally, more and more institutions are offering distance education in addition to campus-based education. This slowly blurs the boundaries between traditional campus-based and distance learning institutions. Highlighting that the crucial role and function of distance education in higher education is frequently changing. This makes the common distinction between traditional contact and distance institutions such as their modes of delivery vague. The Council on Higher Education (CHE) annual report 1998/1999 suggested that higher education programmes continues to exist on a continuum that has distance programmes on one end and face-to-face programmes on the other. The changing role of distance education offering is evident in the increase of distance education programmes offered by traditionally campus-based universities. (see [section 2.2](#) below). In this context a common phenomenon among students undertaking modules at a distance has emerged, which is the simultaneous use of social media platforms to supplement and or extend engagement beyond the traditional learning spaces (Willemse, 2015; Sobaih & Moustafa, 2016). Research shows that this phenomenon has been prompted by the need to improve attrition rates and graduate throughput. Letseka provides evidence of how attrition rates and graduate throughput continues to be a struggle in Higher Education (and in particular in DE), globally and even more so in South African Higher Education (Letseka, 2015). Which means that gaining a better understanding of a complex educational context and how to best support it is important. Furthermore understanding its ecosystem of learning support can potentially help in developing clear guidelines for student support and improve success and throughput. This in-depth understanding will also afford education practitioners and researchers the opportunity to

acknowledge the complexities of unique educational contexts and how technology can potentially mediate student-centred support strategies. Joksimović *et al* (2015) reports on how the educational level and context of a particular module has an impact on the types of interaction which need to be supported. This study argues that institutions should adjust and tailor their support according to the level and context of the programmes their students are enrolled for and not offer blanket support for all students. Firstly, it is essential that we note that teaching and learning in a distance education context is a complex phenomenon. This complexity is mainly due to the nature of the environment itself, student profile and even the dynamics of how teaching and learning takes place. All these factors makes it important for practitioners within the field to understand the phenomenon of distance education in order for them to develop effective strategies that aim to improve teaching and learning. This is why Malecela (2016) places emphasis on the need for additional research which is targeted at identifying educational and pedagogical goals to conclude theoretical and practical implications. These implications should specifically speak to the use of social media (such as WhatsApp) for teaching and learning across different learning contexts. In so doing, pedagogical strategies that are grounded not only in theory but also the practical solutions can be implemented to improve teaching and learning in different educational settings.

This chapter aims to explore research in the field of distance education, tracking its development and its status in developing countries such as South Africa. This chapter also discusses the main theoretical, conceptual and analytical concepts used in this study, learning ecosystems and boundary crossing, and lists different strategies employed to support students that study at a distance and to what extent social media is used in the educational context of postgraduate public health.



## **2.2 Distance education in Africa: South African history**

Distance education is defined by Moore (1993) as the separation of teacher and learner. It makes use of mixed media course material with different modalities for learner support. Distance education emerged in an attempt to address the need to provide access to those that were otherwise unable to participate in traditional face-to-face courses. Distance education is unique as it encourages a flexible student-centered approach and provides opportunities for learning anywhere and anytime. It is understood that for a student undertaking a distance learning course, the learning takes place at his/her own time, it is self-paced at the location of choice, and comes with the necessary decentralized support systems.

Going back in time in South Africa's history, the first democratic government in 1994 signaled the beginning of significant policy changes in education, with a particular emphasis on distance education. Distance Education was noted to be a strategic mechanism to facilitate access, participation and redress, especially in higher education (Akoojee & Nkomo, 2007 ). Since then, distance education played a significant role in South Africa and the broader African region. It afforded access to a large and diverse student population, of both adult students and school leavers, whose education needs might otherwise have gone unmet due to the inequalities of apartheid.

In 2004, the then newly established University of South Africa (UNISA) became the only distance education dedicated university in South Africa (DHET, 2012). UNISA was previously known as the Technikon Southern Africa which incorporated the Vista University Distance Education Campus in a single merged institution, combining programmes, staff, and facilities into a comprehensive open and distance learning university. With an audited record of just under 350,000 active enrolment in 2016 and a new mission and vision which reflects its national and continental role. UNISA is now

recognized as one of the world's most important mega-universities (UNISA Annual report, 2016). However, UNISA is not the only public provider of distance higher education in South Africa as more universities have undertaken offering distance programmes in addition to their traditional campus-based offerings. This follows the recommendation by CHE 1999 that the DHET lifts the moratorium on the introduction of new distance education programmes in traditionally campus-based universities (CHE 1998/1999 Annual Report). This was then implemented by the then Minister of Education, Professor Kader Asmal in February 2000. Furthermore, the recommendation was that the “lifting of the moratorium should be linked to the development of a clear policy directive, including conditions and criteria, for the continued provision of large-scale distance education programmes by traditionally contact institutions”. The Higher Education Quality Committee (HEQC) needed to prioritize the quality assurance of such programmes (CHE 2000: 44-45). The agreement was approved on the basis that the institutions would seek approval for the introduction of distance education programmes for which state subsidies are not required. The approval of distance education programmes was also dependent on the fit between the programme and the institution's mission, including institutional capacity and whether it addresses national and/or regional needs (Draft National Plan for Higher Education in South Africa, 2001). This agreement then resulted in 20% of predominantly contact institutions to have developed and launched distance education programmes as reported in the White Paper for Post-School (2014). Distance education is often provided in strategic areas targeting both local students and those in the Southern African Development Community (SADC) region or beyond. This is because distance education is seen to be the primary driver of improving and increasing access of students into higher education in the most cost-effective manner. Below are tables showing the distribution of student enrolment between contact and distance across South African institutes of higher learning between 2001 and 2015 from CHE (2004) and

Statistics on Post-School Education and Training in South Africa (2017). Table 1 below shows distance education at predominantly traditional campus universities a year before the agreement was passed.

**Table 1: Distance education enrollment at predominantly campus-based universities, 2001**

<b>Institution</b>	<b>Distance Education headcounts</b>
University of Potchefstroom	9 769
University of Natal	6 444
Rand Afrikaans University	5 453
Rhodes University	339
University of Pretoria	30 232
University of Stellenbosch	2 019
University of Port Elizabeth	15 731
University of Fort Hare	1 572
University of Free State	1 523
<b>Total</b>	<b>73 084</b>

Above is a list of nine South African universities who offered distance programmes in 2001, a year before the agreement was passed with a total of 73 084 number of enrolled students. With the University of Pretoria accounting for 41.3% of the total students enrolled for distance education, followed by University of Port Elizabeth (21.5%), University of Potchefstroom (13.4%) and Rhodes University (0.5%) with the least of number of enrolled students. Since the passing of the agreement, more traditional campus universities were observed to have taken up distance education as a mode of offering. Table 2 below illustrates student enrollment in distance education programmes at South African traditional campus-based universities in 2011, nine years after the passing of the agreement.

Noting that some universities changed names, some having undergone merger, and some were later established.

**Table 2: Distance education uptake at predominantly campus-based universities, 2011**

Institution	Headcount student enrolments	
	Contact	Distance
University of South Africa	13	328 851
North West University	31 663	24 978
University of Pretoria	44 745	13 383
University of KwaZulu Natal	35 514	6 248
University of Free State	26 769	4 790
Nelson Mandela Metropolitan University	24 358	1 898
Tshwane University of Technology	49 025	1 050
Central University of Technology, Free State	12 363	281
Cape Peninsula University of Technology	32 479	27
<b>Total</b>	<b>256 929</b>	<b>381 506</b>

Almost a decade after the passing of the agreement, distance education observed a significant uptake in South African Higher Education. With total number of enrolled students also have increased from 73 084 to 381 506. This time, UNISA now accounted for the highest headcount of students' enrollment (86.2) followed by University of Pretoria (6.5%) and North West University (3.5%). Table below further demonstrates the increased move towards distance education by headcount and number of universities offering distance education programmes of higher learning, by attendance mode, population group, gender and institution, 2015.

**Table 3: Student enrollment at South African universities by learning mode, 2015**

Institution	Headcount student enrolment	
	Contact	Distance
University of South Africa	0	337 944
North West University	37 943	26 127
University of Pretoria	49 403	6 581
University of Free State	25 334	5 084
University of KwaZulu Natal	43 807	1 699
Tshwane University of Technology	56 172	1 074
University of Cape Town	27 214	595
Cape Peninsula University of Technology	32 340	334
Vaal University of Technology	17 489	189
Central University of Technology, Free State	14 117	76
Nelson Mandela Metropolitan University	26 276	29
<b>Total</b>	<b>331 095</b>	<b>379 732</b>

Note 1: *Contact students are those that register mainly for courses offered in contact mode*

Note 2: *Distance students are those that registered mainly for courses offered in distance mode*

The table above breaks down the uptake of distance education offering by South African universities by demographic details of students in comparison to contact. In 2015, the majority of students studied through contact mode (61.5% or 605 480) while 38.5% or 379 732 of students were enrolled through distance learning mode. Of the 379 732 students enrolled for distance learning mode, almost 90% were enrolled with UNISA which offers only distance mode of learning, followed by North

West University. The table also shows that 42.3% or 11 out of 26 public HEIs offered distance mode of learning in 2015. While some university may not have been recorded as distance offering university (such as UWC), this may mean that they have registered their programmes as 'contact model' (which is a minimum of 30% contact time), this mode is not accounted for in the table above.

### **2.3 Ecosystems of learning support**

Traditionally ecosystems are described to be the composite of living organisms, their physical environment, and all their interrelationships in a particular unit of space (García-Holgado & García-Peñalvo, 2018). In the application of this description one can easily describe a learning ecosystem to be the composite of living organisms in a learning environment (for example, the academic, professional and personal), and all their interrelationships in a specific context. This context can be of a digital (online) or physical nature (Giannakos, Krogstie & Aalberg, 2016). In a learning ecosystem, it is essential to consider the interrelationships of the main actors (students) but also the role of the learning context. In this case how student negotiate their learning across their academic, professional and personal contexts.

In a traditional learning ecosystem, the physical environment would include organisms (students, academic staff, peers, colleagues and family members), information and digital resources like slides, lecture recordings, blog entries and discussion forum on the LMS. This may also include physical materials like textbooks, lecture notes and sometimes online meeting through webinars. This space is where teaching or learning is happening and where interrelationships are conducted. Those interrelationships shape the quality and value of students' learning experience, and the ability to develop teaching approaches enhancing students' dynamics and needs is critical in an emerging ubiquitous learning era (Gros & García-Peñalvo, 2016). With an emphasis on the learning process we

need to take into account students' characteristics, needs and the potential dynamics and interactions with different actors (such as the fellow students, module convenors, family and colleagues, as well as the learning environment and resources). Importantly, like in a biological ecosystem, in a learning ecosystem, individuals can form groups spontaneously and can interact with each other or with learning tools at the individual or group level (García-Peñalvo & García-Holgado, 2017). This links to the argument of institutions being able to change their practice in response to ever changing needs. They can also perform specific behaviours in order to contribute to or perturb the success of the learning ecosystem. For the purpose of the study it is important that the SoPH ecosystem of learning support is analyzed holistically to better understand how each element contributes to students' learning experiences. This analysis will assist in identifying gaps, and how social media (such as WhatsApp groups) as an informal learning support tool attempts to bridge these gaps.

### **2.3.1 Formal and informal elements of learning ecosystems**

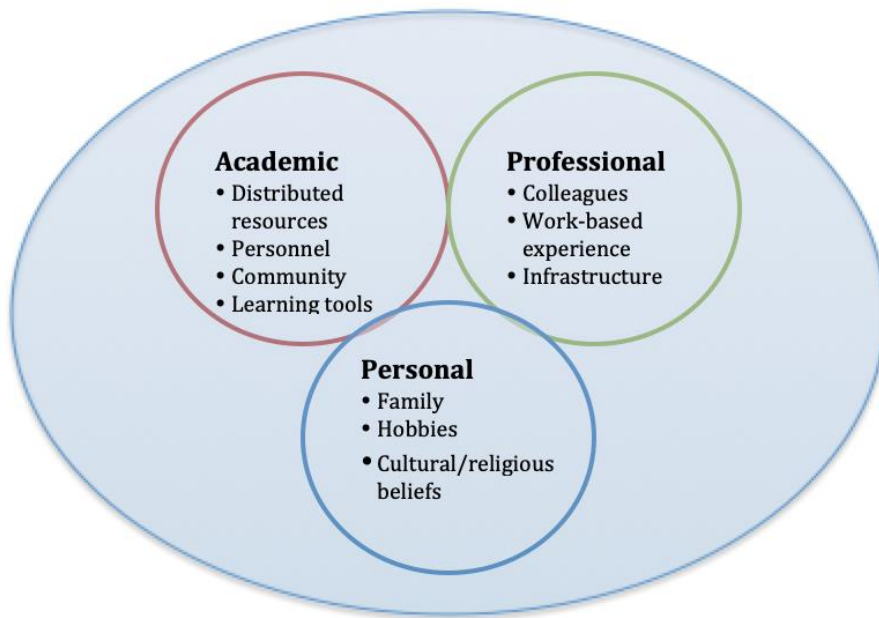
The literature on the definition of formal and informal learning is controversial, ambiguous, and invites disagreements among researchers (Czerkawski, 2016). Most often, formal learning refers to structured, pre-designed learning activities that are facilitated by an instructor while informal learning refers to unstructured, unexpected, and in most cases, incidental learning (Czerkawski & Hernandez, 2011). Formal learning usually happens in educational institutions and leads to a degree or certification whereas informal learning occurs outside the classroom and is not assessment driven. Tools that are used in formal learning are thus defined as institutional, formal tools that are offered to the students by the institution to support their learning. Typical formal learning tools include the institutional LMS. Social and informally used tools such as Facebook or WhatsApp might then be defined as informal learning tools. Increasingly, there are studies that show the integration of social

media as part of students' learning ecosystem (Willemse, 2015; Sobaih *et al*, 2016; Gruzd *et al*, 2018). This is where social media has been used explicitly as both formal and informal teaching and learning support tools extending students' learning support environments.

Although the differences between formal and informal learning networks might be clearly defined, there are also many overlaps between them. Opinions differ with regards to differentiating formal and informal learning environments. Some scholars grapple when it comes to differentiating as to how and what learning takes place when elements of informal and formal learning are present. This study aims to add to the understanding of this gap in literature by looking at the tools that allow formal and informal learning and what learning takes place across those boundaries.

The adapted figure below from Barron (2006) helps illustrate the various boundaries students are likely to cross within a typical learning ecosystem of support. This diagram is used as reference to categorize the elements of the students' ecosystem of learning. However, it is to be noted that the compartments of the ecosystems are permeable and can be crossed. The study looks into how these compartments are crossed to support learning and how social media enhances the crossing of these boundaries for learning.





**Figure 2:** A typical ecosystem of learning support context adapted from Barron (2006:195)

### **2.3.2 Social media (such as WhatsApp) a tool in ecosystems of learning support**

Emerging technologies continue to change current trends in online distance learning, influencing theoretical frameworks as technology maintains a mutual relationship with learning theories (Beldarrain, 2006). Learning theories which change to adapt to using evidence-based research with the aim of restructuring theoretical perspectives. It is worth noting that instructional theories explain how to achieve the desired learning outcomes, while learning theories describe how learning occurs. Therefore, emerging technologies may facilitate merging the aspects of different theories to benefit learners. At best, learning theories recognize that technology impacts social interaction, which in turn, affects the learning process.

Educational scholars continue to find social media to be beneficial in education due to its vast range of affordances. With such affordances including the ability to communicate with multiple people at

distances; watching the news; sharing photos, videos; involvement in public topic discussion; adding instant messages with real-time web chat; and playing games (Sobaih & Moustafa, 2016). All of these affordances are user-generated content undertakings that result in interactive social settings that can nurture social and peer learning (Hajli & Lin, 2016). Sobaih & Moustafa (2016) argues that these social settings are useful in stimulating learning communities; enhancing students' engagement in courses; discussing knowledge; and student mentoring by facilitating social instant learning. Ng'ambi *et al* (2016) state that emerging technologies, including the use of social media applications such as WhatsApp, have gained popularity in higher education pedagogies in South Africa. Willemse (2015) found this to also be true in the local postgraduate health sciences field.

Even though mobile devices and social media are more evident now than before (Hamad, 2017), the teaching and learning practice in South African higher education have remained the same and so are the student support interventions. It is argued that, this may be because educational technologies still come with challenges (technical and cognitive – digital literacies). Bozalek *et al* (2013) state that social media has the potential to mediate collaboration, co-creation, learning and interaction, thus contributing to improved teaching and learning. Also, they highlight the importance of bridging the gap of informal and formal learning and supporting students with difficulties in learning in a language which is not their home language. The main advantage of informal learning tools is that they are controlled by students: they choose the tool, technology, media and language that best suits them in order to get optimal support. Researchers caution against “exploiting social media for learning” (Greenhow & Lewin, 2016:7). However, they fail to provide clear guidelines on how social media can be used appropriately or inappropriately across all learning contexts. Yeboah & Ewur's (2014) study in Ghana highlights instances where the use of social media had a negative impact on

students' academic performance due to more time spent on social activities. Likewise, Junco and Cotton (2013) who investigated students who use Facebook while completing academic activities, found this to result in average marks.

Students may also express concerns of using social media as invading on their personal spaces (Manca & Ranieri, 2016). One could argue that findings in the abovementioned studies could be different when investigating a mature student population (Ivala & Gachago, 2012; Raiman *et al*, 2017), as they are more conscious of social interactions and are more strategic in using the technological tools. Like any tool, it does not come without weaknesses including those that were highlighted in the studies mentioned above (Yeboah & Ewur, 2014; Malecela, 2016). Technical challenges were highlighted such as students' limited access to Web-enabled smartphones and erratic internet connections (at home and/or work). Other issues were more of academic concerns such as difficulty in balancing online activities and the problem of distraction of students from completing their assignments and adhering to their private study schedule.

There is a need for more research into how students use informal tools for their learning support, to what extent informal tools support and hinder learning, and into what kind of learning these informal learning support tools afford to students. This report uses boundary crossing as an analytical lens to explore how distance-learning students perceive the use of social media as an element of their ecosystem of support and whether or not and how it enhances boundary crossing within the ecosystem of support. The following section elaborates on the notion of boundary crossing as an analytical tool.

## **2.4 Boundary-crossing: an analytical framework**

Theories, frameworks, and perspectives which influence the determining of innovative educational practices should never be disconnected (French, 2017). Certainly, the fundamental emphasis on creating and putting integrated conceptual frameworks into practice can be critical in introducing change into organisations from various fields. In understanding why and how students navigate between social - informal - practices for educational purposes and institutional - formal - support, one has to recognise the differences between these two different learning contexts/communities. Bronkhorst and Akkerman (2016) position learning to be continued or that which is purposely extended across contexts with various role players. The settings and experiences of the different role players contribute to significantly to the gradual participation and expertise development over time . This study uses the theoretical framework of boundary crossing in arguing that students are increasingly using social media (such as WhatsApp) as objects to bridge formal and informal learning contexts (Gachago *et al.*, 2015) and other boundaries. In their examination of the use of ICTs, researchers in the education field have comprehensively used the notion of boundary objects (Gachago *et al.*, 2015; Greenhow & Lewin, 2016; Malecela, 2016). Previous research has investigated how boundary objects support collaboration in various settings and between various groups (Hara & Fichnman, 2014).

Gachago *et al* (2015) grappled with the lack of a clear and shared understanding in the literature on boundary objects and boundary crossing in clarifying how learning takes place. This study makes use of the definition by Huvila *et al* (2016) of what a boundary object is. They define it as that which has different meanings in different social worlds with a structure common enough to more than one world to make them recognisable. However, the debate around whether learning takes place during

boundary crossing or with the integration of boundary objects continues with a range of opinions across different disciplines.

In the most simplest way, a boundary object is an artifact that exists in multiple social worlds. It is an object that mediates communication between these different social worlds (Abson, *et al.* 2014). Its identity varies greatly depending on its context. The boundary objects use and adaptation is very flexible to the user, however its identity remains unchanged across. In this study, WhatsApp is seen as the boundary object which enables students to cross various boundaries within their ecosystems of support. Students may use it differently depending on their learning needs. While the students use WhatsApp for academic purposes, it remains as an element of social media predominantly used for communication.

Even though the framework refers to boundary object, this work makes use of the term *boundary crossing tool*, as it stresses the agency of students to choose a tool to facilitate socio-cultural practices that “integrate[...] media, such as social media, mobile devices, other internet tools or platforms under the functional description of resources” (Jiang & Edirisingha, 2018:402). These are tools which facilitate boundary crossing processes by accomplishing a bridging function between intersecting social worlds. As a conceptual and analytical lens for looking at possible ways in which learning can take place as a result of boundary crossing, Akkerman and Bakker (2011) describe four boundary learning mechanisms in the table below:

**Table 4:** Boundary learning mechanisms by Akkerman and Bakker (2011)

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**Boundary mechanisms of learning**

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***Identification***

Different sites are questioned and accordingly redesigned. The emphasis remains on a new awareness of practices and redevelopment of existing identities

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***Coordination***

The focus remains on overcoming a boundary for continuity to take place, by means of unforced movement between sites.

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***Reflection***

A developed set of viewpoints contributing to the development of a new identity that could potentially inform future endeavors

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***Transformation***

This contributes to the development of new practices, which often results in the emergence of ‘in-between’ practices that are often called boundary practices.

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The framework assists in identifying how the students used elements of their learning support ecosystem and which type of learning took place when students used the tools of their choice. The data analysis [section 3.7](#) in this report explains in detail how the framework has been adapted for the conceptualisation of research questions and how it has been used to analyse the data that was collected.

## **2.5 Conclusion**

The primary objective of this chapter was to gain in-depth understanding of learning support for distance education in the African context and social media role in a student’s ecosystem of learning support. This chapter has also provided context to the key terms used in this study, and lastly, the chapter reviewed the conceptual and analytical framework, ecosystems and boundary crossing to understand how students cross boundaries using social media and the types of learning that occurs.

## CHAPTER 3: RESEARCH METHODS

### 3.1 Introduction

Social media provides a platform for networking where people can be able to create and use virtual identities in order to connect, interact and share information (Mukabeta, 2016). However, the organic use of social media amongst students and their broader ecosystem of support in an educational context still reflects an unfamiliar area for research. The aim of the study is to explore and understand how social media enables students to cross boundaries within their learning ecosystems of support. This chapter first describes the research context, followed by a narration of the ontological and epistemological assumptions that underpin the study. The identification and rationale of the type of research is discussed. The selection of participants is explained in detail together with the data collection methods, data analysis, validity and ethical considerations. Concluding this chapter is a summary of the chapter highlights.

### 3.2 Research approach

This study adopts an interpretive paradigm that leads to empirical and predominantly qualitative research with a particular element of quantitative research. According to Patton (2002) an interpretive paradigm is used as a base for understanding processes, meaning and purposes (Herrington, Reeves & Oliver, 2009; Creswell, 2012; Liamputtong & Serry, 2013). Willis *et al* (1999) further add that an interpretivist paradigm links to constructivism learning theory and is normally associated with qualitative research, because people's realities consist of their subjective experiences of the external world. Interpretivism also focuses on internal realities and highlights how the world can be experienced in multiple ways. According to Carson *et al.* (2000) interpretivism

assumes that there could be different ways to interpret a phenomenon to understand the meaning that people construct of their world through their experiences. Table 5 below provides comprehensive differences of the two research approaches and how each is used to obtain knowledge around specific topics in research. The role of the researcher is explicitly described to be one where the researcher remains open to new knowledge throughout the study and lets it develop with the help of informants - in line with the interpretivist approach.

**Table 5:** Ontological and epistemological differences of positivism and interpretivist approaches (adapted from Carson *et al.* 2001:6)

<b>Ontology</b>		
	<b>Positivist</b>	<b>Interpretivist</b>
Nature of 'being'/ nature of the world	Have direct access to real world	No direct access to real world
Reality	Single external reality	No single external reality
<b>Epistemology</b>		
'Grounds' of knowledge/ relationship between reality and research	Possible to obtain hard, secure objective knowledge	Understood through 'perceived' knowledge
	Research focus on generalization and abstraction	Research focuses on the specific and concrete
	Thought governed by hypothesis and stated theories	Seeking to understand specific context

In simple terms ontology is described as one's view of reality and being and the view of how one acquires knowledge is termed epistemology (Carson *et al.* 2001). In this case, the realities of being a working distance student is explored holistically as a starting point. In this paper, the claims and assumptions that are made about the nature of social reality are linked with the claims about what exists. The epistemology of this study then would be 'how the students identify as being working professional and students at the same time and how they draw support from their identities – with a particular focus on social media'. Understanding what is meant when claims of social media as learning support tools are made. Together, studying what is known and what we mean when we say



we know something know makes up the research paradigm, which in this case is the interpretivist. With this study being an exploratory study, the interpretive approach chosen is useful at attempting to understand the nature of the way in which a phenomenon exists and operates within a given context from the participant's perspective (Elliot & Timulak, 2005), in this case, how distance learners perceive the role of social media in their learning support ecosystem .

### **3.3 Research design**

According to Patton (2002), qualitative research methods are employed as a base for understanding processes, meaning and purposes (Herrington, Reeves & Oliver, 2010; Creswell, 2012; Liamputtong & Serry, 2013). Qualitative research methods focus on internal realities and highlights how the world can be experienced in multiple ways. It is based on the assumption that there could be different ways to interpret a phenomenon to understand the meaning that people construct of their world through their experiences. Therefore, the role of the researcher is described to be one where the researcher remains open to new knowledge throughout the study and lets it develop with the help of informants. Individual and facilitated group discussions are mainly used to gather evidence in qualitative studies.

Interviews are most appropriate where little is already known about the study phenomenon or where an in depth understanding is required from individual participants (Oltmann, 2016). Interviews are also particularly appropriate for exploring sensitive topics, where participants may not want to talk about such issues in a group environment.

Focus groups are equally important but used differently to gain insight to shared understanding of participants within the same context. The length of interviews varies depending on the topic, researcher and participant. For interviews to be productive it is important for researcher to ensure a safe space where the interview can take place. In the case of online interviews, the researcher must ensure that the participants are comfortable in using the tool, or the researcher would need to offer training prior the interview. The environment needs to be

that which is familiar to the participant and mostly so, the interviews need to be conducted at a time most suitable to the participant.

The study's primary research questions could not be answered with just one specific research approach, and a rationale of each research method used to address the research question is explained below:

1. Which formal and informal tools make up students' learning support ecosystem and how do students perceive the support they get from these tools?

This question allowed for a mixed approaches, with first part of the question lending itself to a more quantitative research method such as a survey. This question required the researcher to quantify the tools that are used by the students to support their learning. It also takes it a step further by exploring their usefulness by means of ranking. It would not just be sufficient to know the usefulness of the tools, but the researchers sought to understand when the students use these tools the most during an academic calendar. This was done by mapping the life cycle of the tools.

The second part of the question looking into students' perceptions of the usefulness of the tools, and the actual usage of the tools. This part was addressed in both the survey (short open-ended questions) and in the individual conversations.

2. Which boundaries do students cross when using these tools and how does social media (such as WhatsApp) facilitate the crossing of these boundaries?

This question was addressed through qualitative methods (semi-structured individual and group conversations). Attempting to identify the different boundaries that are either intentionally or unintentionally crossed as students interact with the different tools within their ecosystem of learning

support. This question had interest in how students use social media (such as WhatsApp) to facilitate the crossing of the identified boundaries. Through individual conversations students would be able to share experiences. However, a common understanding need to also be explored and that was done through a group conversation. In answering this question, one also needed a holistic understanding of the students' learning ecosystems, both formal and informal and how these complement each other and identify what the School does well in terms of support and the gaps. This allows for a broader discussion in understanding the collective experiences of the formal support strategies and the perceived benefits of social media.

3. What learning mechanisms takes place when students cross these boundaries?

This question lent itself to a qualitative approach in the form of an interpretative analysis which is discussed in detail in section 3.7 using Akkerman and Bakkers concept of boundary crossing learning mechanisms.

As highlighted above the study employed a predominately qualitative research approach, with a small element of quantitative method. As such, the research questions could not be addressed by one framework. Below is a table outlining the research questions, the instruments used and the guiding theories/framework. However, the main framework used to address the main question was the boundary crossing framework by Akkerman and Bakker (2011).

**Table 6:** Overview of research questions, data collection instruments and guiding theory/framework

<b>Research question</b>	<b>Research method/Instrument</b>	<b>Guiding theory/framework</b>
<b>RQ part 1:</b> Which formal and informal tools make up students' learning support	Quantitative method – online survey	See Figure 1 ecosystems of learning support adapted from Barron (2006:195)

ecosystem		
<b>RQ1 part 2:</b> How do students perceive the support they get from these tools?	Mixed method – online survey ranking, individual and group conversations	See Figure 1 ecosystems of learning support adapted from Barron (2006:195)
<b>RQ 2 part 1:</b> Which boundaries do students cross when using these tools	Qualitative method – individual and group interviews	See Figure 1 ecosystems of learning support adapted from Barron (2006:195)
<b>RQ2 part 2:</b> How does social media facilitate the crossing of these boundaries?	Qualitative method – individual and group interviews	See Figure 1 ecosystems of learning support adapted from Barron (2006:195) and the concepts of boundary-crossing by Akkerman and Bakker (2011)
<b>RQ 3:</b> What learning takes place when students crossing boundary?	Qualitative method – individual and group interviews	Boundary-crossing learning mechanisms by Akkerman and Bakker (2011)

The following sections describe a step-by-step approach to how the data was collected and the rationale behind the choice in the method used

### 3.4 Description of study participants

The participants of this study consist of working health professionals registered for the distance PGD programme at the School of Public Health, University of the Western Cape. For 2018, twenty-three students registered, nineteen of which are first year students and four are old students in their second year of enrollment (slow track or repeating modules). Both cohorts were of interest to the study because of their rich composition in terms of culture, age and professional and academic experience.

The first year students would have completed three terms and the challenges transitioning into

distance education would be fresh on their mind, while the second year students will have had a better chance to reflect on how the ecosystem of support has played a role in supporting or enhanced their learning experience over the course of three semesters.

### **3.4.1 Participant selection and study sites**

The research was based on exploration of social media in distance learning ecosystems of support at the School of Public Health, postgraduate diploma programme. The school forms part of the Community Health and Sciences at the University of the Western Cape. This is where the researcher is based. Her primary responsibility is to support students and staff with technical e-learning issues. Based at the school, the researcher and the students had already built a relationship, and this allowed the researcher access to the research participants. However, the researcher still needed permission and buy-in from the programme coordinator to vouch for the study for better response or participation. Additionally, working closely with the participants enabled the researcher to probe rich qualitative data by asking for clarification of issues, depending on their responses. This was also because of the relationship that had been built over time with students which added value to the reliability of the study.

The researcher aimed for a variety of students in terms of demographics and study level (1st and 2nd year) so that findings could be representative of the programme population. Although the students are registered students of the school, they are geographically dispersed, leading to the study sites to be virtual or online. The study was done in three parts, with the first phase being the scoping of the phenomenon using an online survey. The survey was sent to all the students registered for the PGD. The intention was to reach 23 students, but only 18 responded. The second phase of the study was conducted through qualitative semi-structured interviews, conveniently sampling students who were

available and willing to participate in the in-depth interviews. Though eight students had initially shown interest, two dropped out of the study due to work commitments and personal issues. The last phase of the research employed another qualitative data collection approach, i.e. facilitated group discussions with the six students who also took part in the in-depth interviews. Even though the research participants (students) were not a representation of the School or even the institution as whole, they were the only students that showed interest and willingly shared their perceptions and experiences of their ecosystems of support. Similarly to Ithindi (2014) in her study also used six participants as the maximum number of participants grouped in a WhatsApp group. While Patton (2002) highlights how qualitative inquiry focuses only on a relatively small number of participants selected purposefully to enable better understanding of a phenomenon unlike the quantitative methods that make use of randomly selected larger samples. Maxwell (2008) goes on to state that the nature of qualitative research only allows a small number of individuals to be studied.

### **3.4.2 Collecting data online - social media**

Salmons (2016) argues the assumptions that individuals can only have meaningful dialogue when they are in the same physical space is traditional and rather outdated. She bases her stance on the fact that we live in a contemporary world where multiple areas of life, including carrying out personal, social and professional conversations, shopping, working, and many other activities which previously relied on physical presence, are now conducted online. This then gives rise to online researchers (or e-researchers) which are having to adapt and re-invent qualitative research designs to study patterns of activity or behaviors exhibited in the online world. They also use online communications methods to ask questions about any area of the lived experience. For example, an e-researcher can communicate online with a participant located in another part of the world, to ask about how she interacts in her professional or local community. Online platforms or applications allow for one on

one, one-to-many, or many-to-many interactions. They also allow for the creation, archiving and retrieving of user-generated content (Salmons, 2014). Social media sites such like WhatsApp offers its own mixture of communication features and constraints. With the some of the features being a wide range of written, visual, verbal, and/or multimedia choices which were used in this study. Such like in any data collection, ethical considerations need to be taken in to account especially when working on the role and experiences of humans (see section below).

### **3.5 Ethical considerations and validity**

The researcher is a Master student at the University of Cape Town, and as such she sought ethical clearance from the School of Education to conduct her research, and permission was granted. However, in addition to this, the researcher also required permission to conduct the study from the University of Western Cape, the site of the study. For that reason, the researcher had to seek additional approval from the UWC ethics committee and was granted permission (Appendix A). Lastly, the researcher had to inform and get approval from the Head of Department and programme coordinator at SoPH to contact and interact with the students.

Even with the institutional clearance and permission, the researcher still had the following detailed considerations to undertake in order to ensure an ethical approach was performed throughout the research process. Due to the nature of the research study, participants could reveal sensitive information when reflecting on their experiences which they wish not to be directly attributed to. In response to this, confidentiality was maintained by using pseudonyms to represent the research participants (students) and all collected and analysed data was kept confidential with true identities of the participants only known by the researcher and will therefore not be disclosed in this report. By

completing the survey, the students consented and were aware that the online survey collected responses anonymously while the interviews were conducted by the researcher in a safe and comfortable space ensuring the participants participated as freely as possible and expressed themselves to the best of their ability. Participants had to consent even though the interviews were conducted in a private online environment (Brown, Pallit and Walji, undated). The research participants for the survey and interviews signed consent for their data to be used in this research ([Appendix B](#)).

Though scholarly rigor was applied at different phases of data collection (explained in the sections below), the researcher applied additional steps to ensure validity and trustworthiness. Reflexivity (Viktor & Stierand, 2018) needed to be applied throughout data collection, with the researcher being a distance student herself and conducting research on her profession. The researcher needed to apply constant reflexivity to ensure open-mindedness, and to mindfully journal her conceptions, attitudes and knowledge about the study population and the subject under investigation. The journaling process helped her to reflect, recognise and describe any beliefs and biases that may have impacted on the research process, and the outcomes. The researcher had to also suspend any prejudgments about the participants' reality so that she could see it as the participant does.

### **3.6 Data collection methods**

Qualitative research methods were predominantly used to address the primary research questions. Creswell (2012) highlights the importance of qualitative interviewing which is to capture how those being interviewed perceive their world, to learn their terminology and judgments, capturing the unique and complexities of their individual or shared perceptions and experiences. However, a small



element of the study used quantitative methods in the form an online survey. Morgan (1997) pointed out that combining research methods has a potential to add value to the research project, irrespective of which research method is predominant. A mix of data collection techniques was employed to allow for triangulation.

### **3.6.1 Online survey**

The online survey followed a combination of questions to collect qualitative and quantitative data in a blend of closed and open-ended questions. This approach provides a position to analyse statistical data and brief stories relating to the participant experiences of a phenomenon (Clark & Creswell, 2008). A survey was developed and piloted with five colleagues at the SoPH doing their Masters' in Public Health by distance and three colleagues from the School of Education at UCT also doing their Master by distance. The pilot participants were chosen because they resembled close characteristics of the actual study participants; they are working postgraduate students, studying at a distance and were in some way using social media to support their learning. From responses of the pilot, the survey was refined and sent out to actual study participants. This was done to avoid overburdening the actual study participants by asking them to participate in multiple phases of the study.

The survey finally yielded 18 detailed, rich and usable responses from 23 potential participants (response rate= 78%), after multiple requests for survey completion. The survey served as an indicator for establishing students' support ecosystems regarding tools and technologies with a particular focus on the extent to which social media form part of their ecosystems of learning support and its perceived usefulness in supporting their learning as distance students. Google forms automatically summarised responses from the survey, and the summaries were saved on the

researcher's google drive. The responses also informed the refinement of the in-depth individual interview schedule. Due to the nature of the survey being anonymous, it allowed participants to respond truthfully and honestly to the research questions.

### **3.6.2 Semi-structured interviews**

As a follow-up to the survey, participants were approached to take part in an online interview via Skype. Interviews allow the researcher to deeply grasp the richness of his/her participants' narratives (Czerniewicz & Brown, 2014). In this phase of data collection, individual students were interviewed to get a deeper insight into their perceptions of their ecosystems of support and for the researcher to gain a deeper understanding on how the tools which form part of their ecosystems support their learning with a particular emphasis on social media (WhatsApp). This phase was about individual narratives of how participants felt when using different support tools. The importance of using this qualitative research methodology was also to understand how they draw on support using different tools when they are at different phases of the PGD programme, exploring the lifespan of support offered by different tools.

The in-depth interview strategy was envisaged to follow a semi-structured approach with predominantly open-ended questions and where closed questions were kept to a minimum (see [Appendix D](#) a sample of the interview guide).

Willing students responded to an email sent by the researcher with the signed content form, their contact details and suitable time and date. Though initially, eight students showed interest, finding the time to participate in the interviews proved to be of difficulty. The researcher opted for a more flexible option by suggesting using WhatsApp chats rather than telephonic or Skype conversations to

conduct the interviews. Participants agreed to this method and provided the researcher with their WhatsApp contact details by email.

The interview protocol was adhered to, this included asking for permission to interview the students, explaining the nature of the study and how participation in the study was voluntary via email. Students, who had responded to the email requesting showing interest to participate in the study provided the researcher with their WhatsApp contact details and they had also sent back a signed consent form. Upon the granted permission, the conversation commenced by the researcher posting a question and at a time convenient to the participant, they would respond using a combination of text, emoji's and voice-notes. Emoji are ideograms and smileys used in text messages. They are from a range of genres, such as facial expressions, common objects, places and types of weather, and animals. Like emoticons, emoji are actual pictures instead of typographics (<https://www.emoji meanings.net/> ). This asynchronous chat interviews spanned over a 1-1.5 day with about 5- 6 of a total of 11 questions a day - depending on how much time the participant had available. This method afforded participants ample time to reflect on the questions posted therefore providing meaningful, rich data. With permission from the participants, the conversation/chat history was exported as a text file and saved on the researchers Google Drive, while voice-notes were transcribed and inserted into the exported WhatsApp chat transcripts.

The decision to use WhatsApp proved to be suitable for a variety of reasons: First, significant portion of participants had indicated during Phase 1 (the online survey) of the study that they were familiar with it and were using it extensively. Second, WhatsApp is a free messaging service and users can send each other multimodal content including images, videos and audio messages - using very little to no data (depending on provider and data plan). This shows how Phase 1 of the study informed the

design of Phase 2 and 3. Of importance, WhatsApp affordances allowed the participants to take part in the study without necessarily taking them away from their routine duties. Participants could therefore be in touch with the researcher, other participants (Phase 3) as well as their community at large.

Lastly, to preserve validity, it was important for the participant to accept the content of the transcribed interview before data analysis commenced. This is called member-checking, also known as participant or respondent validation, and is a technique for exploring the credibility of results (Birt *et al.*, 2016). This was employed to make sure that the participants' views are accurately recorded, giving him/her the opportunity to reconstruct his/her narrative.

### **3.6.3. Facilitated focus groups**

A focus group discussion (also via WhatsApp group chat) was conducted after the individual in-depth WhatsApp conversation had been completed. It aimed at finding out firstly what students understood to be learning and to share their experiences of using social media (WhatsApp) to support their learning. A group of six students, five females and one male, formed part of this phase of the study (one participant was inactive, not responding to questions). The researcher initiated the WhatsApp group and with the permission of the students, they were added to the group. Like as in phase 2, the discussion was initiated by the researcher, but there were no pre-arranged questions; and there were only four main guiding questions that were expected to change, depending on the type of responses the participants would provide. This was due to the fact that an unstructured focus group discussion would enable the researcher to probe deeply should the need arise, skip probing questions that were already answered during interactions, and follow new topics that were likely to arise

(Morgan, 1997). The group was created a day before the start of the actual group discussion, with the first day dedicated at introducing the students to each other and the researcher. Even though they might have known each other to create rapport for safe and comfortable expression of opinions. The study was also explained to the students and how the discussion group was expected to run. The discussion ran over two days with two main questions posted a day (one question in the morning and another midday). On both days the conversations ran until 18h00 and then started again at 10h00 in the morning. The conversation was then exported via text file from WhatsApp and saved on the researchers Google Drive as a word document. A debriefing session of 20 minutes was also conducted exploring the use of WhatsApp as a data collection method. The researcher notified the participants that the group was then going to be deleted and with permission, the researcher deleted the group.

### **3.7 Data analysis**

Data analysis is conducted to organise and highlight significance to data (Maxwell, 2008). As stated in the sections above, this study employs a predominately qualitative research approach. However a small element of the study was conducted using quantitative research method. This meant that the study has two sets of data; quantitative and qualitative data. With the quantitative data collected from the online survey (Google form), responses were automatically collated and summarised by the tool used (Google forms) - in particular, graphs and pie charts. The quantitative survey data were analysed using frequencies and percentages and then reported descriptively. In addition to the quantification of tools and their usage, the researcher attempted to map out a typical student ecosystem using Barron's (2006:195) model of a learning ecosystem. In using Barron's model of learning ecosystems, this was an attempt to address the first and the second research question. Barron

defines a learning ecosystem as a set of contexts found in physical or virtual spaces that provide opportunities for learning. These contexts are comprised of unique configuration of activities, material resources, relationships, and the interactions that emerge from them give rise to sociocultural differences (boundaries). This study is particularly interested in exploring how students facilitate learning moving in between (crossing) these boundaries using social media and what kind of learning takes place (Akkerman & Bakker, 2011). Therefore, typical learning support ecosystem needed to be mapped out including the tool usage and the different boundaries students crossed within their ecosystems.

In response to the second and third research question, the second set of data was that of students' open-ended responses from an online survey, individual interviews, researcher's notes, and facilitated group discussion interactions. These sets of data were read through repeatedly and coded thematically to identify emerging themes. The appropriation of cultural tools/practices or interaction students' ecosystems of learning support was explored. Themes are reported in relation to the four learning mechanisms described in Table 4 below adapted from Akkerman and Bakker (2011). The table depicts the relationship between the analytical framework constructs, research questions and how the researcher was able to find evidence of the learning mechanisms.

This study draws on the concept of boundary crossing as it highlights ongoing, complex actions and interactions between contexts rather than one-sided transition. Therefore, using Akkerman and Bakker's (2011) framework which identifies four learning mechanisms regarding the process of boundary crossing to analyse the qualitative data as shown in the Table 7 below.

**Table 7:** An analysis overview of boundary mechanisms indicators within an ecosystem of learning support and interview questions

<b>Boundary mechanisms of learning</b>	<b>Evidence or characteristics of learning mechanism based on social media as the boundary crossing tool</b>	<b>Interview/ focus group question asked to evaluate mechanism</b>
<b>Identification</b>	<p>Identities are negotiated (health professional versus student) on social network sites across formal and informal learning/cultural boundaries.</p> <p>Different support affordances are compared, and different interactions are facilitated using social media.</p> <p>(Bakx <i>et al.</i>, 2016; Jiang &amp; Edirisingha, 2018)</p>	<ol style="list-style-type: none"> <li>1. How did you find transitioning into the programme as working professional?</li> <li>2. What role did social media play in helping you transition into the programme and in supporting your learning?</li> <li>3. How many social media accounts did you belong to how did they contribute towards your learning?</li> </ol>
<b>Coordination</b>	<p>Purpose for interaction and use of social media is established and coordinated. The interaction is routine with a common understanding.</p> <p>(Lucas &amp; de Freitas Gonçalves, 2009; Sorte &amp; Rathod, 2016)</p>	<ol style="list-style-type: none"> <li>4. Specifically with WA groups, if you could give an example of what sort of topics were discussed or kind of interaction which occurred?</li> <li>5. How frequent did these discussions and interactions occur?</li> </ol>

<b>Reflection</b>	<p>Students reflect differently on how they draw support using social media, they begin to make sense of their support ecosystem as whole and how these differ from one to student to another</p> <p>A stimulation of reflection that is closely linked to sharing and discussing of professional/ and academic experiences of geographically dispersed students</p> <p>(Pimmer <i>et al.</i>, 2014)</p>	<p>6. Did you feel that discussions and interactions that occurred on social media counted as learning?</p> <p>7. Were there any other groups that emerged from the main group, for example subgroups?</p> <p>8. Were relationships formed beyond the academic context?</p>
<b>Transformation</b>	<p>The transformation of traditional academic and sociocultural practices to address gaps in distance learning support. Moreover, redesigning learning support ecosystems to be effective and accommodative of students frequently changing needs.</p> <p>(Goos &amp; Bennison, 2018)</p>	<p>9. How would you feel if social media was integrated as a formal support tool at the School of Public Health?</p> <p>10. What other support strategies would advise the School?</p>



Interpretations of participants responses were built progressively by arranging deductive codes to the boundary crossing analytical framework and making meaningful notes. Thereafter, identifying key themes as they related to a patterned response or meaning within the data sets. Most of the themes were based on prevalence within the data, while others were interpreted from the underlying ideas, perspectives, and experiences of the study participants.

Boundary crossing framework has proved to be a revealing framework from which to explore learning and support of learning within complex learning ecosystems of postgraduate working students. Drawing on the boundary crossing analytical framework also provided the opportunity to understand how student negotiate and facilitate their own learning.

### **3.8 Conclusion**

This chapter presented an overview of the research methods described to be qualitative that were used to conduct the study. This chapter described the different phases of the data collection, with the first phase being an online survey (small element), the two main phases were the individual WhatsApp conversations and the groups discussion. Ethical issues pertaining to seeking permission to conducting research at two institution (UCT and UWC) are outlined. Another ethical issue that was discussed in detail are issues around conducting research online and its standing in the research world.. The next chapter sheds light on how the data collected from the three research tools was analysed and presents the findings of the study.

## CHAPTER 4: FINDINGS

### 4.1 Introduction

This chapter presents findings of this study which was focused on postgraduate Public Health students' experiences of using a range of tools to support their learning with a focus on social media (WhatsApp). The study also aimed at exploring students' ecosystem of support to understand how informal tools such as social media have the potential to facilitate boundary crossing. This chapter sheds some light on the different boundaries that students cross using WhatsApp as the boundary crossing object. The data was collected in three phases (in addition to the pilot which we will refer to as the planning phase and will therefore not be reported on). The three phases of the study which are explained in detail in the previous chapter, included the following:

- Phase 1, where an online survey was sent out to the whole PGD class to get a quantified understanding of the tools which forms part of students' ecosystem of formal and informal support and why and how participants use these tools. These tools are reported on and presented in the second section of this chapter. However, prior to this section, a detailed description of the participants demographics is outlined in this chapter.
- Phase 2, where WhatsApp was used as a tool to conduct individual interviews with six participants to share their experiences of using formal and informal support tools with focus on their experiences of WhatsApp as a tool to support learning. This section of the work will also present the perceptions of those that

had not used social media and lastly close off with presenting challenges of using social media as a learning tool in distance education.

- Phase 3, where a focus group discussion (also via WhatsApp chat) was conducted after the individual in-depth WhatsApp conversation had been completed. This focus group was aimed at exploring in more depth students' understandings of learning and learning support and to identify possible instances of boundary crossing. Boundary crossing was used as both conceptual and analytical framework. Several themes emerged from coding and analysing the data. However, the themes that are highlighted and presented in this chapter are those that answer the research questions that guide this study in an attempt to gain a better understanding of the phenomenon.

This chapter opens with a description of biographic and background information of the study participants. These are discussed in terms of their gender, age and experience in order to provide some insight in general characteristics of participants that were studied. Furthermore, the chapter sheds light into each research question to determine emerging themes and relationships among the constructs underpinning the analytical and theoretical framework used.

## **4.2 Who were the participants?**

### **4.2.1 Demographic characteristics of participants**

This section presents the participants' demographics in terms of gender, age, and experience (year of enrolment and whether this was the first programme they studied at a

distance or not). The survey received 18 responses out of 23 (this is a response rate of 78%), which can be considered a good response rate for a predominantly qualitative online study (Clark & Creswell, 2008). Each participant is identified by SurP# (where SurP represents survey participant and # represents the participants' unique study number). The active participants are representatives in terms of the demographic spread that characterizes the PGD class (in terms of gender, age, experience in distance education). Seven participants were male and eleven were female, although the participants' demographic distribution was not deliberate, as it was conveniently sampled. Table 8 below illustrates the distribution by gender and age of the study participants in relation to the PGD class.

**Table 8:** An illustration of participant's gender distribution in comparison to the actual PGD class

<b>Gender</b>	<b>Study participants</b>	<b>PGD Class</b>
Female	11	14
Male	7	12
Total	18	26

**Table 9:** An illustration of participant's public health profession distribution

<b>Occupation</b>	<b>n</b>
Dietician	1
General practitioner	1
Health promoter	1
Nuclear medicine radiographer	1
Nurse	3
Occupational therapist	1

Pharmacist	1
Physiotherapist	1
Programme coordinator/officer	3
Psychological counsellor	2
Senior lecturer	1
TB laboratory scientist/trainer	2
<b>Total</b>	<b>18</b>

Table 9 is representation of the wide range of health professions of the participants which took part in the study. 16.7% of participants in the nursing and programme coordination profession, followed by a representation of laboratory trainers and scientists.

**Table 10:** An illustration of participant's age distribution

<b>Age</b>	<b>n</b>
25-35	10
36-40	4
41-50	1
51-65	3
Total	18

The programme accepts health professionals in possession of a bachelor's degree who have been working in the public health sector for at least three years. This means that the programme is made up of junior and senior health professionals. The majority (n=10) of the participants were between the ages of 25-35, while four were between 36-40. Four participants were above 40. This can possibly allow for a rich diversity in experiences. Table 11 below illustrates years of enrolment distribution.

**Table 11:** An illustration of the enrolment distribution

<b>Year of enrolment</b>	<b>n</b>
1 <sup>st</sup> year	11
2 <sup>nd</sup> year	7
Total	18

The majority of the participants are in the 1st year of enrolment, which is usually the biggest cohort in the programme as it is a mixture of both fast trackers and slow-trackers. This is a true reflection of the actual student distribution in the PGD programme. Seven of the participants are in their 2<sup>nd</sup> year of enrolment. The second-year cohort is usually smaller as most students choose to do the programme over one year. The second-year cohort is also combination of slow-tracking and repeating students. This table shows that participants were at different stages of the PGD programme and therefore their reflections on the support would be as representative as possible.

**Table 12:** An illustration of distance education experiences

<b>Distance education experience</b>	<b>n</b>
First-time distance student	12
Studied via distance before	6
Total	18

As shown in table 12, more than half of the participants (n=12) had never studied at a distance before, and this was their first time to enroll in a distance programme. This data reveals that most of the participants are new to distance education, providing useful reflections on the challenges of first-time distance students. They provided fresh

experiences of how tools can adequately support their learning as well as transition into distance learning. Next, common challenges of working students will be explored.

#### **4.2.2 Anticipated and experienced challenges encountered by working distance students**

In order for the researcher to understand why some tools are more effective than others in supporting student academic needs, and how social media enhanced boundary crossing in students’ ecosystems of support, she needed to first understand some of the fears students come into distance education with and how these are related to the actual challenges participants experience as working distance students. In the survey, the participants indicated that their main fears at the beginning of the programme were balancing different responsibilities (94%) and time management (89%), followed by establishing a learning routine (78%), and understanding contents and concepts (67%). Least of their fears was access to technology, digital skills (39%) and engaging with peers at distance (28%).

**Table 13:** Participants fears before starting distance education programmes

Item	Strongly agree & Agree (n)
Balancing different responsibilities	17
Time management	16
Establishing a learning routine	14
Understanding content and concepts	12
Finding motivation	9
Data cost	9

Loneliness	8
Digital skills	7
Access to technology	7
Engaging with peers at distance	5
<b>Total</b>	<b>18</b>

In the individual conversations, we discussed challenges and experiences of participants in the course in more detail, and the above findings were supported as similar themes frequently emerged. However, in the focus groups additional themes were discussed in relation to the choice of support tools students used which is presented later in this chapter. The main themes that emerged were still; time constraints/difficulty balancing different responsibilities, with the lack of orientation for distance learners and lack of contact classes as newly emerging themes from the interviews.

**Table 14:** Challenges experienced by participants as per individual conversations

<b>Themes</b>	<b>Encountered challenges (examples)</b>
<b>Time/ balancing responsibilities</b>	<p><i>IntP1</i> – “...my work is actually really demanding so it is quite difficult to balance my studies and my professional duties so I have to neglect some stuff. Like on days when I am called in, I have to cancel it and dedicate it to my study time so that is why I get to balance.”</p> <p><i>IntP2</i> – “Time management, I would give more time to school in fear of failing, at first I got easily distracted and either school or work suffered... focus and discipline.”</p> <p><i>IntP4</i> - “Challenges include not having enough time to go through the material provided, sometimes not understanding what is required of me to do especially the assignments.”</p>



**Orientation**            *IntP3* – “...it was very challenging, I had lots of pressure in the first semester compared to the second semester because I lacked that orientation. I failed to submit most of my draft assignments unlike in the second semester when I am submitting all my drafts ahead of the deadlines.”

**Contact classes**        *IntP5* “...What I found challenging about working and studying at distance was the lack of contact classes and time constraints”

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Participants highlighted challenges around time management in relation to balancing responsibilities in the survey, and this table shares some of the participants lived experiences as emerging from interviews and the focus group. This highlights how some of the health professions are time demanding and come with enormous pressures making it difficult for students to find time to dedicate for their studies. This has negative impact on their academic performance as students struggle to find the time needed to work through the module content and to submit assignments on time (drafts and final submissions). These challenges already flagged the need for tools that allow the crossing of temporal and geographic boundaries in order to overcome such issues.

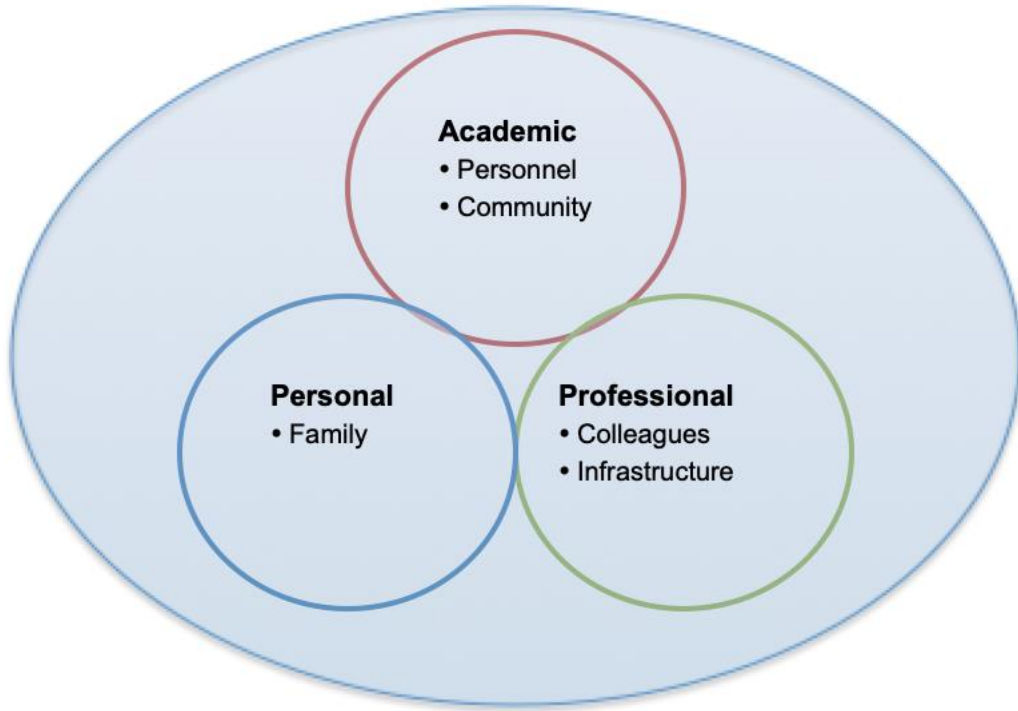
Participants also raised concerns about the importance of contact classes or orientation classes. Winter and Summer school are made available to students but are optional (see [section 1.1.2](#)). These are meant to help students settle into the programme and provide them with the necessary orientation. Participants highlight how non-attendance can have a negative effect on their performance. One can associate this with the need for tools that will provide students with the opportunity for online orientation and increased online

support and guidance at the beginning of their studies to coordinate their learning and overcome geographic boundaries.

The section below explores into details how the ecosystems of support most importantly how interactions and group dynamics of WhatsApp groups enhances learning.

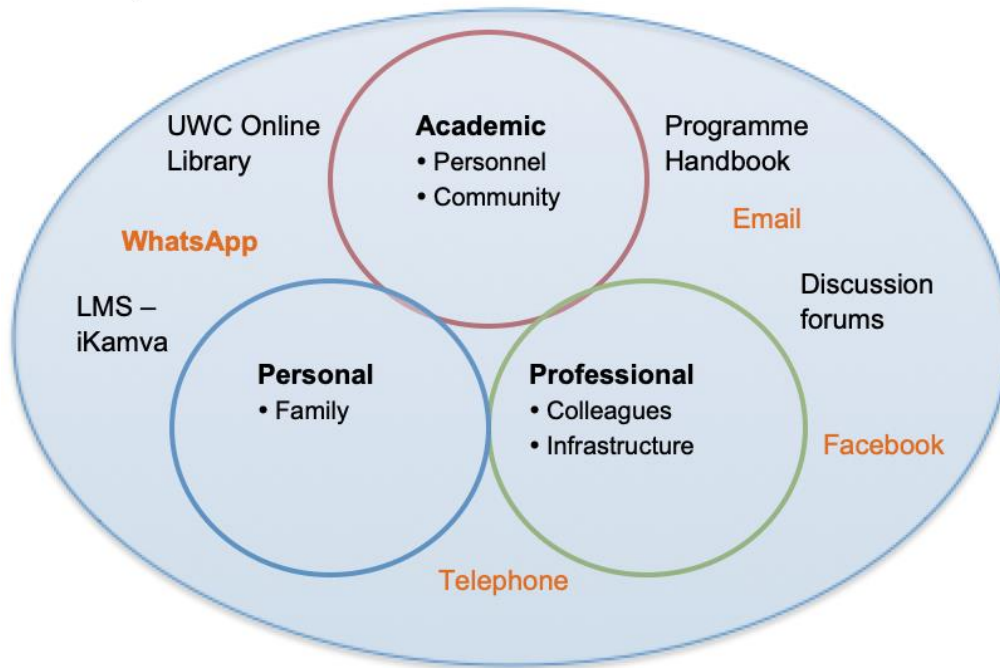
### **4.3 What formal and informal learning support tools make up students' learning support ecosystem?**

This study looks at formal and informal support strategies to try and understand how they complement each other and at the same time, to understand how each tool supports students learning and ultimately, facilitate boundary crossing. This section of the work responds to the first research question that tries to map out students' ecosystems of support. It reports on a list of the tools that were used by the students, drawn from the online survey responses and the different categories in which these tools belong (formal and informal learning tools). How these tools were categorised is explained in detail in [section 2.3.1](#) of this report. Below is figure 3, a diagram illustrating the variety of resources and structures that make up the students' ecosystems. Participants outlined these structures and tools as sources of support from both the survey as well as the interviews.



**Figure 3:** Participants' ecosystem of learning support (Support structures)

Participants have highlighted how they draw support from academic personnel (administrators, e-learning specialist and module convenors) using various modalities (described below). Colleagues and family have been noted by participants as valuable structures of learning support in distance education.



**Figure 4:** Participants’ ecosystem of learning support (tools)

In addition to the support structure highlighted in figure 3, figure 4 is a diagram which represents a range of tools that are either offered to the students by the university or the school, and these are classified as formal tools (in black). However, students were not limited to these tools and were found to have been using other tools to support their learning. These tools are described as informal tools (see chapter 2 for categories, represented in the diagram above in orange), with some tools seen to be boundary-crossing tools as these tools are used formally and informally depending in this context such as (WhatsApp and Email). Below is data from the survey that explored to which extent the tools were used.

### 4.3.1 Usefulness of tools within ecosystems of support

The study extended to understand the extent to which the participants used the tools which form part of their ecosystem of learning support. This was to highlight the importance of certain tools over others. Table 15 below reports on the quantitative data collected from the online survey.

**Table 15:** An illustration of participants' usage frequency per formal tools

Formal tools	Frequency of use					
	Used the time	all	Used often	Used sometimes	Not used	Total
Email	4		10	4		18
Discussion forums	2		6	8	2	18
LMS - iKamva	18					
SoPH programme handbook	3		13	2		18
UWC online library	3		7	5	3	18

Table 15 shows how often the formal tools were used, with email communication and the SoPH programme handbook being the most used tools. Discussion forums and the online library were found to be the least used tools, with three participants noting to have never used the online UWC library.

**Table 16:** An illustration of usage frequency of informal tools

Informal tools	Frequency of use				Total
	Used all the time	Used often	Used sometimes	Not used	
Email	2	6	8	2	18
Telephonic conversations		3	5	10	18
WhatsApp	9	3	4	2	18
Facebook	1	1	3	13	18
Twitter			1	17	18

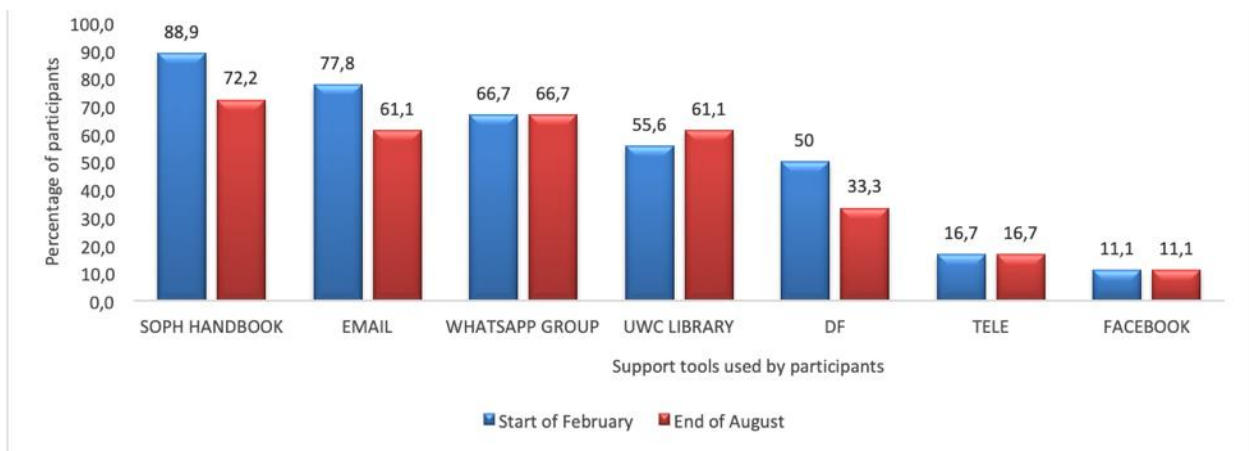
Moving over to tools that were used informally, Facebook and Twitter were used least with only five participants using Facebook and only one participant reporting to have used Twitter. Eight participants use telephonic conversations, and sixteen email. Email and telephonic communication were classified as informal due to the content and context of the communication. This communication is more around student monitoring and follow - up which is not necessarily a formal procedure at SoPH. However, all the participants reporting to have used WhatsApp with nine (50%) using it all the time. This highlights that of the informal tools used by students, WhatsApp can be found to be the most prominently used tool for informal learning purposes.

### **4.3.2 Change of tool usage across academic semesters**

While the previous section illustrates the range of tools within students' ecosystems of learning support and the extent to which students draw support from these tools, it is as important to understand how and when the different tools are useful to students for

effective support strategies. Data collected from the survey looking at the usage of tools over a period of six months (one academic semester: from February till the end of August), show that the usage of certain tools remain the same, such as WhatsApp groups, telephone communication, and Facebook. The use of the Programme handbook slightly decreased as well as the use of Email, while the UWC online library increased in usage in the second semester. From figure 5, one can deduce that the three tools that the students felt supported their learning the most was the SoPH programme handbook, email communication, and WhatsApp groups.

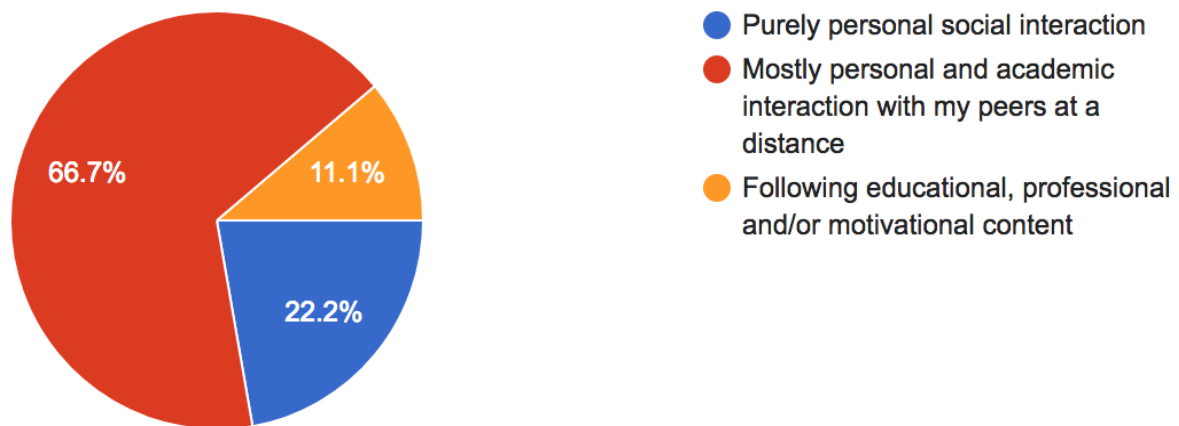
As the purpose of the study was to examine the extent to which social media forms part of the student support ecosystem, the section below explores the students' social media, perceptions, and actual use.



**Figure 5:** Change in usage of tools of over the academic semesters

With the study being particularly interested in social media as learning tools, participants were asked how they were currently using social media to support their learning. Figure 6 below indicates that twelve participants (66.7%) used their social media accounts for

both, personal and academic interaction with peers at a distance. Four participants used it for purely personal, social interaction, the other two participants (11.1%) used their social media accounts to follow educational, professional and or motivational content only.



**Figure 6:** An illustration of the use of social media

Furthermore, participants were asked whether they felt to what extent social media helped them in their learning on a scale from 1- 5, with 1 being strongly disagree, 3 neutral and 5 strongly agree. Table 17 below shows that four participants felt social media had not contributed towards their learning, while six participants reported to be unsure (neutral). Eight participants however agreed that social media had supported their learning.



**Table 17: Social media perceived learning support**

I feel social media supports my learning	n
Agree	8
Neutral	6
Disagree	4
Total	18

### 4.3.3 Social media contributions to learning

In addition to students' perceptions on the extent that social media had contributed to their learning, one of the survey questions probed participants in more details as to why they felt the way they did. This section sheds light into students' perceptions and lived experiences of using social media to support their learning. In their comments three positions could be found:

- A. students who did not use social media for learning, but could see potential benefits,*
- B. students who had used social media but could see no benefits,*
- C. students who had used social media and saw benefits.*

Lastly this section of the findings also reports on experienced challenges and reservations reported by students who had used social media for learning.

*A) No use of social media but acknowledging potential benefits*

Participant ID	Stated reasons (quotes)
SurP1	<i>"I have not just used it that way; I feel it can really help academically"</i>

---

SurP5

*“In relation to social media, I think for me it’s a missed opportunity where I could learn and reach on specific topics in relation to public health.”*

---

In this subtheme, participants highlight the potential social media has and how they had missed the benefits. The participants had not used social media for academic purposes or to support their learning, they expressed that social media as a tool had the potential to support learning.

*b) Used social media but no learning was perceived*

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<b>Participant ID</b>	<b>Stated reasons (quotes)</b>
SurP9	<i>“It is sometimes useful when you find people WILLING to assist you to interact with them. Otherwise what helps has been just to google and reading through concepts”</i>
SurP11	<i>“There was interaction with other students in reminders and updates of assignment dates but nothing much helped in supporting my learning”</i>

---

Also, of interest to the study was how the students who had used social media felt about the role it played in mediating learning. These two participants had used social media and felt it was mostly for communicating with peers and not to support their learning.

*c) Perceived benefits of using social media for learning*

However, the biggest theme as shown in the table below, was around social media’s benefits to support learning. Table 12 illustrates examples of some of the reasons the participants reported as to why they felt social media supported their learning. Some of

the emerging sub-themes under this theme were around peer support (PS), motivation (M) and timely feedback (TF), building community (BC) and lastly the accommodation of different learning needs (ALN) with peer support (n=5) and community building (n=5) being the largest emerging sub-themes.

**Table 18:** An illustration of perceived benefits of using social media and emergent themes

<b>Perceived benefits of using social media</b>		
<b>Participant ID</b>	<b>Stated reasons (quotes)</b>	<b>Emergent code (s)</b>
SurP3	<i>“It helps me in situations where I need clarification as I refer to my colleagues and discuss with them how we think about the certain topic or question.”</i>	PS
SurP7	<i>“Through social media, I managed to share different ideas with peers regarding the assignment questions and some difficult concepts encountered within the reading materials.”</i>	PS
SurP14	<i>“Social media helped as I could access study materials/ info. Interacting with fellow students was also done through social media and that too was and still is a benefit to me”</i>	PS
SurP15	<i>“Improves connectedness similar to a class set up where students can bounce ideas around”</i>	PS & CB
IntP4	<i>“It feels good that I have someone or some people to ask whenever I need help. Colleagues generally respond to messages posted on the group. It also makes e burden of studying a bit lighter knowing that u r not alone”</i>	PS & CB

SurP13	<i>"I mainly used SoPH FB page to enlighten my general knowledge around various Public Health issues and enjoyed exposure to the various articles."</i>	CB
SurP16	<i>"Benefits are that social media keeps you updated on what's happening in the academic field in your specific faculty and opportunities available for example scholarships."</i>	CB
Sur13	<i>"Its a group of people that I know so I don't have any problem. It's even better compared to face to face discussions because there are some people who are too vocal and for that reason shy people like me end up not saying anything in face to face for we feel overwhelmed. With WhatsApp you say anything, anytime and you take your time when you feel like English is disappearing"*hiding emojis*</i>	CB & ALN
SurP8	<i>"Social media especially the WhatsApp group assisted with motivation to continue the course"</i>	M
SurP2	<i>"... It is also easy and quick to get feedback from [them]"</i>	TF

### **Peer support (PS)**

The peer support sub-theme highlighted how students feel comfortable learning from one another in the absence of academic staff and also foregrounds students' agency of trying to figure things out amongst themselves before consulting the convenor for help. Information sharing was also deemed to be a benefit to the participants.

### **Community building (CB)**

This was also a large sub-theme as it emerged several times across the survey and the interviews. In this theme participants expressed how they appreciated social media in improving their knowledge around public health issues, keeping them updated as well as giving them exposure to opportunities in the field. This was attributed to strengthening the community of Public Health professionals. Also, under the sub-theme of community building was an element of participation and engagement levels referring to how students' participation on the WhatsApp group was influenced by their personalities. Students highlighted how WhatsApp allowed students who describe themselves as shy and having difficulty using English as a language of communication were afforded a safe space to interact and contribute to the group conversations. The feeling of connectedness and having someone to engage with anytime came across as a benefit that social media afforded the students even though they are at distance.

### **Motivation (M) and Timely feedback (TF)**

These were the smallest sub-themes, but they highlighted additional benefits of

social media for students learning when studying at a distance. One participant mentioned how social media helped her stay motivated to continue the course and the benefit of getting quick responses from peers and the wider community of support via social media.

*d) Experienced challenges and reservations of using social media for learning*

Although the participants appreciated social media forming part of their support ecosystem, there were experienced challenges as expected as no tool comes without its shortfalls. Two participants expressed how at times they felt overwhelmed by the influx of messages and felt that social media could potentially negatively affect their study time.

**Table 19:** Experienced challenges and reservation of using social media for learning

<b>Participant ID</b>	<b>Stated reasons (quotes)</b>
SurP3	<i>“...I sometimes totally switch it off as it can be so destructive especially after work when everyone is at home and relaxed, that unfortunately is the busy time for me when I do assignments”</i>
SurP16	<i>“...Challenges may be that one can become too attached thus it may consume your time which you could be used for studying.”</i>
IntP4	<i>“I have reservations ... many people me included feel that WhatsApp messages if they become too may can be more disturbing unless people chat at agreed times only then it can work”</i>

The above statements are evidence that even though social media comes with numerous benefits, it does come with challenges as noted by the participants, such as it being a distracting tool at times and negatively impacts study time. As such, one participant highlighted their reservations and the need for a more structured approach to using social media in order for it to be effective. In addition to the findings presented above, the next

section reveals findings on the different kinds of boundaries students cross when using social media as a support tool.

#### **4.4 Which boundaries do students cross when using these tools and what learning takes place?**

This section of the work was explored in both the individual interviews and the facilitated group discussion and the data revealed that four instances of boundary crossing were found in participants' comments. In trying to understand how social media alongside other tool facilitate learning amongst distance students, four participants stories are shared to provide context to the extent to which the use of social media as a boundary crossing tool within an ecosystem facilitates learning. Cynthia, Michael, Lerato and Zinhle whose stories are provided below. These are their pseudo names used to protect their identities. These four participants were chosen because their stories highlight the realities of being a working distance student. Most importantly, their stories show how they explicitly drew support from a range of tools within their ecosystem of learning support to cross various boundaries. These stories are added to illustrate the richness of what an ecosystem of learning support (with emphasis on social media such as WhatsApp) can potentially achieve in accommodating different academic needs bringing together the academic, profession and personal structures. From their stories (explored through individual conversation and facilitated group discussions) four boundary crossings were identified: formal/informal learning, hierarchical/disciplinary, geographical and temporal boundary crossing. The boundaries are not only identified but they are also linked to the four boundary crossing learning mechanism.



### ***Cynthia***

Is a registered nurse by profession based in Windhoek, Namibia. She is currently in her second year the postgraduate diploma in public health with the intentions of branching into Masters. In the conversations she explained how she struggled balancing her professional and academic responsibilities. Furthermore, she shared how she drew support from WhatsApp and email to help her settle into the programme and moving forward.

### ***Michael***

He is a medical officer with 13 years of experience in both clinical and administrative duties living in Zimbabwe. He has past experience of being distance student as he studied through the College of Medicines South Africa where he obtained a diploma in HIV control and management. His main challenges were around the issues of lack of orientation which in his case had a negative effect on his first semester performance as compared to his second semester. He used email to communicate with the academic staff and WhatsApp to keep up to date with other students.

### ***Zinhle***

Has been working for the past two years as a Nutrition Officer at Elizabeth Glaser Pediatric Aids Foundation in Lesotho. This is the first programme she studied via distance education and struggled with the orientation of the programme as she did not attend Summer and Winter School. Although her job is demanding she had applied for the PGD programme because she realised that most job opportunities she was interested in required one to have a public health background and Health promotion (which is one of the modules offered) had always been her passion. She explains how she mainly drew support from iKamva, email and WhatsApp groups.

### ***Lerato***

Is currently a programme coordinator at Grassroots Soccer, residing in South Africa, Cape Town. Her main responsibilities are to facilitate HIV/Aids prevention intervention activities. This is her first year of enrolment in the PGD of Public Health programme and her second time studying at a distance. Even so, she also drew support on iKamva and found the platform user-friendly nature helpful in facilitating her learning at distance. She also used WhatsApp groups to support her learning in various ways.

In having individual and group conversations with the participants whose profiles are described above, they shared stories of how they were using social media (WhatsApp groups in particular) as an element of their ecosystem of learning support. From their stories, instances of crossing different boundaries were identified and explained in sections below. Also, Akkerman and Bakkers Boundary crossing learning mechanism framework was used to interpret the learning which takes place when participants crossed the various boundaries.

#### **4.4.1 Transitional boundary crossing**

As highlighted in Cynthia and Leratos story, transition and orientation into the programme was a challenge. They are both new to distance education and in such they shared how they used WhatsApp to settle and get acquainted with the structure of the programme.

*“When we started the programme as colleagues we started the WhatsApp group. We gave each other’s contacts so people that are in SA gets to update us on the latest news, like Summer and Winter School that some of us do not attend so that is really cool as you get to be updated and get ahead with your studies” – Cynthia*

Here the participant highlights how WhatsApp allowed her to get in touch with her peers at the beginning of the programme and keep in touch with updates of the programme. According to Akkerman and Bakker's learning mechanism this shows an element of coordination as the students seemed to have identified a method to enable connections and cooperation in communication to maintain the flow of their studies.

*A South African colleague of mine when we were stuck on something that she hinted to me that there is this group ... I am not sure how they initially formed it but that is how I got hooked up into the group. Initially we were using emails to do the assignment but I found WhatsApp worked out better" – Lerato*

In the second quote, Lerato compares email and WhatsApp communication. This is evidence of identification, here the participant is comparing their experience in relation to uses of digital technology (such as email and social media). As stated by Akkerman and Bakker (2011) the emphasis is on differences and similarities. So even though both email and WhatsApp can serve as communication tools, she finds WhatsApp to be better.

#### **4.4.2 Time and space boundary crossing**

As the nature of distance education, the students are physically separated from each other and from the academic staff. However, this section illustrates how WhatsApp can facilitate in bridging communication, connection and in increasing immediacy to enhance geographic boundary crossing. The quote below highlights the re-creation of traditional spaces where pre-class discussions occur.

*"...because it's distance learning, we now have a place we were can discuss like physically like in the lecture rooms. Where we discuss issues just before the lecturer comes just to clarify issues so now we have that technique where we can discuss at a level where we as colleagues and for something we don't have to approach so that when we approach the lecturers we at least have some basis" -Michael*

The above statement highlighted that WhatsApp does not only allow the crossing of one boundary at a time but multiple. Here students are seen to cross not only geographic boundaries as they are able to find a place they can be together even though they are physically separated, but also temporal boundaries as students get the sense of being together at the same time regardless of the time zones. While this can be clearly linked to coordination, there is evidence of crossing of hierarchical boundaries which has the potential to be an element of transformation in future. This shows the potential to change the practice of consultation (where it is normally student-teacher via email to first student-student via WhatsApp and then lastly student-teacher possibly also via WhatsApp group). This can be a new practice that stands in between the existing practice.

#### **4.4.2 Formal and informal learning contexts boundary crossing**

As in formal learning platforms such as iKamva, the discussion forums are time constrained. This section reflects on questions explored the focus group discussion where the participants shared their understanding of what constitutes learning and how learning takes place. In addition, the researcher sought to understand how students value informal learning and how it contributes to their formal learning. Also, of interest to the study was how WhatsApp as a tool affords the students the opportunity to cross between formal and informal learning contexts. Below are some of the quotes that participants shared;

*“For me learning is the acquisition of new knowledge and skills. Learning can be formal or informal. Formal learning can take different forms, e.g. distance which is what we are doing and also direct which is more of face to face” - Michael*

*“Some people say you learn more when you admit that [...] you can learn from everyone regardless of age, socioeconomic status or even educational background” - Lerato*

The above quotes are evidence that participants perceived learning to take place in multiple ways (formally and informally) as they reflect on how people learn from one another regardless of the

demographics, socioeconomic status, and even educational background. This highlights how participants understand and value of the importance of informal peer learning which is also evidence of hierarchical boundary crossing. This was mediated by the use of WhatsApp. This theme frequently emerged when participants described their experiences of using WhatsApp as a tool to support their learning. They also highlighted the blurring of these formal and informal learning spaces for continued learning.

*“...we go from the discussion forum and then we go on WhatsApp to discuss the topic a bit more, especially when the topic has closed and it was interesting” - Cynthia*

The above quote is an example of how WhatsApp allowed students to move from a formal space (discussion forum on iKamva) into an informal space (WhatsApp group) to support their learning. This example of boundary crossing is evidence of identification and coordination as per Akkerman and Bakker (2011). In this boundary-crossing instance, participants are seen questioning and comparing two different sites (formal and informal learning spaces). Following the comparison of the sites, students find a way to facilitate their learning across these two sites using social media (WhatsApp) as the boundary crossing tool.

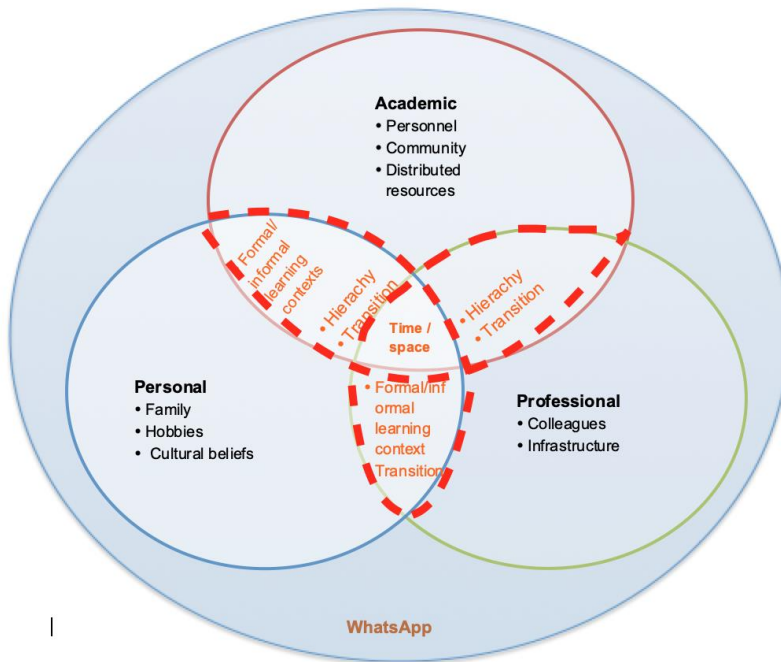
#### **4.4.3 Hierarchical boundary crossing**

In this instance of boundary crossing, Zinhle reports on how she used WhatsApp to cross hierarchical boundaries with junior colleagues to support her learning.

*“It is awkward to sometimes train people on nutrition and supervise them at the same time to go back to them and ask for help because you are now a student \*hiding emoji\*. I had a challenge with Epi and I had to contact one of my supervisee who is doing Masters in Epi .... it felt really awkward but I had to do it” - Zinhle*

The above statement highlighted the notion of social learning where hierarchies are blurred. This showed that learning was nonlinear, and that junior staff can contribute to the teaching and

coaching. Thus, WhatsApp allows the redefinition of roles and relationships. This is an element of reflections where Zinhle expresses what Jiang and Ediringha explains to be a “self-reflective process” which facilitates the rethinking of limited knowledge and the engagement of cross-cultural conversation.



**Figure 7:** An illustration of various boundary crossing within an ecosystem of learning support





The figure above is a summary of how WhatsApp as a tool afforded participants the opportunity to facilitate the overlapping of the three main elements of their ecosystem as highlighted in the sections above. As illustrated in this figure, some boundary crossing instances were observed at the intersection of two or more elements. In the instance of the transition, the participants highlighted how the academic/professional and professional/personal elements were blurred and ultimately crossed. Instances of the formal and informal boundary crossing occurred at academic/personal and personal/professional intersections. At the center of the ecosystem, at the intersection of all three elements was the time and space boundary crossing. Participants highlighted how WhatsApp allowed them to negotiate their time and redefine traditional learning

spaces by bringing together the three main elements of their ecosystem of learning support. Using Akkerman and Bakker learning mechanisms an interpretation of the boundary mechanisms of learning is provided in the next section

#### 4.5 Boundary crossing and boundary learning mechanisms

This section aims to highlight the different learning mechanisms which occurs when participants cross the boundaries described in the section above. As one of the objectives of this study was to investigate whether or not learning takes place when students cross boundaries. Table 20 below illustrate the learning mechanisms which occurred as per boundaries crossed in the context of an ecosystem of learning support

**Table 20:** an illustration of boundary learning mechanisms at intersections of ecosystem elements

Ecosystem element	Boundaries crossed	Boundary mechanism	learning
Academic – Professional 	<ul style="list-style-type: none"> <li>• Hierarchical</li> <li>• Transitional</li> </ul>	<ul style="list-style-type: none"> <li>• Reflection</li> <li>• Coordination</li> </ul>	
Academic - Personal 	<ul style="list-style-type: none"> <li>• Formal/Informal learning context</li> <li>• Hierarchical</li> <li>• Transitional</li> </ul>	<ul style="list-style-type: none"> <li>• Reflection</li> <li>• Identification – coordination</li> <li>• Coordination</li> </ul>	
Professional – Personal 	<ul style="list-style-type: none"> <li>• Formal /informal learning context</li> <li>• Transitional</li> </ul>	<ul style="list-style-type: none"> <li>• Identification</li> <li>• Coordination</li> </ul>	
Academic – Professional – Personal 	<ul style="list-style-type: none"> <li>• Time and Space</li> </ul>	<ul style="list-style-type: none"> <li>• Transformation</li> </ul>	

The table below provides a detailed interpretation of how the boundary learning mechanisms manifested.

**Table 21:** Evidence or characteristics of learning mechanisms based on social media as a boundary crossing tool within an ecosystem of learning support

<b>Boundary mechanisms of learning</b>	<b>Evidence or characteristics of learning mechanism using WhatsApp as the boundary crossing tool</b>
<b>Identification</b>	<p>Students took the initiative to negotiate their professional identities and their academic status of being distance students on social network sites across different learning/cultural boundaries.</p> <p>They also began to compare the different types of interactions (formal and informal) and identified different support affordances of using social media.</p>
<b>Coordination</b>	<p>Students interacted with one another using social media, although the purpose was interpreted differently. The interaction was routine, and a common understanding was established, which was mainly the coordination of the different learning needs</p>
<b>Reflection</b>	<p>Students reflected differently on how social media supports their learning, they began to make sense of their support ecosystem as whole. These reflections differ from one student to another depending on their learning needs.</p> <p>A stimulation of reflection that is closely linked to sharing and discussing of professional/ and academic experiences across geographically dispersed students was observed</p>
<b>Transformation</b>	<p>The transformation of traditional formal and informal sociocultural practices to address gaps. Overtime, redesigning learning support ecosystems to be effective and accommodative to students learning needs.</p>

While all boundary learning mechanisms were observed in different boundary crossing instances, coordination was evidently the most dominant learning mechanism. Elements of coordination was evident across all the boundary crossing instances followed by



identification which was found during formal/informal learning context, temporal/transitional and geographic instances of boundary crossing. Transformation was less common with one participant showing an element of reflection during hierarchical boundary crossing. It is worth noting that when students cross formal and informal learning boundaries, they are more likely to achieve more learning (identification, coordination and transformation). Likewise, with the hierarchical boundary crossing, allowing students to achieve three learning mechanisms facilitated by WhatsApp.

## **4.5 Conclusion**

This chapter provided an illustration of the tools which form part of the students' ecosystem of learning support and to some extent describe their usefulness with a particular focus on social media (WhatsApp). In addition to the description of tools, the researcher aimed at also illustrating instances of boundary crossing and how social media enhances these boundary-crossing opportunities. The data represented in this chapter confirmed that students use a range of tool interchangeably for different learning purposes and WhatsApp has proven to be the prominent social media tool that allows smooth boundary crossing in ecosystems of support of distance education. With coordination being the most observed boundary crossing learning mechanism. It can also be said that the most boundary crossing learning occurred when students cross between the Academic and Personal elements of their ecosystems. The next chapter aims to compare these findings against an existing body of literature in order to make evidence-based recommendations.

## **CHAPTER 5: DISCUSSION**

### **5.1 Introduction**

This chapter aims to interpret and discuss significant findings of the study as they relate to its purpose of exploring distance student's ecosystems of learning support, and how social media enhances boundary crossing within these ecosystems. The findings of this study are consistent with what is already known in the literature as discussed in chapter two around the increased use of social media for teaching and learning and how students value social learning.

### **5.2 Anticipated and experienced challenges in distance learning support**

Distance learning programmes are rapidly being regarded as one of the most practical ways that universities across the world are adopting in order to increase access to university education. However, as any educational context, this has challenges for both the institutions offering and the students undertaking these programmes. This study highlighted several challenges that are experienced by distance learning-students adding to the existing body of literature around this topic. What this study found was that most students are introduced to distance education at postgraduate level. Which speaks to the need for additional support at the beginning of the distance programmes to help students transition better.

In addition to transitional support, the findings revealed data costs, access to technology and lack of digital skills (navigating the LMS – iKamva and UWC online library) as less of an issue to the participants even though literature looking into the African context

speaks otherwise. These findings are contradictory to findings of Malecela (2016) and Khalil Omar *et al* (2017) who find that in their studies - also conducted in the African higher education sector - students struggle with access to technology and with insufficient digital literacy skills. One could argue that the findings are unique because of the student profile under study. The participants are working health professionals which means they have some income and one could also assume they have some of internet access in their workplaces to a certain extent, making internet access and technology less of a challenge for them as opposed to full time undergraduate students. Moreover, high on the list of anticipated challenges was establishing a learning routine, balancing different responsibilities, and time management when they started the programme. This confirms the importance of taking context into consideration when designing a course and support system, especially when engaging with distance students.

Which brings us to the next important set of results which showed us the tools which students mostly relied on to support their learning and whether these tools change as the programme progresses. The study revealed that students are mostly worried about managing their time and being able to balance their multiple responsibilities when starting the PGD program. Data also revealed that these challenges are not only anticipated but they are experienced when the students start the program as most of the interviewed participants highlighted. The burden of being an adult student comes with multiple psychological factors, and being a working adult student is even more challenging. However, this is not unique to this study population, as Musingafi *et al* (2015) and Kumar and Ramalu (2015) found the same results when they conducted

studies looking into open distance learning (ODL) students' experiences in universities based in developing countries. This also highlights the realities of developing countries where citizens are having to work and study for professional/personal development as a result of capacity building, resulting in people having to juggle multiple responsibilities (learn and earn phenomenon). Importantly, this speaks to the lack of or insufficient support distance-learning students possibly received from their employers, colleagues and family members. Pozdnyakova & Pozdnyakov (2017) suggest flexible learning opportunities to accommodate adults allowing them to study at their own pace and place. This approach might come at a cost to students as programmes might take longer to complete. Also, students would be unable to finish within the university's time duration for the programmes. This may not necessarily work for distance programmes such as the PGD were students are given a duration in which they should finish their studies (taking away some flexibility). Authors such as Gachago *et al* (2018) looked critically at practical ways how flexible learning can be supported without elongating the duration of the programme. However, institutions can still make the programmes semi-structured to allow flexibility and ease anxiety on the students.

Interestingly access to technology (including data costs) was not deemed to be much of a challenge. One can assume that with the study population being professional working students in the middle to high -income tax brackets means that they can afford access to technology. However, if this study was done in a different population, the results could be different as studies show that access to technology continues to be a hindering factor in distance education in developing countries (Ng'ambi *et al.*, 2016; Cloete, 2017; Padayachee, 2017). Despite the Distance Education White Paper (2014) projecting

increased access to technology and reliable bandwidth at low cost for students and staff, this raises practicality questions for students who study at a distance, most especially those from foreign countries. The following section delves into the ecosystem of support tools and explores students' experience of using them to support their learning.

### **5.3 Tools forming ecosystems of learning support and perceived benefits**

This study examines the support strategies employed at SoPH holistically with emphasis on social media (WhatsApp). Generally, positive feedback around the current support strategies with certain tools deemed more effective than other tools for a variety of reasons. Results showed that the participants perceived the SoPH programme handbook, email communication and WhatsApp groups as the most effective support tools. From the mention of these tools, one can deduce that students find relevant information packages and communication and interaction (be it formal or informal, with peers or convenors) instrumental. The programme handbook is not only an information package but provides orientation to the programme which is beneficial for students who cannot afford to come for face-to-face orientation sessions (Summer school). For communication tools to be useful, they needed to be easily accessible with timely feedback and cost-effective. This explains why telephone communication was ranked one of the least useful tools even though it is a communication tool..

The use of tools was expected to be different between the first semester (beginning of February) and the beginning of the second semester (beginning of August). Literature shows that students may need more support as they start the programme (Gachago *et al*,

2018), while less support or different support might be needed as they gain independence, especially if they are doing distance learning for the first time and at a postgraduate level. However, this was not the case in this study as it found there was no significant change in tool usage across the two academic terms. The tool usage changed slightly over the two semesters but not significantly as expected. The data showed a heavy reliance on tools such as the programme handbook, WhatsApp and email in the first semester. This speaks to the lifespan of support needed for distance learners. As these are communication and guidance tools, this can be interpreted that emphasis needs to be placed upon providing students with sufficient guidance or orientation tools in collaboration with timely communication at the beginning of the programme.

Potential challenges of integrating social media as a formal tool included the possibility of students being overwhelmed by the influx of messages coming in and the fact that most workplaces do not allow access to social media during working hours (this also speaks to the need for the legitimisation of social media in both the workplace and universities) reported in table 14 . However, participants do recommend possible solutions to their reservation, these included establishing appropriate times for social media interactions. It can be challenging to establish times that will suit everyone, because student community is highly diverse.

#### **5.4 Boundary crossing and learning mechanisms**

WhatsApp was ranked the third most useful tool in the ecosystem of support, this reflects the value of peer support and the sense of belonging or community when studying at a

distance. Ithindi (2014) in a study she conducted found that when students used social media tools such as WhatsApp it blurred the division between informal and formal learning. This is also apparent in this study where WhatsApp narrowed the gap between learning that takes place outside of traditional learning spaces and the learning that takes place in class or on institutional learning platforms (such as iKamva). Using the boundary-crossing framework provided an opportunity to demonstrate how boundaries can convey learning potential in a range of transformative learning instances where students are observed as active agents in shaping their learning goals. The use of WhatsApp and other resources (such as Facebook and LinkedIn) to support their learning are seen as an act of agency of professional adult students that are strategically re-identifying themselves, establishing and maintaining relationships using cultural tools and resources (Jiang & Edirisingha, 2018). For example, students used mixed pedagogical strategies such as iKamva (programme handbook, and discussion forums) which are formal and structured learning material, and other online learning opportunities (UWC online library) to lessen the stress of initial entry into a new and unfamiliar academic context. However, they also use different, informal tools to foster a sense of community and communication connection both with convenors, administrators and students from other cultural backgrounds. This shows that learning is a result of adaptation through the use of a combination of tools (formal and informal). This makes it essential to study a student's learning support ecosystem holistically to understand the gaps in existing support strategies and how social media (WhatsApp) bridges or compliments for effective learning and smooth boundary crossing to occur. The following three boundary mechanisms of learning were observed in the study as follow

- Identification

Instances of this learning mechanisms are evident when students crossed formal/informal learning contexts and hierarchical boundaries. This could be contributed to the fact that identification takes place when students interpret a particular practice in the light of another, highlighting differences and similarities (Akkerman & Bakker, 2011). In turn, it leads to the underlying need to a renewed understanding of different practices and the reconstruction of identities to overcome discontinuities. As observed in the presented data, the participants were consistently comparing their experience of using the formal support tools in relation to social media (in this case WhatsApp). For example, email was offered to the students as the main tool for communication, while discussion forums were meant to create a space for collaborative learning. However, data revealed that students started using email communication in the first semester and dropped it in the second semester with WhatsApp remaining constant and gaining traction over emails in the second semester. This can be attributed to the fact that these formal tools are mostly structured and asynchronous which takes away flexibility and delays feedback or response to queries. Over the two semesters students got a chance to compare these practices, noting the disadvantages and advantages of each and ultimately reconstructing their own practices for continued learning.

- Coordination

This proved to be the most prominent learning mechanism from both the data collected through the survey and transcripts. Many of students' comments centered on the



coordination of administrative issues, emphasizing the identification of effective ways to establish and improve connection and cooperation in order to “survive” the programme, which meant completing the programme in time. Nearly all participants provided information that shed light on their process of sense making of this new learning experience - as presented under the theme community building and group dynamics. These findings are in line with Khalil Omar *et al* (2017) who found that WhatsApp was a tool that helped balance different responsibilities. An interesting instance of this boundary learning mechanism was when students move in between the discussion forum and WhatsApp - blurring formal and informal learning spaces boundaries. In the one instance where there was a group work activity, WhatsApp was used not only for distribution of work and collaboration but also as a tool to cross temporal and geographic boundaries. Lerato reporting that they referred to the WhatsApp to do the collaborative assignment even though they started out with email. The benefits of overcoming temporal and geographic boundaries are emphasized as students felt a sense of connectedness, which contributed positively to their motivation because of the increased immediacy of smooth coordination. These findings are also in line with Willemse (2015) and Jiang & Edirisingha (2018). It could be seen as the convergence of social media which allowed students the opportunity for seamless and just-in-time learning opportunities to support information sharing and collective contribution.

- Transformation

The findings revealed elements of “Transformation”, with students expanding their understanding and recognition of the usefulness of familiar tools across different

contexts, such like adding social media to their personal learning network. However, integrating tools and using them purposively was dependent on the context and needs, which in this study was interpreted to be the need to cross temporal, geographic, formal, informal and other boundaries such as the hierarchy boundaries. Participants responses also confirmed that they do not merely transfer one practice to the other, instead expanded their knowledge and combined formal with informal tools into one ecosystem of support. For example, by crossing hierarchical boundaries, the practice of student support transformed. From the traditional practice of the academic staff being the main source of teaching/ support (teacher –student), to student - student and ultimately student – student – teacher. This study illustrated that student are increasingly using social media to get support from one another and only contacting university staff as a last resort. The next level of this learning mechanism would be the establishment of an in-between practice which in this case is where there is a WhatsApp group with both students and staff and different academic matters are discussed/resolved. There was no evidence of this. However, when asked about this kind of a group participants showed interest, see quote from Michael below

*“I would really support the idea as I hinted earlier for some people WhatsApp is more readily accessible so it’s a bit easier for some people and then depending on the gadgets like when you go into the field work with WhatsApp almost anywhere anytime you can access it but in terms of email and iKamva it might not always be possible ... so having administrators, convenors and so on, like having a very formal can really compliment all the nice tools that we have ... I would be a strong advocate of having WhatsApp as a formal learning tool involving the administrators and convenors.*

While this has not happened, it formed the basis of the recommendations. Another case of the in-between practice could potentially be a sub-group formed for collaboration of

students on projects outside of SoPH. There is also no evidence of this. But might come up in a follow-up/ longitudinal study.

## **5.5 Conclusion**

This chapter aimed to present and discuss data collected from three research instruments; online survey, in-depth interviews and focus group discussion. The data was transcribed, presented in a simplified way and was then coded in the previous chapter. The description of each of the presented findings was presented explaining the finding in light of the research question. This chapter was particularly focused at giving the findings significance by providing meaning and linking it to existing literature. This chapter illustrated how the data and interpretations made in this study is in line with the existing body of research around social media and student support. Here incidences of observed boundary crossing are discussed in relation to what other researchers found in different learning context. While qualitative research does not aim to generalise but an understanding of how social media assist working postgraduate students in coordinating their studies is emphasised.

The following chapter aims to provide critical but practical recommendations on how institutes of higher learning can better exploit the use of social media for improved support strategies. The following chapter also highlights future studies. Lastly, the chapter closes off with describing some of the study limitation and how they could have jeopardised the quality of the data collected and analysed. Noting challenges of collecting data with geographically dispersed participants.

## CHAPTER 6: CONCLUSION AND RECOMMENDATIONS

### 6.1 Conclusion

In this chapter, a review of the findings in relation to the research questions underpinning this study is presented. The research conducted sheds light into the increasingly experienced phenomena of the integrated use of formal and informal tools such as social media to support learning of postgraduate students. The study also provides further insight into aspects of achieving successful boundary crossing using social media as a boundary crossing object.

#### 6.1.1 Review of research questions

1. What formal and informal learning support tools make up students' learning support ecosystem?

The study found that students' ecosystems of learning support consisted of both formal and informal tools: formal tools used were the UWC online library, discussion forums on iKamva and the SoPH programme handbook. WhatsApp was the predominant informal tool while support from colleagues and fellow peers was also perceived to be a benefit. The frequency of tool usage showed that the informal tool the student used mostly was WhatsApp to support their learning (see [section 4.3.1](#) table 10 and figure 4). In addition to the frequency of tool usage, findings revealed that the lifecycle of the tools varied depending on the need. A significant decrease in the usage of formal tools in the second semester was reported while the usage of WhatsApp remained the same across the semesters.

### 1.1 How do students perceive the support they get from these tools

Although the question was open to all tools, the research had a particular interest in social media and how it complemented other tools within students ecosystems of learning support, and in particular how social media facilitated boundary crossing within ecosystems of learning support. A range of themes emerged which spoke to students' perceived benefits of social media. Some students had not used social media but acknowledged potential benefits, other students had used social media and perceived no benefits. The biggest theme was around students who had used social media and had perceived a varied range of benefits, with peer support and community building as the largest subthemes.

### 2. Which boundaries do students cross when using these tools and how does social media (such as WhatsApp) facilitate the crossing of these boundaries?

After exploring students' perceptions and actual usage of the identified tools, boundaries which students cross when they use these tools were identified. Social media such as WhatsApp was noted to be a valuable tool in crossing a range of boundaries - between formal and informal learning contexts, different hierarchies, and across temporal, geographic boundaries. In [section 4.4](#) interesting instances of how students used WhatsApp to cross the above mentioned boundaries are described.

### 3. What learning mechanisms takes place when students cross these boundaries?

Using Akkerman and Bakker's boundary-crossing framework, all learning mechanisms

were identified with coordination being the dominant learning mechanism. Interestingly, an element of transformation was also identified which is the highest level of learning according to Akkerman and Bakker. Transformation was achieved with the students redefining learning support tools and how they go about seeking support for their learning. Ultimately, this study has shed light on two important things; one being that students perceived their tools as one integrated ecosystem of learning support rather than distinguishing between formal and informal tools as they use the tools seemingly interchangeably. The second, and equally important finding, was that students do not perceive social media, such as WhatsApp as 'real' learning tool, although they have found it to be a useful learning support.

The study aimed to explore students' perceptions of social media as part of their support ecosystems and how social media allows boundary crossing within these ecosystems. Social media (WhatsApp) has proved to be a useful and boundary crossing tool to cross boundaries in various ways. Boundary that were found to have been crossed included formal and informal learning contexts, hierarchical, temporal, geographic within the ecosystems of support, allowing for boundary mechanisms of learning to occur (some more dominant than others). Of note was the transformation of student support practice. In most cases, tutors and convenors act as the designer and initiators in the use of social media for learning. As an example, in the study conducted by Gachago *et al* (2015), module convenors report to have initiated WhatsApp groups to support the diverse needs of their students. This study whoever shows evidence of student agency, where students take the initiative of finding effective gap-bridging support strategies within their

ecosystems of learning support.

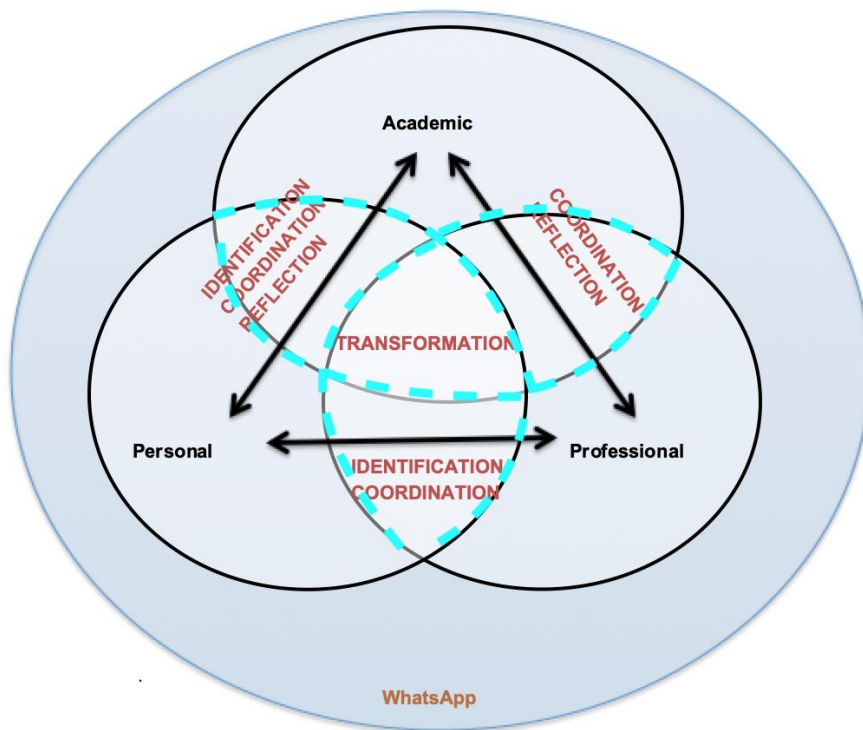
Evidence showed that students are well aware of their learning needs and they are proactive in finding ways to accommodate these needs. Students manifest this by appropriating tools used in their social lives, referred to as informal tools (in this case social media), into their existing structures in an attempt to make sense of the contextual realities and changing academic needs.

However, as a tool, WhatsApp does not entirely overshadow other technologies that might afford better opportunities for support such as building and improving the sense of community and motivation amongst distance students. Thus, this study emphasizes institutions to expose students to a range of affordable technologies with the intent to narrow the gap between formal and informal learning. By doing so, institutions would be acknowledging that all students, including mature students, are social beings and they value social learning as they are seen to be introducing social media into their learning ecosystems of support. The emphasis on mature students are the complexities they encounter as students, as highlighted in table 9 of this report.

It should be recognised that this research does not necessarily imply that social media as a stand-alone tool can facilitate interaction, collaboration and improve cognition. This study highlights the complementary nature of both formal and informal tools regarding cognitive development, not saying that students who rely purely on formal teaching and learning methods do not develop as well as those who are exposed to social media. With this said, the next section highlights areas of improvement for institutions with recommendations for future research.

## 6.2 Theoretical implications

Boundary crossing as a lens has proved to be useful lens for understanding how students negotiate and appropriate their ecosystem of learning support. Boundary crossing has been useful in understanding how WhatsApp allow students to connect/draw on their academics, professional and personal beings. However, for one to gain this understanding, there is a need to interrogate how elements of these ecosystems of learning support come together. For this, Barron's ecosystem of learning support has been a particularly useful lens for better understanding the dynamics of distance student support. The findings of this study have revealed that WhatsApp allows the different elements of typical ecosystems of learning support (see figure 1) to overlap allow for smoother boundary crossing. Not only does WhatsApp allow for these elements to overlap, the study finds that when these elements overlap that boundary mechanisms of learning are enhanced (see figure 8 below).





### **Figure 8: Distance students' ecosystem of learning support context**

For institutions, it is worth noting that ecosystems are systems consisting of not only of tools but also people, content, culture, and strategy. These exist both within and outside of an institution, all of which has an impact on both the formal and informal learning that takes place in that institution. As shown above in figure 8 a typical ecosystem has many intersecting elements, structures, and the dynamic relationships within them and with these comes different forms of learning mechanisms. Institutions have the potential to nurture these ecosystems for effective support strategies as emphasized in the sections above. This can be achieved by an awareness of the ever changing student needs, which include the internal and external forces that shape students' ecosystems of learning support . However, figure 8 provides a lens to better investigate ecosystems of learning support in a holistic manner, highlighting where potential learning can occur. This helps education practitioners and researcher to investigate or intentionally mediate the learning in similar learning context.

### **6.3 Practical implications**

The overall research shows that social media are increasingly being used as tools for developing formal and informal learning spaces or experiences that start out as an individual learning platform. This means that social media platforms such as WhatsApp, enable not only a range of boundary crossing mechanisms but also the individual knowledge coordination and transformation in specific learning contexts. These platforms ultimately evolve into a learning ecosystem where knowledge is socially mediated. For working professionals, these learning ecosystems as shown in this study

are of great benefit in alleviating the challenges of studying at a distance. For working students, tools that allow crossing of various boundaries accommodate the range of their learning needs that comes with being a working student. With benefits such as improved connectedness and timely feedback being the mostly appreciated benefits.

#### **6.4 Study limitations**

By employing a qualitative research approach, this study was not aimed at generalising. However, it aimed to gaining meaningful insights into the experienced phenomena. Therefore, the findings of this study provide more in-depth understanding of students' perceptions and actual use of social media as an element of their ecosystem of learning support. However, the researcher observed numerous challenges during data collection.

The first limitation was the small size of the study sample which may not have captured the full diversity of potential students during the second and third phases of the study. The second limitation was that the sample size did not reach data saturation as envisaged with qualitative research due to the nature of the mini-thesis, which is a small study that is not as comprehensive as a full thesis, meaning other possible themes may have been missed. However, given the literature supporting the study, it provides a significant basis on which to make recommendations. Lastly, the researcher may have missed other tools that support students learning which are offered by the university (formal) such as the module guide and reader. However, these are found on the university LMS iKamva, so when students alluded to iKamva, it can be assumed that they are referring to these learning resources as well. It would have been interesting for the students to draw out their ecosystems of learning support themselves but because of the time constraints and the nature of the participants (being time poor), this did not work out as was planned. The

researcher ended up using the online survey for students to rank the usefulness of the tools, however this is a limitation worth noting.

## **6.5 Recommendations**

This study recommends institutions to encourage, legitimise and expose students to social media not just for traditional social purposes but also for academic purposes. Opportunities should thus be created for students to interact with other students and the academic community at large in the quest for learning support. Convenors and student administrators are advised to not only be limited to formal tools (email and LMS) which they are comfortable with but should try innovative ways to exploit social media to support students. Ideally, people who champion this initiative should be staff who are already using the platform (WhatsApp) . This in return means that institutions or head of departments should provide staff with training on social media and to ensure that staff workload allocations incorporate social media student support (i.e. developing activities that foster social learning/collaboration, or module content consultation). It is also important to take into account the challenges highlighted in the findings chapter, around the influx of messages and negative impact on study time. Institutional guidelines or policies need to be developed to cover the acceptable use of social media and to declare the institutions' standpoint. These guidelines or policies need to be updated frequently in response to the rapidly changing environment of social media. Lastly, the students need to be provided with the same technical support and training on informal tools that they get for using formal tools such as the LMS. This will ensure that students get basic orientation so they can use the tools with ease for sufficient support. Most importantly,

academic teams need to be aware of the frequently changing nature of student support and how support strategies need to be context specific.

## **6.6 Further work**

Further studies can be conducted on longer term effectiveness of using social media to transform student support strategies amongst geographically dispersed postgraduate students. These studies should put emphasis on tracking how the learning transitions within these ecosystems of learning support. Importantly these studies need to be intentional and pedagogical sound in transitioning students and assisting them move across the learning mechanisms of boundary crossing within the investigated ecosystems of support. Results of such studies would shine the light for higher education faculties on the extent social media can be used as an effective pedagogical and educational tool to support learning at distance. These studies will contribute and put emphasis on the argument of legitimising social media as learning tools in higher education. Finally, and equally important, understanding why boundary learning mechanisms such as the ones highlighted in this study is good for decisions making and how students negotiate and evolve their learning ecosystems in response to their complex and frequently changing needs as working professionals.

## **6.7 Final word**

Finally, this study provided hopeful pointers at investigating both formal and informal tools to support students in a context-sensitive way. This study has proved that a holistic understanding of the students' ecosystems of learning support is essential in examining gaps in learning support. Looking at how formal and informal tools complement each

other in relation to learning support. Through participants experiences an illustration of how social media tools such as WhatsApp allows the blurring and ultimately crossing of a number of boundaries is provided. In this case, WhatsApp as a boundary crossing tool allows students to predominantly coordinate the flow of their learning.

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# Appendix A

## Permission to conduct research at UWC



03 August 2018

### RE: REQUEST FOR PERMISSION TO CONDUCT RESEARCH AT THE UNIVERSITY OF THE WESTERN CAPE

Name of Researcher	: Ziyanda Mwanda
Research Topic	: Distance learning students' perceptions of social-media enhanced boundary crossing in their ecosystem of support
Date of issue	: 03/08/2018
Reference number	: UWCRP030818ZM

This serves as acknowledgement that you have obtained and presented the necessary ethical clearance and your institutional permission required to proceed with the above referenced project.

Approval is granted for you to conduct research at the University of the Western Cape for the period 30 July 2018 to 30 July 2019. You are required to engage this office in advance if there is a need to continue with research outside of the stipulated period. The manner in which you conduct your research must be guided by the conditions set out in the annexed agreement: *Conditions to guide research conducted at the University of the Western Cape.*

The University of the Western Cape promotes the generation of new knowledge and supports new research. It also has a responsibility to be sensitive to the rights of the students and staff on campus. This office will require of you to respect the rights of students and staff who do not wish to participate in interviews and/or surveys.

It is also incumbent on you to first furnish this office with a copy of the proposed publication should you wish to reference the University's name, spaces, identity, etc. prior to public dissemination.

Please be at liberty to contact this office should you require any assistance to conduct your research or specifically require access to either staff or student contact information.

Yours sincerely

Signature Removed

DR AHMED SHAIKJEE  
DEPUTY REGISTRAR: ACADEMIC ADMINISTRATION  
OFFICE OF THE REGISTRAR

## **Appendix B**

### **INFORMATION SHEET**

#### **Project Title:**

Distance learning students' perceptions of social-media enhanced boundary crossing in their ecosystem of support

#### **What is this study about?**

This is a research project being conducted by Ziyanda Mwanda, a student at the University of Cape Town, South Africa. I am inviting you to participate in this research project by completing the online survey and participating in an in-depth interview. I would like to understand how you perceive the tools that forms part of your support learning ecosystem as a distance student. Also exploring the extent to which social media enhances boundary crossing within the support ecosystem.

#### **What will I be asked to do if I agree to participate?**

You will be asked to complete an anonymous online survey that will take you approximately 15 minutes and an in-depth interview. The online survey will have about 10 – 15 questions asking you to respond anonymously as an individual. For the in-depth the researcher will have a set of questions she would like you as the participant to discuss to gain deeper insight. The discussion will be audio recorded using the audio recorder. At the same time, the researcher will be taking down notes in her notebook

#### **Would my participation in this study be kept confidential?**

I undertakes to protect your identity and the nature of your contribution. To ensure your anonymity, a pseudonym will be used and only the researcher will be aware of your true identity. To ensure your confidentiality, only I (the researcher) will have access to the collected data. The collected data will be stored in locked filing cabinet and transcribed notes typed and kept in a password-protected computer file only known by the researcher. When I write a report or an article about this research project, your identity will be



protected.

### **What are the risks of this research?**

All human interactions and talking about self, experiences or others carry some amount of risks. I will nevertheless minimise such risks and act promptly to assist you if you experience any discomfort, psychological or otherwise during the process of your participation in this study. Where necessary, an appropriate referral will be made to a suitable professional for further assistance or intervention.

### **What are the benefits of this research?**

This research is not designed to help you personally, but the results may help the researcher explore the understanding, experiences and perceptions of the different tools used by distance learners to support their learning, with a particular focus on social media (WhatsApp groups). I hope that, in the future, current and future postgraduate diploma in Public Health students might benefit from this study through improved support systems. This would help to add onto the body of knowledge with regards to effective and sustainable support mechanisms for distance learners in the African context.

### **Do I have to be in this research and may I stop participating at any time?**

Your participation in this research is voluntary. You may choose not to take part at all. If you decide to participate in this research, you may stop participating at any time. If you decide not to participate in this study or if you stop participating at any time, you will not be penalized or lose any benefits to which you otherwise qualify for.

### **What if I have questions?**

This research is conducted by Ziyanda Mwanda, who is a student at the **School of Education** at the University of Cape Town. If you have any questions about the research study itself, please contact Ziyanda Mwanda at: +2782 3489 837 and [amwanda@uwc.ac.za](mailto:amwanda@uwc.ac.za)

Should you have any questions regarding this study and your rights as a research participant or if you wish to report any problems you have experienced related to the

study, please contact:

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E-learning coordinator

School of Public Health, University of the Western Cape

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## Appendix C

### INTERVIEW CONSENT FORM

**Title of Research Project:** Distance learning students' perceptions of social-media enhanced boundary crossing in their ecosystem of support

The study has been described to me in language that I understand. My questions about the study have been answered. I understand what my participation will involve and I agree to participate of my own choice and free will. I understand that my identity will not be disclosed to anyone. I understand that I may withdraw from the study at any time without giving a reason and without fear of negative consequences or loss of benefits.

Participant's name.....

Participant's signature.....

Date.....

## Appendix D

### Semi-structured interview guide

Introduce self and explain the study briefly. Then ask Participant to introduce themselves covering the following; Country of residence, Job title and main responsibilities, and year of enrolment (1<sup>st</sup> or 2<sup>nd</sup> year)

1. If you could think back to when you started the programme, which three tools did you feel supported your learning and why?

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2. Do you feel that your usage of tools has now changed or remained the same? How and why?

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3. Did you feel comfortable and confident in drawing support from other tools besides the ones that were introduced by SoPH?

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4. What do you think of the use of social media as postgraduate distance student?

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5. Do you have social media accounts?

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6. If yes, How many social media accounts they have and how are they different from each other (Academic programme WhatsApp group or Facebook page, family and or professional/ work social media accounts)

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7. What did you feel worked well when using the social media for academic support?

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8. Do you recall any challenges (cultural, religious and ethical issues) you encountered when interacting on the platforms

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9. Were there any conflicting incidents and how were they resolved?

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10. Where relationships formed and developed beyond the academic context  
(collaboration beyond the PGD programme context)?

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11. How do you feel the use of social-media can be improved for better support?

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12. Should social media be integrated as a formal support tool – and how do you  
suggest it be used?

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## Appendix E

### Focus group discussion interview guide

Create WhatsApp group, with consent from participants, add participants to the group. Communicate upfront the rules of engagement. Explain how the interview will be conducted, including expected participation. Then ask Participant to introduce themselves covering the following; Country of residence, Job title and main responsibilities, and year of enrolment (1<sup>st</sup> or 2<sup>nd</sup> year) for the participants to get a sense of the group members (study participants). Only three main questions to be explored with necessary probing around common understanding and shared experiences of formal and informal learning and social media. Lastly, explore participation levels in relation to participants professional positions

1. How we understand the term learning. What is learning? and how do we think it takes place?

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2. Reflect on instances where we learnt informally (in relations to the PGD course) and how this contributed to our formal learning.

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3. Lastly reflect on how being an experienced professional in our workplace and a student at the same time, has influenced your confidence when participating in discussion forums or the PGD WhatsApp group?