

**The Outcomes and Impact of a Postgraduate Physiotherapy Master's Programme on  
Research and Clinical Practice in Africa**

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## **ABSTRACT**

The past decade has seen a growth in Physiotherapy schools offering postgraduate programmes in South Africa. The Republic of South Africa assists other African countries like Kenya, Malawi, Rwanda, Tanzania and Zambia in upgrading the education of diploma-trained physiotherapists (DTPs) to Bachelor of Science (Honours) (BSc (Hons) and Master's Degrees respectively. The three institutions offering Physiotherapy training in Cape Town make it the largest training locality for Physiotherapy in South Africa. The University of Cape Town (UCT), University of the Western Cape (UWC) and Stellenbosch University are situated within a twenty kilometre radius from each other. These schools have taken a leading role in the postgraduate training of their own PTs, and those from other developing countries. In 2007, for example, about 20% of postgraduate students in Cape Town Physiotherapy schools were from other African countries. The Department of Physiotherapy at UWC in particular has been upgrading DTPs from other African countries to BSc (Hons) and Master's degrees for the last twenty years. However, compared to the wealth of educational literature on other healthcare professions, literature on the evaluation of postgraduate Physiotherapy programmes is scarce. Thus, the aim of this study was to evaluate the outcomes and impact of the UWC postgraduate Physiotherapy BSc (Hons) and Master's programme on clinical practice and research in East and Southern Africa.

The dissertation used an explorative and descriptive theory-based evaluation approach using qualitative research methodology. The steps involved in the research process determined the choice and use of the qualitative methodology. The use of qualitative methods was undertaken to provide a comprehensive analysis of the research problem.

The study had three main phases. Initially, administrative document reviews and in-depth interviews with UWC postgraduate Master's programme designers (PDs) were conducted to help develop and test the programme theory and measuring instruments (interview guides). Secondly, postgraduates were interviewed to establish and test the implementation process theory, as well as investigate perceived programme outcomes. Then focus group discussions with postgraduate

students of UWC, and individual interviews with workplace supervisors of the UWC postgraduates were undertaken to investigate the perceived outcomes and impact of the UWC Master's programme. A variety of methods appropriate for the different steps or stages of the programme were employed, to ensure this evaluation exercise becomes an integrated function in which data are continuously collected and used for decision-making and programme improvement. Multiple types of data were collected to inform each phase.

The researcher used purposive sampling technique to constitute the sample. The sampling technique yielded three official documents, three (3) PDs and two (2) implementers, 27 UWC postgraduates, seven (7) workplace supervisors and 30 students of UWC postgraduates. Data was collected via document analyses, in-depth interviews, telephonic in-depth interviews and focus group discussions. Qualitative data analysis occurred concurrently with data collection. Atlas Ti software version 10 was used to assist with data management.

The UWC postgraduates reported acquiring knowledge of manual therapy, better management of musculo-skeletal conditions and enhanced clinical reasoning. Participants also reported career growth, pursuit of higher degrees such as PhDs, promotions, job changes from physiotherapy clinicians to educators, involvement in research and the introduction of BSc programmes in their respective countries. The current study demonstrates that the primary objective of the UWC BSc (Hons) and Master's programmes such as increasing access to physiotherapy training in Africa and empowering DTPs with research skills and knowledge of community-based rehabilitation was being realised. However, many postgraduate participants in all countries emphasised the need to include basic sciences, clinical practice and specialisation in the UWC BSc (Hons) and Master's programmes respectively. Furthermore, the participants reported that the programmes did not have much impact on management of conditions other than musculo-skeletal.

On the other hand, the employers that participated in the current study identified that the UWC programmes had a positive impact on Physiotherapy education in their respective countries, producing a total of five Physiotherapy degree programmes between the year 2000 and 2014. Kenya, Rwanda, Tanzania and Zambia reported introducing two, one, one and two BSc Physiotherapy programmes respectively. The study also revealed moderate research activity

among UWC postgraduates, a challenge most employers attributed to institutional research agendas, high patient work-load and personal strengths of postgraduate students.

The students of UWC graduates who participated in the current study reported acquiring new assessment skills for musculo-skeletal conditions, enhanced treatment techniques for musculo-skeletal conditions and use of evidence to guide their clinical practice. The participants also reported reduced hospital visits among patients with musculo-skeletal conditions and relatively short treatment durations. However, in all universities but one, students indicated that most lecturers had difficulty applying basic sciences during lectures. The participants also reported a lack of specialist lecturers in areas other than musculo-skeletal.

This thesis focused on evaluation of the outcomes and impact of postgraduate BSc (Hons) and Master's programmes in Physiotherapy for DTPs in SADC and East Africa. While the thesis has highlighted many achievements, it has also identified training needs of DTPs that require attention. First, we recommend that the curriculum be reviewed to incorporate clinical practice and more theoretical content in the BSc (Hons) programme and that the UWC special BSc (Hons) programme be considered an RPL project to ensure the visible (documented) and non-visible (undocumented) knowledge claimed by applicants are subjected to a form of assessment through the UWC RPL process, thus enabling the university to identify the knowledge gap that requires bridging among DTPs seeking admission to the degree programme. Second, we recommend a review of the Master's degree by coursework programme to include more theoretical and clinical practice components that would allow for specialisation.

## **Keywords**

Physiotherapy education

Postgraduate Masters

Context evaluation

Input evaluation

Process evaluation

Product evaluation

Programme outcomes

Programme impact

Clinical practice

Research



**Declaration**

I declare that “*The Outcomes and Impact of a Postgraduate Physiotherapy Master’s Programme on Research and Clinical Practice in Africa*” is my own work, that it has not been submitted for any degree or examination in any other university, and that all the sources I have used or quoted have been indicated and acknowledged by complete references.

Name: ..... Date: .....

Signed: .....



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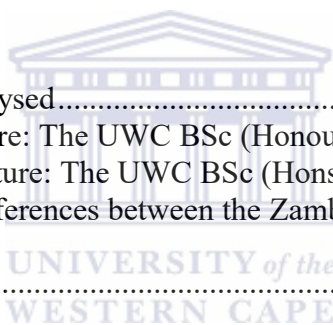
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## LIST OF ABBREVIATIONS

<b>BSc (Hons)</b>	Bachelor of Science (Honours)
<b>PhD</b>	Doctor of Philosophy
<b>UWC</b>	University of the Western Cape
<b>UNZA</b>	University of Zambia
<b>UCT</b>	University of Cape Town
<b>KCMC</b>	Kilimanjaro Christian Medical College
<b>KMTC</b>	Kenya Medical Training College
<b>EHC</b>	Evelyn Hone College
<b>JKUAT</b>	Jomo Kenyatta University of Technology and Agriculture
<b>HEIs</b>	Higher Education Institutions
<b>PDs</b>	Programme Designers
<b>PTs</b>	Physiotherapists
<b>DPTs</b>	Diploma-Trained Physiotherapists
<b>ARI</b>	African Rehabilitation Institute
<b>UK</b>	United Kingdom
<b>EU</b>	European Union
<b>SADC</b>	Southern African Development Community
<b>WCPT</b>	World Confederation for Physical Therapists
<b>CBR</b>	Community-Based Rehabilitation
<b>OMT</b>	Orthopedic Manual Therapy
<b>CIPP</b>	Context, Input, Process and Product
<b>TBE</b>	Theory-Based Evaluation
<b>HE</b>	Higher Education
<b>PE</b>	Programme Evaluation

## CHAPTER ONE

### INTRODUCTION

Postgraduate education is important in terms of demand and supply, but more importantly, the quality of the programmes offered, as well as the returns for both the providers and the graduates concerned. Learning institutions have the responsibility to put in place relevant curricula informed by key stakeholders. The current landscape of postgraduate education is increasingly varied. These variations have been influenced by changes over the years within the Higher Education sector where supply must adapt to more diverse demands. On the one hand, research degrees continue to denote advanced study in a chosen discipline with a view to the pursuit of an academic career. On the other hand, there is a growing demand for Master's and Doctorates related to a specific field of professional activity to further enhance the profession. In this study, the researcher describes the social and economic context of the University the Western Cape (UWC) postgraduate BSc (Hons) and Master's programmes. Secondly, the learning experience of the UWC Physiotherapy Master's graduates is explored and then the perceptions of employers regarding the outcomes and impact of the UWC postgraduate Physiotherapy Master's programme are investigated. Further, perceptions of students of the UWC Master's graduates employed as lecturers, on the impact of the UWC Master's programme are explored. Finally, the researcher makes recommendations for the improvement of the Physiotherapy BSc (Hons) and Master's programme based on input from the UWC postgraduates, their employers and students of UWC postgraduates employed as lecturers. This chapter outlines the challenges of Physiotherapy education in Africa. In addition, a description of the UWC BSc (Hons) and Master's programmes, herein referred to as the UWC Master's programme is presented. In this case, the BSc (Hons) is the precursor degree for Masters thereby making it impossible to discuss the latter without the former. Finally, the problem statement, research questions, research aim, research objectives, significance of the study, theoretical framework, definition of terms and summary of chapters are presented.

## **1.1 BACKGROUND OF THE STUDY**

### **1.1.1 Challenges of Physiotherapy education in Africa**

Physiotherapy education in Africa is hampered by the limited number of qualified Physiotherapy educators (Crosbie, 2002; Frantz, 2007). Up until a decade ago, most African countries offering Physiotherapy training, with the exception of South Africa, Nigeria and Zimbabwe, had only three-year diploma programmes that did not meet the World Confederation for Physical Therapy (WCPT) training guidelines for four years of education. Even for the diploma programmes, smaller countries such as Malawi were still dependent on larger countries like Tanzania and Zambia for the training of therapists. A lack of training institutions, a lack of qualified teaching staff and minimal financial support for the training process has limited the development of Physiotherapy education in Africa and resulted in a shortage of Physiotherapists (PTs) in African countries to be able to meet the needs of the growing population (Frantz, 2007). Within South Africa, UWC instituted a postgraduate programme whose aim was to assist other African countries in upgrading the qualifications of African PTs from diploma to a BSc (Hons) degree, and thus allowing postgraduates access to Master's and ultimately PhD programmes.

South Africa offers Physiotherapy degree level education at eight (8) universities (Mostert-Wentzel, Frantz & Rooijen, 2013). The three institutions offering Physiotherapy training in Cape Town make it the largest training locality for Physiotherapy in South Africa (Louw, Grimmer-Somers, Crous, Marais & Amosun, 2007). The University of Cape Town, UWC and Stellenbosch University are situated within a twenty (20) kilometre radius from each other, with postgraduate courses largely available since the 1990s. With the coming of democracy in South Africa, also came a sense of hope for Africa and the world at large (Soudien, 2007) and the past two decades has seen a growth in Physiotherapy schools offering postgraduate programmes in other cities across South Africa (Louw et al., 2007). These schools have taken a leading role in the postgraduate training of their own PTs, and those from other developing countries.

In 2007 for example, about 20% of postgraduate students in Cape Town Physiotherapy schools were from other African countries (Louw, et al., 2007). By 2009, the Department of

Physiotherapy at UWC had successfully graduated eighty Master's and four PhD students from other African Countries (Frantz, Rhoda, Rowe, Phillips, Karachi, Mlenzana, Pharaoh, Steyl & Struthers, 2010). Among the three aforementioned universities offering Physiotherapy education in Cape Town, only UWC runs a conversion programme to accommodate Physiotherapists with diploma qualifications and allow them convert to BSc (Honours) degree before progressing to Master's and subsequently PhDs.

The University of the Western Cape draws students from other African countries such as Rwanda, Kenya, Malawi, Tanzania and Zambia (Louw et al., 2007). After a period of 19 years of assistance in training PTs at both BSc and postgraduate level, most of these beneficiary countries have also introduced BSc Degree programmes. In spite of this progress, these countries still have a limited number of training institutions and are thus dependent on institutions of higher education in South Africa to meet the needs of their populations and to upgrade the skills of Physiotherapy educators. Because worldwide university requirements now necessitate that newly appointed educators possess at least a Master's degree, there has been a steady increase in the number of PTs willing to undertake postgraduate training in Africa (Louw et al., 2007).

Compared to the wealth of educational literature on medical (Bloom, 2005; Ruiz, Mintzer & Leipzig, 2006; Mortensen, et al., 2010) and other healthcare professions (Hoffman et al., 2004; Hoskins, Pollard, Reggars, Vitiello & Bonello, 2006; Ellis et al., 2007), literature on evaluation of postgraduate Physiotherapy programmes is scarce. This dearth of educational literature must be addressed in order to advance knowledge about the impact of Physiotherapy education in Africa, given the substantive changes in Physiotherapy education, including the transition to Master's of Physiotherapy and now Doctor of Physiotherapy (Richter et al., 2008). The current study will address this gap by evaluating the perceived outcomes and impact of the UWC Physiotherapy BSc (Honours) and Master's programmes in the areas of clinical practice, research and Physiotherapy education in four African countries.

### 1.1.2 Programme description

A response to calls for reform in Physiotherapy education resulted in the formation of an innovative conversion programme in 1994, soon after South Africa gained its independence. Though there is no evidence of a formal partnership, the UWC committed itself to the cause of upgrading DTPs from other African countries. This resulted in the creation of Physiotherapy postgraduate programmes, which offer a one-year BSc (Hons) and one-year Master's degree concurrently, to African PTs with an internationally recognised diploma and a minimum of three years' clinical experience. This was in response to the findings of the African Rehabilitation Institute (ARI), following a study conducted in Africa prior to 1988. The study by the ARI identified two primary challenges: 1) lack of research methodology and community-based rehabilitation skills among DTPs, 2) under-development of the Physiotherapy profession, signaling the need for degree-level Physiotherapy training in Africa (African Rehabilitation Institute, 1993).

Thus, the central purpose of the UWC postgraduate programmes was to promote degree-level Physiotherapy education in other African countries, through empowering DTPs with credentials appropriate for university employment, for the purpose of initiating degree level Physiotherapy education in other African countries. This was done by first, upgrading diploma-holding physiotherapists to BSc (Honours) level and then to Masters Degree. The initiative was consistent with WCPT's position paper, on Education for Entry Level Physical Therapists, (WCPT, July 1997), (Frantz, 2007) which recommends that education should be based on university or university-level studies, of a minimum of four years of study, independently validated and accredited as being at a standard that awards graduates full status and international recognition. Consequently, since 1996, UWC has awarded DTPs from Kenya, Malawi, Rwanda, and Tanzania, Uganda and Zambia with BSc (Honours) and Master's degrees in Physiotherapy. However, to the best of this researcher's knowledge, there has not been a comprehensive evaluation of the postgraduate programmes to ascertain whether they are functioning as intended.



## 1.2 PROBLEM STATEMENT

Globalisation has had a significant impact on health care, on Physiotherapy as a profession and on Physiotherapy education (Broberg, 2003). The Bologna process, for example, which places special emphasis on the goal of life-long learning, has led to greater mobility across the EU, and for the Physiotherapy profession, increased cross-cultural exchange, enhanced clinical expertise and increased emphasis on research (Hager-Ross & Sundelin, 2007). Likewise, the universities of Africa have embraced the concept of internationalisation of higher education and of health care. Consequently, universities all over the world are now expected to adequately assess the impact of their training programmes (Singh, 2004). However, minimal documentation is available about the impact and outcomes of Physiotherapy postgraduate programmes in developed countries, and virtually none in Africa (Zwanikken, 2013). A recent systematic review conducted to evaluate the outcome and impact of Master's education on health and health care, including Physiotherapy, revealed a paucity of studies assessing the outcome and impact of health-related Master's degree programmes in low- and middle-income countries (Zwanikken, 2013). In this review, only one study in a low- or middle-income country (Vietnam) was found. Thus, the researcher argues that aside from the documentation of the number of foreign postgraduates that undergo training, and their immediate reaction to the experience, it would be important to ascertain the impact of Master's programmes, and most importantly how their institutions and countries are benefiting from the significant investments made in the postgraduate programmes. From these educational and practice realities, the following research questions were posed:

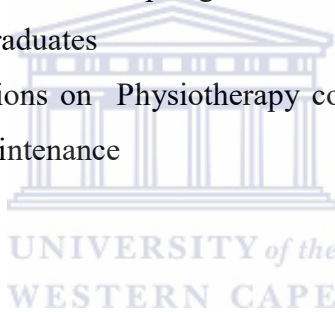
1. What is the context of the UWC postgraduate Physiotherapy Master's programme?
2. What are the postgraduates' perceptions of their UWC educational experience and how do they perceive the outcomes and impact of the programmes?
3. What are the postgraduates' workplace supervisors' perceptions of the outcomes and impact of the UWC postgraduate Master's programme?
4. How do students of the UWC postgraduates perceive the impact of the Master's programme on their education and clinical practice?

### **1.3 RESEARCH AIM**

The aim of this study was to evaluate the outcomes and impact of the UWC Physiotherapy Master's programme on clinical practice and research in East and Southern Africa

### **1.4 RESEARCH OBJECTIVES**

1. To describe the context of the UWC postgraduate Physiotherapy programmes (BSc Hons and Master's) by means of document analyses and interviews with key informants (curriculum designers and UWC lecturers).
2. To explore the postgraduates' perceptions of their educational experiences in the UWC Physiotherapy programmes
3. To explore perceived outcomes and impact of the UWC postgraduate programmes from the perspectives of UWC postgraduates, graduates' work supervisors and students of UWC postgraduates
4. To make recommendations on Physiotherapy conversion and Master's programme improvement and or maintenance



### **1.5 SIGNIFICANCE OF THE STUDY**

The results of this study will be of interest to institutions offering postgraduate Physiotherapy programmes in Africa, supervisors of postgraduate students and for the learning outcomes of the students themselves. The study is based on the assumption that, evaluation conducted several years after completion of a programme are important in ensuring the relevance of international postgraduate Physiotherapy programmes on the contemporary day-to-day work of physiotherapy clinicians and researchers in sending countries. In addition, feedback from graduates who have either resumed their positions in the field, or pursued further training will be useful in identifying positive aspects of the programme, as well as areas for further action and development by the programme management and individual teaching staff. Given the paucity of available research, this study will make a novel contribution to Physiotherapy education and the higher education sector in Africa.

## 1.6 THEORETICAL PERSPECTIVE

The theoretical perspective of a research project relates to the philosophical basis on which the research takes place, and highlights the underlying philosophical assumption about the researcher's view of the human world and the social life within that world. It also exposes the philosophical basis, nature and limits of human knowledge, otherwise known as the epistemology underpinning the research (Crotty, 1998). Considering the purpose of this study and the questions posed, it was deemed appropriate to encapsulate the study within the philosophy of social constructivism. The social constructivism perspective is typically seen as an approach to qualitative research (Creswell, 2014). According to this worldview:

“Truth or meaning comes into existence in and out of (one's) engagement with the realities in (one's) world. There is no meaning without a mind. Meaning is not discovered, but constructed. In this understanding of knowledge, it is clear that different people may construct meaning in different ways, even in relation to the same phenomenon. In this view of things, subject and object, emerge as partners in the generation of meaning” (Crotty, 1998).

The philosophical assumption underpinning the constructivism tradition is that the social world is without meaning prior to one's experience of it. According to this paradigm, the individual is not a passive recipient of a set of meaning, but an active, and reflective participant in the construction of meaning.

Against this background, the researcher focuses on gaining an understanding of the person's interpretation of reality based on social interaction and such research is characterised by a purpose to discover the interpretations of reality within a particular social/cultural contexts. The researcher interacts with those taking part in the study as participants. Approaching a problem from the constructivist epistemology entails the use of multiple methods and data sources (triangulation of methods and data sources) to support the strength of interpretations and conclusions or inferences (Crotty, 1998). Data gathered from multiple samples and through the use of a variety of methods helps to identify consistencies and variations that might be attributable to particular contexts and settings in which the research is conducted.

Within the philosophy of social constructivism, it was envisaged that the knowledge regarding outcomes and impact of the UWC Master's programme had to be co-constructed between the researcher and stakeholders of the UWC Master's programme, including programme designers, implementers, and postgraduates, workplace supervisors of the UWC postgraduates, and students of the UWC postgraduates. Prior to the evaluation exercise, the researcher had to have an understanding of the programme through interaction with programme documents, programme designers and implementers, thus constructing knowledge of the UWC programme through interaction with the said objects (documents) and people (programme designers and implementers). In the second phase of the study, the researcher interacted with UWC postgraduates to explore the postgraduates' perceptions of their educational experiences in the UWC Physiotherapy programme. It was the researcher's view that interacting with postgraduates was the best way of appreciating the UWC Master's programme. The postgraduates had had an experience with the programme under evaluation and therefore knowledge of the programme implementation could only be created through socialising with the postgraduates. To explore perceived outcomes and impact of the UWC postgraduate programme, in the third stage of the research project, the researcher interacted with the workplace supervisors of UWC postgraduates, and students of the UWC postgraduates from and operating in different countries and contexts. This researcher believes that knowledge is created by people in interaction with their environment, including external individuals. The researcher believes that multiple realities and truths regarding the UWC Master's programme exist, hence the involvement of key stakeholders and among them graduates and employers operating in different countries and institutions such as health facilities and universities, to evaluate the outcomes and impact of the programme from the perspectives of the participants and together generate knowledge.

Data collection methods included individual interviews, focus group discussions and review of documents. In presenting the findings of studies conducted from the constructivist perspective, researchers usually provide direct interview extracts from the research participants.

## 1.7 THEORETICAL FRAMEWORK

Theory-based evaluation (TBE) forms the theoretical framework of this study. The concept of TBE has been around for more than twenty years (Treasury Board of Canada, 2012), and has developed significantly over the years through the works of Chen and Rossi, Weiss and Pawson and Tilley (Stame, 2004). This is one of the most used approaches in evaluation due to its capacity to identify the programme elements and their coherence (Cojocaru, 2009).

Theory refers to the professional logic that underlies a programme (Weiss, 1997). Theories of change are subdivided into two components: the intervention theory also known as programme theory (Msila & Setlhako, 2013), which outlines the underlying behavioural assumptions (mechanisms) behind the intervention, and the implementation theory which identifies how an intervention is expected to operate and trigger these mechanisms responsible for the realisation of the desired outcomes (Blamey & Mackenzie, 2007). In addition, programme theory often specifies the inputs and components of a programme, as well as short-term and long-term outcomes, along with the assumed linkages among these (Leeuw, 2003). The programme and implementation theories can be developed separately but are often merged into one theory of change (Msila & Setlhako, 2013). In the current study, the programme theory was developed primarily by the researcher, based on a review of the UWC postgraduate Physiotherapy programme documentation and research literature on similar programmes and through in-depth interviews with programme designers (key informants) (Msila & Setlhako, 2013). The programme theory was then used to guide the development of measuring instruments to assess the programme. Rogers, Petrosino, Huebner and Hacsı (2000) stress that the process of developing a programme theory is in itself a rewarding experience as it enhances understanding of programme and helps identify the most important components which are then used to guide the evaluation process. The implementation theory, on the other hand, was developed through in-depth interviews with programme implementers and postgraduates on the implementation process of the programme under evaluation. These two components constituted the theory of change for the UWC Master's programme which was developed retrospectively by reviewing programme documents and conducting interviews and focus group discussions with stakeholders.

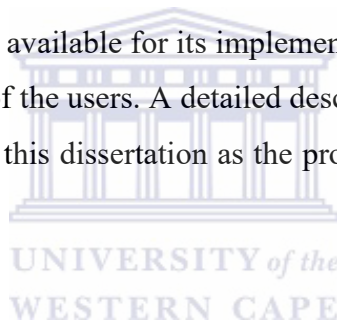
Theory-based evaluation is an approach showing a series of intermediate outcomes or mechanisms by which the programme activities are understood to lead to the desired outcomes (Rogers et al., 2000). This entails examining the assumptions underlying the causal chain from inputs to outcomes and impact (White, 2009). The causal chain links outputs to outcomes and impacts and so it embodies the theory of change as to how the intervention is expected to have its intended impact (White, 2009). This addresses the mantra of proponents of better impact evaluation which is to not only understand what works, but explore the how and why of programme success or failure (Birckmayor & Weiss, 2000; White, 2009). Blamey and Mackenzie elucidate this process by stating that:

“Theory-based approaches to evaluation attempt to understand an intervention’s contribution to observed results through a mechanic process interpretation of causation, rather than determining causation through comparison to a counterfactual” (Blamey & Mackenzie, 2007)

Theory-based evaluation attends not only to what programmes do, but also how participants respond to the intervention or programme (Weiss, 1997). Therefore, an understanding of the interpretations of programme participants is integral to evaluating its impact (Pawson & Tilley, 2004). The application of the TBE approach assures a well-designed impact evaluation that covers both process and impact evaluation questions. According to Weiss (1995), if the evaluation can show the series of micro-steps that lead from inputs to outcomes, then causal attribution for all practical purposes is within reach. Theory-based evaluation thus provides some clues to answer the question of why programmes work or fail to succeed in realising the distal outcomes by creating a model of the mini-steps or linkages in the causal path from programme to ultimate outcomes and empirically testing it (Rogers et al., 2000). Knowing only outcomes, even if we know them with irreproachable validity, does not tell us enough to inform programme improvement or policy revision (Weiss, 1995). Rogers et al. (2000) argue that TBE provides better evidence for causal attribution to answer the question of whether the programme caused the observed outcomes. They further stress that support for causal attribution in the absence of a counterfactual can come from evidence of achievement of intermediate outcomes, investigation of alternative explanation for outcomes, and pattern matching.

The TBE approach has assisted in opening what is commonly known as the “black box” of the programme that is the space between the actual input and the expected output of the programme (Stame, 2004; Msila & Setlhako, 2013). Stame (2004) asserts that TBEs present themselves as a new force relative to method-oriented evaluations. He further contends that all methods can have merit when one put the theories that can explain a program at the centre of the evaluation design.

Although such an evaluation cannot rule out all the threats to validity, it has become common knowledge in the field of evaluation that it has the advantage of showing what processes lead to the outcomes observed and if some of the steps are not verified by the data, then the study can show where the expected sequence of steps breaks down (Weiss, 1997). Stufflebeam’s Context, Input, Process and Product (CIPP) model for example is a typical procedure of TBE approach. According to Cojocar (2009), the model connects the context in which the programme being evaluated runs, the resources made available for its implementation, the activities carried out and the results reflected in the reports of the users. A detailed description of the CIPP model has been presented in the second chapter of this dissertation as the procedure to be used in the context of TBE.



## 1.8 DEFINITION OF TERMS

**Context:** Comprises the historical, political and social-economic circumstances that informed the development and implementation of the UWC BSc (Honours) and Master's programmes. This includes the needs identified by the PDs and the subsequent goals and objectives of the programme (Coryn et al., 2011).

**Inputs:** This refers to resources necessary for successful implementation of the BSc (Honours) and Master's programmes. The input evaluation component can help prescribe a responsive project that can best address the identified needs and may include students, curricula, material and human resources (Cooksy, Gill & Kelly, 2001).

**Process:** Refers to a set of activities performed to realise the objectives of the postgraduate programmes. These activities include teaching and learning methods and evaluation. The process evaluation component monitors the project process and potential procedural barriers, and identifies needs for project adjustments (Zhanget al., 2011).

**Product:** This implies the postgraduates produced by the Department of Physiotherapy at UWC. The product evaluation component measures, interprets, and judges project outcomes and interprets their merit, worth, significance, and probity (Zhanget al., 2011).

**Outcome:** is defined as the application in practice of competencies learned, such as performing research, developing and managing CBR programmes, and as the effect on career, such as job promotion (Zwanikken et al., 2013).

**Impact:** is defined as perceived impact on the work place, such as changes made by alumni and the perceived impact on the sector and society, like improved quality of life (Zwanikken et al., 2013).



**Postgraduate:** is used in the university sector to describe learning that is at a higher level than that achieved at undergraduate level (Gosling, 1999).

**Summative evaluation:** is assessing the impact, outcome or worth of a programme (de Vos, Strydom, Fouche & Delport, 2011).

**UWC Postgraduates:** refers to graduates of the UWC physiotherapy upgrade programs

**Postgraduates perceptions:** refers to perceptions of the graduates of the UWC Physiotherapy upgrade programs



## 1.9 SUMMARY OF CHAPTERS

In **Chapter 1**, the context, research questions, aim and specific objectives of the study are highlighted. The background to the study focuses on Physiotherapy education. This is discussed in the context of outcomes and impact of Physiotherapy educational programmes. Focus is placed on the development of postgraduate programmes aimed at Physiotherapy educational transition from diploma to BSc (Honours) and Master's degrees and the need to evaluate the said programmes in order to ascertain their outcomes and impact in sending countries such as Kenya, Rwanda, Tanzania and Zambia.

In **Chapter 2**, an introduction of the literature chapter is rendered, followed by a description of higher education. The researcher presents two forms of higher education systems, college or vocational and university education, followed by internationalisation of higher education, globally and in Africa. Then quality of education and the transition of Physiotherapy education are rendered, followed by perceived outcomes and impact of postgraduate Physiotherapy degree programmes. The researcher concludes the chapter with a description of various evaluation models and demonstrates how the evaluation steps in the CIPP model were used to guide the current evaluation, using TBE.

In **Chapter 3**, the rationale for choosing an exploratory and descriptive qualitative methodology for this thesis is highlighted. Qualitative research is presented as an umbrella concept, which enabled the researcher to report on multiple realities of the 'case', including my own perceptions. An account of the study design including the process involved in identifying a study site and recruiting participants is presented. The procedure involved in the triangulation of three types of data collection methods, namely, document reviews, in-depth interviews, and focus group discussions is outlined. Ethical considerations that guided the study are outlined. The chapter concludes with a presentation of a thematic data analysis using a computer software package known as Atlas.ti is described.

In **Chapter 4**, the BSc (Honours) and Master's programme context is presented by way of highlighting programme rationale, objectives and anticipated outcomes, forming the first step of TBE through the use of the Context, Input, Process and Product (CIPP) framework. At this stage, the programme theory is developed through review of programme documents and individual interviews with key stakeholders.

**Chapters 5:** In this chapter, the researcher presents the programme implementation process from the perspective of the UWC postgraduates, thereby highlighting the programme implementation theory. This chapter shows the link between the programme theory in Chapter Four (4) and the programmes implementation process theory. The chapter also highlights postgraduates' initial expectations relative to their perceptions of actual delivery of the programmes. Graduates' perceptions of their learning experiences at UWC are also presented.

**Chapter 6:** In Chapter Six (6), the researcher presents the workplace supervisors' perceived impact of the UWC postgraduate programmes in their respective organisations and countries. Focus is placed on the contribution of UWC postgraduates to their respective institutions and countries. Perceived strengths and weaknesses of the UWC postgraduate programmes are also highlighted. The experiences and perceptions of the students of UWC postgraduates working as lecturers are presented, highlighting performance strengths and gaps of the UWC graduates employed as lecturers in Zambia and Kenya. The findings in these chapters are also linked to the programme process in Chapter Five (5), and the programme context and inputs in Chapter Four (4).

In **Chapter 7**, the conclusions are guided by the main research questions of the thesis. This is followed by a presentation of the strengths and limitations of the study, followed by a proposed postgraduate BSc (Honours) and Master's programme model, most notably, the need to incorporate core basic sciences such as pharmacology and pathology, and clinical practice in the BSc (Honours) programme. The model also proposes a more rigorous structured Master's programme to run alongside the Master's by research. Finally the chapter presents recommendations arising from the findings of the study.

## CHAPTER TWO

### REVIEW OF THE LITERATURE

#### 2.1 INTRODUCTION

This chapter presents the literature reviewed in respect of the study at hand. The essence is to describe and synthesise available literature on this topic. This chapter also helps to identify areas of consensus as well as gaps that require attention. In doing so, literature on higher education (HE) globally and Africa in particular is presented. Thereafter, international HE, quality and educational collaborations are rendered. Furthermore, the researcher discusses the development and evolution of Physiotherapy education, Physiotherapy curricula and perceived outcomes of Physiotherapy education. Finally, an evaluation model (the Context, Input, Process and Product) underpinning this study is presented.

#### 2.2 HIGHER EDUCATION

Higher education refers to education and training at college and university, especially to degree level (Mutula, 2011). Higher education systems in developed countries were introduced much earlier with the establishment of universities like the University of Sydney in 1850 (Yang, 2007) while the overwhelming majority of institutions of HE on the African continent was only created in the 1960s (Assie-Lumumba, 2006), following the aftermath of the political independence of many African countries from colonial rule (Hinchliffe, 1987; Altbach & Knight, 2007).

The rationale behind the creation of university education was to afford learners the opportunity to attain a high level of intellectual development in the arts, sciences and traditional professional disciplines, and to also promote high level research (Assie-Lumumba, 2006). In addition, university education facilitates the development of critical thinking, a commitment to continuing professional development, decision-making and a host of other generic skills (Kell, 2006).

Universities should serve as generators of more advanced knowledge, scholarship and innovation (Mutula, 2011), compared to their counterpart institutions of HE which offer post-secondary education and training courses in technical and vocational subjects and practical fields of work with the aim of producing middle-grade technicians (Assie-Lumumba, 2006). In comparing university to college HE systems, the author reports that the latter focuses on the acquisition of technical skills required to perform a specific task, without necessarily availing the learner an opportunity to acquire competence in critical thinking and a broader knowledge base. In the current study, the focus was on additional knowledge and behavioural changes acquired by university graduates who had initially entered their professional practice with a college diploma qualification from different African countries and proceeded to acquire BSc (Hons) and Master's degrees from a HE institution in South Africa.

### **2.2.1 International Higher Education**

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Knight (2008) defined international education as the process of integrating an international, inter-cultural, or global dimension into the purpose, functions, or delivery of HE. Thus, this is consumption of HE services of one country by the nationals of another (Kwaramba, 2012). As we progress into the 21st century, internationalisation of HE is increasingly a key factor shaping and challenging the HE sector in countries all over the world (Knight, 2006). In fact, more than two million HE students study outside their home countries (Altbach, 2006; Bodycott, 2009). Australian experts argue that perhaps 15 million students will study abroad by 2025 (Altbach & Knight, 2007). Developed countries such as the United States, Australia and the United Kingdom are leading host countries, though South-to-South activities are increasing, especially in Asia and Africa (Altbach & Knight, 2007). India and the Philippines, for example, are significant host countries for students from other developing countries. India hosts more than 8,000 students from abroad, with 95% from developing countries (Bhalla, 2005). In East Africa, Uganda receives international students from Burundi, Democratic Republic of Congo, Eritrea, Kenya, Rwanda, Somalia, Sudan, and Tanzania (Ssempebwa, Eduan & Malumba, 2012), while South Africa has strategically positioned itself as Africa's main destination for students from Sub-Saharan African countries including Ghana, Nigeria and Kenya (Kwaramba, 2012).

Other than an overview on internationalisation of HE, this literature also highlights the fact that some developing countries are increasingly assuming the role of being the source of knowledge and manpower development for other developing countries, a function that was previously the province of developed countries (Uys & Middleton, 2011).

As a consequence, international collaborations in health education whether North-South or South-South educational ties could improve education of health professionals and enhance care for patients by encouraging capacity building and quality improvement. For instance, in order to establish a solid foundation for a new era for nursing in China, the China Medical Board in collaboration with six universities in the USA, launched two major initiatives: an internationalised Committee on Graduate Nursing Education, and later a local Programme on Higher Nursing Education Development. The programmes were formed to prepare a cadre of Master's level nurses to upgrade the faculty in China's emerging Baccalaureate Nursing programmes. The two programmes produced a total of 88 new Master's of Science in Nursing, critical to the development of graduate nursing education in the People's Republic of China (Sherwood & Liu, 2005). In addition, Frantz et al. (2014) highlighted that North-South collaborations can assist in developing both individual and institutional research capacities.

### **2.2.2 Internationalisation of South African higher education in Africa**

Relative to other African countries, South Africa has the highest number of top universities and accounts for 70% of all SADC foreign students enrolled in SADC countries (Kwaramba, 2012). Clearly, this brings several advantages to students, HE institutions and countries as it enables the homecountries to educate their citizens for whom places or study programmes might not have been available in the home country. In this changing context of student mobility to South Africa, and efforts in the direction of internationalisation, it becomes important to examine the needs and expectations of an international student. Unlike immigrants who move for employment or because of social compulsions, international students stay for set time periods with a specific purpose.

Although international education programmes are increasing in number as earlier demonstrated, students' responses to various pedagogical tools used in these programmes have rarely been examined (Mahrous & Ahmed, 2010). Further, while the research on student and graduate perspectives and related factors is appropriate and an important source of data, the perceptions of other stakeholders like employers (Assie-Lumumba, 2006), regarding the benefits of graduate programmes also need to be assessed. Only a few studies have been conducted which explore and compare students' perceptions in different countries of the effectiveness of various educational tools (Mahrous & Ahmed, 2010). In addition, the majority of these studies are conducted in developed countries. However, study results based mainly on students in the first world cannot be extended to generalise students' perceptions in other parts of the world, due to cultural and educational differences. A study conducted by Mahrous and Ahmed (2010) in the United States, Middle East and the United Kingdom, demonstrate that the students from each region have a different opinion with regard to the impact of various teaching tools on their learning outcomes. The findings by earlier studies, therefore justify the need to conduct context specific studies in order to meet students' needs and expectations, and to maintain student satisfaction and loyalty towards study destinations (Arambewela & Hall, 2009).

Without intentional, comprehensive instructional design, study abroad experiences do not always produce the kind of learning, development, and transformation that is intended (Gray, Murdock, & Stebbins, 2002; Green, 2007). For example, Wu (2006) found that students who study abroad often need special assistance dealing with language issues that affect test-taking, academic assignments, and social interaction. Woolf (2007) suggests international field-based teaching has remained essentially static and curricula and instructional practices must be significantly revised to meet new global-diversity learning needs. In addition, the impact of studying abroad is still not well documented and often based on assumptions made by administrators and faculty (Dekaney, 2008). Vande-Berg (2007) observes that the increase in study abroad enrollment (more than 300% in the past twenty years) is leading governments, institutions, and faculty to focus on the effectiveness of teaching and learning in these programmes.

Evaluation of the impact of training programmes should focus on acceptable evidence of the realisation of the outcomes for which the programmes were implemented. Thus, the impact of training programmes can be measured by the learning experiences and instruction they offer (Ssempebwa, Eduan & Mulumba, 2012). If study abroad programmes are to facilitate learning effectively, faculty in these programmes must intervene before, during, and after these experiences (Vande-Berg, 2007). Green (2007) suggests that faculty must develop an internationalised mindset to create learning that is comparative, integrative, interdisciplinary, contextual, and global. In many countries, however, observers criticise many international HE programmes for low standards but fail to identify measures of quality (Altbach & Knight, 2007). As such, the implementation of the African Union Harmonisation Policy for HE, ratified in 2007 (Kwaramba, 2012) would serve as a quality regulatory framework for HE through standardisation of HE in Africa. In addition, institutional and programme accrediting agencies in Africa would be required to demonstrate compliance to articulated regulations and standards. Similar regional educational policies such as the Bologna Process (Morgan & Lydon, 2009) and the Asia Pacific Quality Network have demonstrated promotion of cross-country mobility of students in Europe and Asia, respectively, through promoting and administering equivalencies of qualifications across national/regional systems of education (Cross & Rouhani, 2004; Brooks & Waters, 2009). It is time for Africa to walk the talk.

### **2.2.3 Quality Assurance in Higher Education**

The definition of quality in HE is clad with much controversy (Owlia & Aspinwall, 1996; Cullen, Joyce, Hasall, & Broadbent, 2003; Tam, 2001; Khodayari & Khodayari, 2011). This is because quality is a multi-faceted concept and hence has no single definition. Harvey and Green (1993), described quality as a ‘relative concept’. It is said to be relative to the stakeholders in HE (Tam, 2001). According to Khodayari and Khodayari (2011), service quality in HE is the difference between what a student expects to receive and his perception of actual delivery. It is clear that quality is defined from the perspectives of stakeholders. Therefore, quality HE in this study simply implies customer satisfaction of both graduates and employers.



The education system, and more so, the HE system in particular finds itself in a market oriented environment with internal and external customers, wherein “delighting the customer”, is the rule for survival, going forward (Sahney, Banwet & Karunes, 2004; Wright & O’Neill, 2002).

There are many stakeholders for whom the quality of HE is vital including students, employers, teaching and non-teaching staff, governments and funding agencies (Lagrosen, Seyyed-Hashemi & Leitner, 2004). The inclusion of employers in educational programme evaluation is based on the premise that HE customers have diverse interests, employers for instance are more concerned with the “product (graduate)” of the system and so the capabilities of graduates as well as the reliability of the institutions to deliver them are of interest. These attributes are equally important to other groups of customers such as families and society (government), implying that employers can be regarded as representatives for all external clients (Owlia & Aspinwall, 1996). Thus, understanding quality from the perspective of customers is crucial. This deliberate focus on client satisfaction in the quest to offer quality service was supported by Juran (1998). Some factors influencing quality service in higher learning institutions such as lecturers’ academic qualifications, professional experience and communication skills have been well established (Tsinidou, Gerogiannis & Fitsilis, 2010). This highlights the focus of HE institution to include graduate attributes as a specific focus and outcome. Some studies have revealed that there is a mismatch between the skills students develop during their studies and the skills that employers need. Graduate attributes have now become one of the core sets of HE outcomes that every graduate should possess (Bithell, 2007). In South Africa, the Education White Paper emphasises that South African HE institutions should be producing “graduates with skills and competencies that build the foundations for life-long learning, critical and analytical skills, problem-solving and communication skills, as well as the ability to deal with change and diversity, in particular, the tolerance of different views and ideas” (Education White Paper 3 – A Programme for HE Transformation, 1997) (Soudien, 2010).

Measuring service quality in education is important for attracting and retaining tuition-based revenues (Khodayari & Khodayari, 2011). The application and adaptation of service quality concepts and assessment models in the HE sector have attracted much attention in recent years (Koni, Zainal & Ibrahim, 2013). Aldridge and Rowley (1998) argue that the construct of quality as conceptualized in the service literature is based on perceived quality. They added that perceived quality is derived from the consumers' overall evaluation of a service experience. Literature shows that, students who are satisfied with their courses, teachers or university services would feel proud to be a student of that particular institution, would recommend it to other potential students or even return to the same institution should they consider furthering their education (Williams & Cappuccini- Ansfield, 2007; Koni, Zainal & Ibrahim, 2013). In order to measure and improve service quality, HE institutions are expected to collect, analyse and disseminate data on how students, alumni, employers, faculty and staff perceive the quality and impact of their programmes and services (Weish & Dey, 2002). Given the competitive international market, universities must be able to demonstrate that they can supply human capital capable of meeting the needs of a globalised market place (Kennedy, 2011), especially with the advent of internationalisation of HE.



Gibbs (2010) categorised variables of dimensions of education quality into presage, process and product. Presage variables define the context before students start learning, while process variables describe what goes on as students learn, and product variables relate to the outcomes of that learning. Therefore, to understand what goes on and draw valid conclusions, it is necessary to have measures of a range of dimensions of quality at the same time because dimensions interact in complex ways with each other. Gibbs (2010) argues that measures of educational process, best predict educational gain compared to presage variables such as funding and research performance which do not explain much of the variation between institutions in relation to educational gains. He suggests that the focus should therefore be on what institutions do with their resources to make the most of the students they have. Thus, the process variable that best predict gains are not to do with the facilities themselves he argues or to do with students satisfaction with these facilities, but concern a small range of fairly well-understood teaching strategies that engender student engagement.

Owlia and Aspinwall (1996) add that the importance of the process dimensions from the customer's viewpoint depends on the extent to which they participate in the process. In addition, Tam (2010) reports that models of quality in HE such as the production model predicts a relationship between inputs and outputs and the value added approach which measures the gain by students before and after the training.

Literature demonstrates that the quality of HE should be understood from the perspectives of stakeholders in order to consider their varying interests. In the higher education context, stakeholders include students, graduates and employers. Further, literature has shown that in order to understand what goes on, it is necessary to measure a range of dimensions of quality at the same time using the presage, process and product evaluation framework which is akin to the CIPP evaluation model used in the current study.

### **2.3 PHYSIOTHERAPY EDUCATION**

The Physiotherapy profession began as a society of trained masseuses founded by four London-based nurses/midwives masseuses in Victorian England in 1894 (Nicholls & Cheek, 2006). Over the past decades, Physiotherapy education throughout the world has transitioned (Hunt, Higgs, Adamson & Harris, 1998) from early training programmes for reconstruction aides, to its current status with a training certificate or university degree as the minimum level (Johanson, 2005). Physiotherapy education programmes in most countries have moved from colleges where they provided predominantly vocational training (Jones & Sheppard, 2008), to universities, where they have assumed applied and clinical sciences frameworks (Hunt, Higgs, Adamson & Harris, 1998). Changes in entry level education in Physiotherapy were largely necessitated by changes in health care delivery, expanding scope of practice and the need for greater depth of knowledge (Warren & Pierson, 1994). Presently, to be a licensed physiotherapist, one has to possess a BSc degree in Physiotherapy or Bachelor of Physiotherapy (Hager-Ross & Sundelin, 2007). As a result, diploma holders are required to upgrade to baccalaureate level and beyond (Frantz, 2007).

### **2.3.1 Historical Background of Physiotherapy Training: International Overview**

Physiotherapy training and education has its origins in the United Kingdom where an association of trained masseuses was established in 1894 by members of its precursor discipline – massage therapy (Nicholls & Cheek, 2006). The first official diploma programmes, two years in duration, started at the University of Melbourne, Victoria, the University of Sydney, New South Wales and diploma at the University of Adelaide, South Australia in 1906, 1907 and 1908 respectively (McMeeken, 2007). The diploma of massage, as it was known then, required a first year study of anatomy, physiology, theory and practice of medical gymnastics and a course of anatomical dissections. Subsequently, in 1933 the duration of the diploma programmes was extended from two to three years to include more clinical work and muscle re-education, a move necessitated by the poliomyelitis epidemics of the time (Chipchase, Galley, Jull, McMeeken, Refshauge, Nayler & Wright, 2006). The diploma programmes in Australia were affiliated with university medical schools and their teaching hospitals (McMeeken, 2007) and not completely hospital-based as in England (Nicholls & Cheek, 2006). The educational programmes in both England and Australia were overseen by medical doctors and anatomists (Nicholls & Cheek, 2006; Chipchase, Galley, Jull, McMeeken, Refshauge, Nayler & Wright, 2006). In Canada, the University of Toronto was the first to offer a diploma programme in 1929. The diploma was preceded by a one-year training programme for masseuses and masseurs at McGill University Department of Physical Education in 1916. The programme was developed in response to the return of wounded Canadian soldiers during the First World War. Like in Australia, all Canadian physiotherapy programmes but the Mohawk College programme, have traditionally been housed in a university setting, linked in some way to a medical education programme (Redenbach & Bainbridge, 2007). The first School of Physiotherapy in Ireland was established in 1905 as the Irish School of Massage, which evolved into the Dublin School of Physiotherapy (in 1942), and later the School of Physiotherapy, Trinity College Dublin, awarding its first Diploma in Physiotherapy in 1957 (Blake, Cusack, Doody & Hurley, 2007).

### **2.3.1.1 History of Physiotherapy Training in Africa**

Physiotherapy training in most African countries began after the two World Wars (1914-1918 and 1939-1945). Therefore, the training of Physiotherapy assistants and eventually Physiotherapists was in response to the apparent need for skilled rehabilitation workers to treat the war victims (John et al., 2012). In Kenya, Physiotherapy training began as a certificate course in 1942 at the Native Civil Hospital in Nairobi, now Kenyatta National Hospital. Natives were trained as Orthopedic Assistants (with skills in application of plasters, traction and making corrective splints). During the world wars, Physiotherapists from the UK were deployed to provide rehabilitation services to the victims (Jomo Kenyatta University Records, 2011). By 1955, a one-year course was introduced and the content expanded to include some Occupational Therapy. In 1965, the one-year “orthopedic technician” course was transitioned into a three-year Diploma for Physiotherapists at the now Kenya Medical Training College and the first group of six students was enrolled in 1966 (Jomo Kenyatta University Records, 2011).

Similarly, Physiotherapy education in South Africa dates back to 1942, though it was only offered in historically white universities and black people could not study in white universities because the laws of the country prohibited them to do so (Mbambo, 2008). This author further reports that it was not until 1969 that black Physiotherapy students were first admitted into Technikon and colleges for a two-year diploma in Physiotherapy which was moved to historically black universities such as the Medical University of Southern Africa a decade later (1979). The two-year diploma programme was later upgraded to a four-year degree in 1982. In Nigeria, British chartered Physiotherapists first introduced a three-year Assistant Physiotherapy programme in 1945 (John et al., 2012) while in Tanzania, Physiotherapy training and education only started in 1980 (Kilimanjaro Christian Medical Centre Records, 2004). The three-year diploma programme was initiated by five foreign trained Tanzanian Physiotherapists in collaboration with foreign Physiotherapists who worked in that country at the time (Kilimanjaro Christian Medical Centre, 2004). Countries like Malawi depended on neighboring countries such as Zambia and Tanzania for training of Physiotherapists (Frantz, 2007). Physiotherapy education and training in Zambia was introduced in 1972 as a three-year diploma programme.

In other African countries such as Rwanda, Physiotherapy training at diploma level started much later in 1997 at Kigali Institute of health sciences (Chevan, M’kumbuzi & Biraguma, 2012) while Sudan introduced its first Physiotherapy programme at degree level in 2007 through North-South collaboration between Norway and Sudan (Haugland, Sorsdahl, Salih & Salih, 2014).

Literature highlights the history of Physiotherapy training and education. The section has attempted to chronicle the origin and development of Physiotherapy training and education globally. While Physiotherapy education is well documented in the west, there is a dearth of information in the published literature on physiotherapy education in Africa.

### **2.3.1.2 Transition from Diploma to Baccalaureate Programmes in Physiotherapy**

Following World War II, the demand for PTs grew such that by the mid-1960s the education of PTs, along with other professions, was redirected to the major tertiary education sector and the qualification transitioned from a Diploma to Baccalaureate Degrees of a minimum four-year length (McMeeken, 2007), to accommodate a more solid foundation in biological and pathological sciences, and an increase in the teaching of behavioural sciences, whilst still retaining an emphasis on the acquisition of professional skills and clinical experience (Chipchase, Galley, Jull, McMeeken, Refshauge, Nayler & Wright, 2006). The transition of Physiotherapy education occurred rapidly in developed countries such that by 2007, Canada had introduced fourteen academic Physiotherapy programmes at various universities (Redenbach & Bainbridge, 2007) while Australia had a total of eight entry-level degree programmes by 2006. Ireland boasts of four BSc (Hons) degree programmes and the first was introduced at University College Dublin in 1983 (Blake, Cusack, Doody & Hurley, 2007), whereas the UK, moved away from the previous graduate diploma system later in 1992 when Physiotherapy became a degree access profession in that region (Kell, 2006), with three years of full-time study being the convention in England and Wales, compared with four years in both Scotland and Northern Ireland. By 2007, a total of sixty-seven qualifying programmes in Physiotherapy, the majority of which led to BSc (Hons) awards by full-time study were offered in thirty-seven UK universities and colleges (Bithell, 2007).

Sweden was a relative late-comer to Baccalaureate entry-level Physiotherapy education, initiating its university programme in 1998 and as at 2007; eight of the sixteen universities in Sweden offered an educational programme in Physiotherapy at the undergraduate level, with three-year duration (Hager-Ross & Sundelin, 2007). Most recently, Singapore transitioned from a Diploma to Baccalaureate in 2012 through international higher education collaboration between Trinity College Dublin in Ireland and Singapore Institute of Technology (Hussey, Wong & Connell, 2013). While the transition from diploma to Baccalaureate programmes in physiotherapy is well documented in the west, there appears to be little information in the published literature on physiotherapy education reforms in Africa.

Although it is evident that both nationally and internationally, Physiotherapy is a four-year university degree, there are variations that depend on the nature of education and health system models within countries as well as Physiotherapy education and practice. In its position paper, on education for entry-level PTs, WCPT recommends that education should be based on university or university-level studies, of a minimum of four years of study, independently validated and accredited as being at a standard that awards graduates full status and international recognition (Glover, Millette and Eftekari, 2003). However, WCPT recognises that not all countries in all regions have Physiotherapy education programmes that meet this recommendation.

### **2.3.1.3 Models of International Collaborations in Physiotherapy Education**

The need to upgrade Physiotherapy education to Baccalaureate level was necessitated by the recommendation of the World Confederation for Physical Therapy that PTs' professional entry-level educational programmes be based on university-level studies, of a minimum of four years (Frantz, 2007). However, while the transition from Diploma to Baccalaureate and postgraduate credentials in most developed countries was achieved independent of other countries, limited human and material resources hamper the development of Physiotherapy education in developing countries (John et al., 2012), and some developed but human resource constrained countries like Singapore (Hussey, Wong & Connell, 2013).

Owing to lack of human, material and financial resources (Frantz, 2007), affected countries are seeking HE ties with countries with more resources to either upgrade or establish Physiotherapy programmes (John et al., 2012). Examples of international collaborations within the Physiotherapy profession are widespread. For instance, the Ministry of Education in Singapore partnered with Trinity College Dublin (TCD), an Irish university, through its Nanyang Polytechnic (NYP) in 2011. The Ministries of Health and Education in Singapore, identified the need for diploma holding physiotherapists to develop the skills required for initiating, leading, developing, and evaluating services in all areas of health, and particularly in primary care, extended care, and chronic disease management and rehabilitation (Hussey, Wong & Connell, 2013). The collaboration led to the development of a one-year programme leading to a BSc (Physiotherapy) by academic staff in TCD, in consultation with the Physiotherapy community in Singapore. The entry requirement to the programme was a three-year diploma programme in Physiotherapy from the NYP in Singapore.

The learning outcomes for the one-year course was developed by mapping the learning outcomes achieved by successful graduation from the three-year diploma in Singapore with the outcomes for the four-year BSc degree in Physiotherapy for Ireland (Hussey, Wong & Connell, 2013). The modules that were developed to meet the learning outcomes through the mapping process include six weeks in Ireland with four weeks on clinical placement as part of overseas immersion programme while the rest of the content was taught within the home country (Singapore) by Irish educators. In both Ireland and Singapore, a particular focus of health care delivery has been the management of chronic diseases owing to an increasingly aging population (Hussey, Wong & Connell, 2013).

In addition, a collaboration initiated between Health Volunteers Overseas (HVO) and the Surinamese Ministry of Health through its Anton de Kom University of Suriname (AdeKUS) physiotherapy education programme in 1999 provides yet another useful example, this collaboration helped establish a once fragile programme devoid of operational funds, necessitated by an unexpected budgetary shortfall in Suriname (John et al., 2012).

The Surinamese financial challenges affected recruitment of core PT faculty to equip the young Physiotherapy programme established in 1996 with the much needed human resources.



The intervention of the HVO, a non-governmental organisation constituting a network of health care professionals, organisations, corporations, and donors united in a common commitment to improving global health through education revived the said programme. The HVO provided the much needed assistance through arranging for volunteer Physiotherapy experts from different nations, especially the United States, to serve as temporary (two to four weeks) faculty in the AdeKUS Physiotherapy programme (John et al., 2012).

The HVO provided a platform for Physiotherapy clinicians and educators to render a variety of services to many countries around the world, including Suriname. Activities undertaken by HVO volunteers in Suriname include up-grading content in the curriculum, improving curriculum evaluation, upgrading host site faculty teaching skills, and delivering some Physiotherapy content lectures (John et al., 2012) as also reported by Physiotherapy faculty volunteers elsewhere (Fell, 2012).

In some instances, members of the medical fraternity such as physicians, facilitated the establishment of collaborations between PTs in more resource-rich countries and medical universities in countries where there was no previous history of Physiotherapy education (John et al., 2012). Prior to 2007, Mongolia had a few foreign trained foreign and Mongolian PTs owing to a lack of Physiotherapy education facilities in that country. To fill the gap, few NGOs and charity organisations sponsored qualified PTs and students from other nations for short-term international internship placements in Mongolia. However, in 2007, the National Gunma University (NGU) in Maebashi, Japan, through a Mongolian physician who had gone to study Physiotherapy in that country, worked jointly with the Health Science University in Mongolia (HSUM) to initiate a four-year BSc Physiotherapy programme. Faculty from NGU and HSUM gathered for three workshops to develop curriculum for the programme whose primary structure was based on the existing curricular structure at NGU, Japan (John et al., 2012). Three faculty members including two physicians who studied physical therapy for eleven months at NGU in Japan initiated the Physiotherapy programme. In an effort to provide technical assistance to the new programme in Mongolia, NGU deployed two faculty members to Mongolia twice each year for an intensive week-long series of lecture and laboratory sessions to teach Physiotherapy-specific content.

The collaboration led to the initial HSUM programme output of fourteen Physiotherapy graduates in May 2011. As a result of the success of the educational collaboration between HSUM and NGU, the former now admits thirty students per year to the program (John et al., 2012).

Another North-South educational collaboration occurred between higher education institutions in Norway, a high-income country, and Sudan, a low-income country (Haugland, Sorsdahl, Salih & Salih, 2014). In 2007, Ahfad University for Women (AUW) in Sudan signed a partnership agreement with Bergen University College (BUC) in Norway to establish a five-year entry-level Bachelor of Physiotherapy programme in Sudan. The collaboration was funded by Fredskorpset Norway, an agency of the Norwegian Ministry of Foreign Affairs. Senior Physiotherapy participants from BUC rendered technical advice on curriculum development to ensure focus on core subjects in Physiotherapy and clinical practice while the programme was left to AUW to administer according to their university policies and procedures. The collaboration also involved exchange visits whereby educators from AUW worked at BUC and vice versa for one study year. This bachelor of physiotherapy programme graduated its first class in 2012.

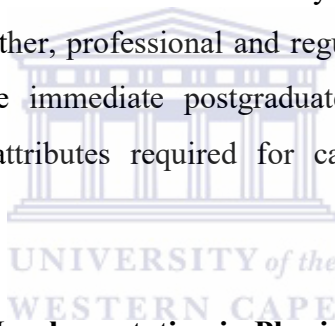
The literature highlights North-North and North-South case scenarios of educational collaborations in Physiotherapy. However, there is little information on evaluation of the outcomes and impact of educational collaborations in Physiotherapy education. The current study seeks to evaluate the perceived outcomes and impact of a South-South educational collaboration initiative in Africa, from the perspectives of graduates and employers.

#### **2.3.1.4 Curriculum Framework Development and Governance**

Curriculum frameworks for Physiotherapy programmes vary across countries and programmes though the variance is minimal. Though there have been attempts in Europe to Europeanise the Physiotherapy curricula in response to the Bologna process, an instrument that seeks to harmonise higher education among the European Union member states to promote lifelong learning and cross-cultural exchanges in terms of enhanced clinical expertise and research (Bithell, 2007; Hager-Ross & Sundelin, 2007), while in other parts of the world, Physiotherapy education develop relatively independently (Chipchase, Galley, Jull, McMeeken, Refshauge,

Nayler & Wright, 2006). Since the transition from Diploma to Baccalaureate degrees in Physiotherapy, the curricula underwent major reviews to support the development of degree-level programmes (Bithell, 2007).

To ensure high standards of Physiotherapy education, national professional and regulatory bodies such as the Chartered Society of Physiotherapy in the United Kingdom (Kell, 2006), Australian Standards for Physiotherapy / The Standards for Accreditation of Physiotherapy Educational Programmes (McMeeken, 2007) and Physiotherapy Board of New Zealand (Skinner, 2007) to mention but a few control and oversee the implementation of the curriculum as well as govern the right to practice Physiotherapy in their respective countries (Hager-Ross & Sundelin, 2007). The professional bodies set out the competencies required for entry-level registration and these competencies form the framework for undergraduate programmes in Physiotherapy: learning objectives and outcomes set for each module at each year level are matched against the competencies (Skinner, 2007). Further, professional and regulatory bodies ensure HE providers develop courses that balance the immediate postgraduate needs of the student with the development of the skills and attributes required for career progression and practice as Physiotherapists (Kell, 2006).



### **2.3.1.5 Curriculum Content and Implementation in Physiotherapy**

Sciences form part of the Baccalaureate degree programmes in Physiotherapy. Core biomedical sciences for Baccalaureate programmes include Pathology, Anatomy and Physiology of the Human Body (McMeeken, 2007; Redenbach & Bainbridge, 2007), for the body systems relevant to Physiotherapy practice, and relevant physical sciences as applied to specific aspects of Physiotherapy such as Physics of Water and Biological Physics (Bithell, 2007; Skinner, 2007). Students also receive exposure to behavioural sciences like Psychology and Sociology (Redenbach & Bainbridge, 2007), in order to understand how social and psychological factors impact upon their patients and themselves as practitioners (Bithell, 2007). Other than the biomedical and behavioral sciences, the curriculum also prepares students through profession specific modules such as kinesiology, biomechanical principles relevant to human movement, cardiopulmonary, musculo-skeletal and neurological Physiotherapy (Bithell, 2007; Skinner, 2007).

Students are also exposed to research methods and critical appraisal techniques in order to prepare them for critical understanding of published literature, evidence-based practice and, on most programmes, a small scale empirical research project (Bithell, 2007).

For example, in Sweden, it is mandatory for all Physiotherapy students, not only Honours students, to write a scientific Bachelor thesis worth 15 out of 180 European Credit Transfer System (ECTS) at Baccalaureate-level.

Apart from the academic component of Physiotherapy Baccalaureate programmes provided by universities, there is also a clinical education and training component of the programmes provided in the clinical setting across a wide range of contexts including hospital, private clinic, child development centre, home and community (Redenbach & Bainbridge, 2007). The approximate number of hours of clinical practice in Ireland, New Zealand and the UK is 1000 hours of supervised “hands on” clinical education and practice (Blake, Cusack, Doody & Hurley, 2007; Bithell, 2007; Skinner, 2007) while Canadian programmes vary between 900 and 1200 hours of the total education programme (Redenbach & Bainbridge, 2007). In Swedish universities, clinical practice outside the university setting constitutes about 17–20% of the total education programme (Hager-Ross & Sundelin, 2007). Students undertake clinical placements in tertiary care/cardiopulmonary, musculoskeletal, and neurological Physiotherapy and one other elective or community-based placement (Skinner, 2007).

Academic education for students takes place, for the most part, in universities and is provided by academic members of university staff, expert clinicians, clinical tutors and postgraduate research students (Redenbach & Bainbridge, 2007). An Anatomist, Physiologist or Pathologist may teach biomedical sciences such as Anatomy, Physiology or Pathology, with the applied components frequently taught by PTs holding postgraduate qualifications, most commonly a PhD in a discipline within Physiotherapy (McMeeken, 2007). For example, an Anatomical scientist and a Physiotherapist Anatomist teach musculo-skeletal anatomy with tutors drawn from PTs, surgical trainees and anatomical scientists. Physiotherapists teach the applied components of kinesiology. Psychologists, Sociologists and Ethicists who may also be PTs teach the behavioral sciences (McMeeken, 2007) while clinical education is provided by expert clinicians and clinical tutors in a variety of clinical centres as alluded to early on (Skinner, 2007).

Similar to the Bachelor programmes in developed countries, clinical education forms a core component of Physiotherapy training in Africa (Ernstzen, Statham & Hanekom, 2014).

For example, the first two (2) years of the four-year physiotherapy programmes are foundational and mainly classroom-based. At this stage, foundational subjects such as behavioural and medical sciences are covered. In the second year however, Departments of Physiotherapy present a clinical introductory module as a transition strategy between the classroom and the clinical learning environment. This clinical course exposes students to clinical practice through visits to different clinical blocks, without being responsible for patient management, until third and fourth year, when students take responsibility for patient management at clinical placements (Ernstzen, Statham & Hanekom, 2014). In some universities in South Africa, Physiotherapy students are supported in their clinical education by both clinicians at the healthcare centres and clinical instructors (Odole & Oladoyinbo, 2014), for a minimum of 1000 hours of supervised clinical practice over the four-year training period (Krause, Viljoen, Nel & Joubert, 2006).

Other than South Africa, there is little published information regarding Physiotherapy programmes in Africa, though reviews of Kenyan and Tanzanian curricula demonstrate that the content offered in the four-year programmes vary between programmes. The content and study durations vary according to institutional and national frameworks (Haughland, Sorsdahl, Salih & Salih, 2014). For example, countries like Nigeria (John et al., 2012), Sudan (Haughland, Sorsdahl, Salih & Salih, 2014) and Zambia have relatively long study durations of five years compared to South African (Mostert-Wentzel, Frantz & Rooijen, 2013), Rwandan, Kenyan and Tanzanian four-year Physiotherapy degree programmes (Frantz, 2007). Other than basic and human sciences, African Physiotherapy programmes emphasise not only hospital-based management but also prevention of disease and promotion of health through a community-oriented approach. The shift from hospital-based to community-based education with an emphasis on primary health care is to meet the needs of under-privileged clients in rural and remote areas (Krause, Viljoen, Nel & Joubert, 2006).

Although Physiotherapy Baccalaureate programmes have been established in some African countries, Frantz (2007) reported that despite higher population growths, most African countries have only one training institution, compared to four (4) in Ireland (Blake, Cusack, Doody & Hurlley, 2007) and eight (8) in Sweden (Hager-Ross & Sundelin, 2007). Surprisingly, countries like Tanzania, with only one training institution have a population ten and five times more than Ireland and Sweden respectively. This scenario provides just a glimpse of the situation regarding Physiotherapy training opportunities in Africa.

To ensure currency and congruence with current practice requirements, most universities review their curricula every five years (Bithell, 2007; Blake, Cusack, Doody & Hurley, 2007). The curricula framework upheld by most BSc Physiotherapy programmes seems to be in agreement with the WCPT education policy statement adopted in 2004 which demands that Physiotherapy professional qualification should include a clinical component, equip Physiotherapists to practice in a variety of health care settings, include research methods and evidence-based practice (Frantz, 2007).

The literature shows the evolution of Physiotherapy education globally. It also highlights the transition of Physiotherapy education from Diploma to Baccalaureate and models of Physiotherapy education with duration of Baccalaureate. Currently, most if not all the developed countries highlighted offer postgraduate education through to Doctoral level. Contrastingly, however, with the exception of South Africa and Nigeria, the literature also highlights a gap in terms of the relatively low numbers of Physiotherapy training institutions in most Africa countries, whereby a country like Tanzania with a population five and ten times higher than that of Sweden and Ireland respectively has only one Physiotherapy training institution. This demonstrates the need to increase Physiotherapy training opportunities in Africa so as to meet the ever increasing demand for rehabilitation services.

### **2.3.1.6 Outcomes of Physiotherapy Education**

The primary purpose of schools of Physiotherapy, and their tradition, is to develop in their students the cognitive and practical breadth required to function as competent practitioners immediately on graduation, with the capacity to continue to learn and develop (Crosbie, 2002). The health professionals needed today and tomorrow must be more than competent practitioners, clinical scientists, problem solvers or reflective practitioners, demonstrating accountability and responsibility (Higgs, Hunt, Higgs & Neubauer, 1999).

The emergence of problems associated with the AIDS epidemic and the advent of extremely virile tuberculosis have challenged researchers and practitioners throughout the world (Moffat, 1996). As a result, social changes, both in Europe and worldwide, have had an impact on health and education policies (Broberg et al., 2003).

Today's graduates must be educated beyond the boundaries of the profession they are to enter (Higgs, Hunt, Higgs & Neubauer, 1999). As schools within universities, Physiotherapy education seeks to provide students with broad educational experiences, assisting them to develop generic skills such as independent learning, teamwork, responsibility towards other people, problem solving abilities and the like (Crosbie, 2002).

The purpose of a professional qualification in Physiotherapy is to supply PTs who are competent to render a professional service in health care, that is, who have the necessary knowledge, skills, professional thinking, behaviour, and attitudes to pursue the profession as PTs and managers in health care (Krause, Viljoen, Nel & Joubert, 2006). In recent years, there have been growing concerns about the real impact of health training programmes, at national level. For example, the declining quality of products from graduate programmes in Africa is already telling as evidenced, among other things, by frequent complaints by employers regarding the competence and ability of the graduates (Kabiru, Izugbara, Wambugi & Ezeh, 2010). Physiotherapy education, as part of the higher education sector, faces the expectation that our students will acquire not only discipline-specific knowledge and skills, but also a range of generic skills which are essential for professionals working within the constantly changing local and global work environments (Higgs, Hunt, Higgs & Neubauer, 1999). Physiotherapy has grown as a profession and the role of the Physiotherapist has changed (Krause, Viljoen, Nel & Joubert, 2006).

Physiotherapy graduates need to have skills and attributes relevant to their day-to-day practice to enable them to be confident and competent. They also need skills and attributes that will enable them to adapt to changes and develop professionally. This demands for a curriculum and teaching strategies that foster required skills and attributes in its newest graduates to ensure that they meet the needs of the community, thereby facilitating the ongoing development of the profession (Hunt, Higgs, Adamson & Harris, 1998). Physiotherapy graduates need to master skills such as problem-solving and clinical reasoning as well as the ability to assess and evaluate an individual's needs and communicate collaboratively with associated professions (Krause, Viljoen, Nel & Joubert, 2006).

The transition in Physiotherapy education from Diploma to Baccalaureate degrees saw a major shift in the structure and content of the curriculum in a bid to support the development of degree-level programmes. There was a shift from prescriptive syllabus of subjects to an outcomes-oriented set of learning objectives which, together, were felt to portray the knowledge, skills and attitudes desirable in a newly qualified physiotherapist (Bithell, 2007). Modules or courses of study at each year level are matched against the desired outcomes or competencies. Thus desired competencies form the framework of undergraduate degree programs in the schools of Physiotherapy (Skinner, 2007).

Many universities have identified desirable educational outcomes for their graduates and the educational curriculum prescribes the outcomes of the programs (Bithell, 2007). A competency-based approach to education specifies the health problems to be addressed, identifies the requisite competencies and allows the student to have an individual learning process (Frank, Mungroo, Ahmad, Wang, De Rossi, & Horsley, 2010). The exit-level outcomes of the programme entail the capabilities constituting the overall competence required of learners who have completed a four-year BSc degree in Physiotherapy (Krause, Viljoen, Nel & Joubert, 2006). The literature review showed that research about core competencies in PT is scarce. However, there are minimum standards describing the content of the PT curriculum.



Anticipated competencies to be demonstrated in Physiotherapy practice include cardiopulmonary, musculo-skeletal and neurological Physiotherapy (Bithell, 2007; Skinner, 2007). Accreditation Boards provide guidance as to what would be considered by the Board in accrediting a particular university course, including course content and learning outcomes (Blake, Cusalk, Doody & Hurley, 2007). On successful completion of a recognised programme, graduates should demonstrate their capacity to: use core skills within manual therapy, therapeutic exercise, understand the importance of assessment, clinical reasoning, problem-solving, goal-setting and evaluation (Krause, Viljoen, Nel & Joubert, 2006). Graduates should also have the ability to engage in research and evidence-based healthcare, manage a broad range of conditions, particularly those to do with the neuro-muscular, musculo-skeletal, cardio-vascular and respiratory systems and appreciate opportunities for specialisation after qualification (Bithell, 2007). Higher education providers are also implored to endeavor to develop courses that balance immediate postgraduate needs of the student with the development of the skills and attributes required for career progression (Kell, 2007).

### **2.3.2 Postgraduate Physiotherapy Education**

The United States of America (Johanson, 2005), New Zealand (Skinner, 2007), Australia (Mcmeeken, 2007), Sweden (Hager-Ross & Sundelin, 2007) and some African countries like South Africa (Frantz, Rhoda, Struthers & Phillips, 2010; Louw, Grimmer-Somers, Crous, Marais & Amosun, 2007) and Nigeria (John et al., 2012) offer Master's programmes in Physiotherapy. However, there is lack of empirical evidence particularly in Africa to determine whether these graduate programmes are producing the expected outcomes (Hunt, Higgs, Adamson & Harris, 1998). To determine if the expected outcomes of the standards and universities are being met, several researchers have suggested that universities should survey the employers of their graduates and the graduates themselves (Skinner, 2007; McMeeken, 2007).

Regional and professional differences exist in qualifications required for admission in a Master's programme. Studies have shown that Master's students access postgraduate studies with varying credentials (Drenman, 2008; Kell, 2006; Cooley, 2008). In the study by Drenman (2008), 30% of Master's students gained entry to their Master's programme without a Bachelor's degree.

Furthermore, Kell (2006) reported that Physiotherapy and Radiography candidates were accepted onto Master's programme if they possessed a degree or diploma in their area of study, a two-year post registration experience and evidence of continuing professional development. Thus Master's students' expectations and motivation for pursuing a Master's degree programme appear to reflect roots to professional qualification such as diploma versus degree. For instance, Cooley (2008) reported that nursing Master's students studied due to contextual factors such as the nursing education development into an all graduate profession, to be academically credible preceptors to the Bachelor of Nursing Science degree students and to be on par academically with the multi-disciplinary team.

Graduates seldom embark on postgraduate studies as a means of continuing professional development without giving it a thought or being motivated. This has prompted scholars to investigate motivations and expectations of graduates embarking on Master's level programmes. Studies have reported career enhancement (Calvert & Britten, 1999; Wilson & Wen, 2000; Tsimtsiou, Sidhu & Jones, 2010; Watkins, 2011), upgrading of knowledge and skills (Calvert & Britten, 1999; Petty, Scholes & Ellis, 2011; Watkins, 2011), attracted to learn about science (Watkins, 2011), improvement in clinical practice (Tsimtsiou, Sidhu & Jones, 2010; Petty, Scholes & Ellis, 2011) and accessibility and availability of the course (Watkins, 2011). Other motivational factors reported are the need to learn something new (Conneeley, 2005), personal development (Calvert & Britten, 1999; Wilson & Wen, 2000; Tsimtsiou, Sidhu & Jones, 2010) and desire to change job responsibilities (Wilson & Wen, 2000). Other motivations include perception of inadequacy or professional practical skills deficit (Perry, Green & Harrison, 2011) and professional inadequacy when compared themselves to colleagues (Cooley, 2008; Perry, Green & Harrison, 2011). Some nursing students enrolled to aid their professional development (Cooley, 2008) and gain access to a nursing specialty and to increase their employability against the future graduates of the Bachelor of Nursing Science degree programme.

### **2.3.2.1 Postgraduates' Perceptions of their Learning Outcomes**

There is reported evidence in medicine and allied health professionals that graduates at least apply some of their newly acquired competencies in the workplace.

The perceived outcomes reported in the scientific literature include; improved clinical reasoning, greater depth of clinical knowledge and practice, ability to use research skills, use of evidence-based practice, critical thinking, enhanced confidence, improved leadership skills and career growth.

### **2.3.2.1.1 Improved Clinical Reasoning**

Studies investigating outcomes of Master's degree programmes in manipulative therapy, reported improved levels of clinical reasoning (Rushton & Lindsay, 2010; Perry, Green & Harrison, 2011). Clinical reasoning is defined as a process of incorporating the elements of cognition, knowledge and metacognition (Higgs & Jones, 2000), and according to these authors, primacy is placed on patient-centred care as the context for clinical reasoning.

A study conducted by Stathopoulos and Harrison (2003), shows that the elements of clinical reasoning articulated by graduates of Physiotherapy Master's programmes, demonstrated similarities with models of expert reasoning, such as having a holistic view of a problematic situation (Stathopoulos & Harrison, 2003), which literature suggests is a cognitive ability of experts (Higgs & Jones, 2000). In their study conducted to determine the influence of a Master's programme on the participants' role, Green, Perry and Harrison (2008) reported that participants demonstrated development of their own clinical reasoning and the ability to facilitate the clinical reasoning of others. Similarly, studies conducted by Perry, Green and Harrison, (2011) and Petty, Scholes and Ellis (2011), on the impact of a musculo-skeletal Master's course and impact of Master's education in manual and manipulative therapy respectively, reported high levels of clinical reasoning among Master's graduates. The high level of clinical reasoning was identified as the most important behaviour associated with the construct for manual therapy (Rushton & Lindsay, 2010). The findings of previous studies, demonstrate that clinical reasoning was a common Master's programme outcome. However, all the studies cited in this section were conducted in developed countries and none in Africa. The apparent gap, therefore, justifies the need to evaluate similar postgraduate programmes in developing countries, and Africa in particular.

### **2.3.2.1.2 Greater Depth of Clinical Knowledge and Enhanced Clinical Practice**

Studies also demonstrate that Master's graduates exhibited greater depth of clinical knowledge following their postgraduate studies (Perry, Green & Harrison, 2011; Petty, Scholes & Ellis, 2011). The study by Perry, Green and Harrison, (2011) found that the overriding experience among participants was that the Master's course challenged their knowledge-base and thus restructured their cognition abilities thereby permitting advanced knowledge application. Further, the study by Petty, Scholes and Ellis (2011), reported development of clinical expertise, including such areas as, critical understanding of practice knowledge.

Further, the authors observed that criticality among postgraduates led to continual assessment, analysis and evaluation of patient management to ensure practice was effective for the patient.

The use of assessment choice to guide treatment choices, resulting in the freedom to create treatment techniques to suit both the Physiotherapists and patient was also evident (Petty, Scholes & Ellis, 2011). Further, a key component reported by postgraduates in a study by Rushton and Lindsay (2010), was the ability to make decisions regarding the further information required from the patient history and/or physical examination to complete the picture for individual patients. In this regard, the students described a move away from routine collection of all information. This improved clinical knowledge and enhanced assessment skills led to better clinical practice and ultimately, better job performance (Stathopoulos & Harrison, 2003; Whyte, Lugton & Fawcett (2000). Thus, participants' depth of understanding of knowledge of the principles underpinning practice enabled them to better manage patients with more complex and recurrent presentations (Davis, Sollecito, Shay, & Williamson, 2004; Murray, Judd & Snyder, 2001), as also reported by similar studies (Murray, Judd & Snyder, 2001; Le Bui, Nguyen, & Rotem, 2007) highlighting improved clinical skills following Master's training. While studies exist in this domain, little is documented on the impact or effectiveness of Master's programmes in Africa.

### **2.3.2.1.3 Ability to Use Research Skills**

Ability of graduates to use their research skills following postgraduate education exposure was reported by medical and allied health graduates including Physiotherapists (Le Count, 2004; Green, Perry & Harrison, 2008; Gijbels, O'Connell, Dalton-O'Connor & O'Donovan, 2009)

while a study conducted among mental health nurses graduating with an undergraduate Master's degree reported graduates' involvement in research (Stacey, Felton & Joynson, 2010). Graduates reported the publication of books or book chapters and conference presentations (Tsimtsiou, Sidhu & Jones, 2010; Richardson, MacRae, Schwartz, Bankston & Kosten, 2008; Schattner, Klein, Piterman, Sturmberg & McCall, 2007). Publication of brochures and audio video materials has also been reported among post graduates (Richardson, MacRae, Schwartz, Bankston & Kosten, 2008). In addition, Schattner, Klein, Piterman, Sturmberg and McCall, (2007) reported completed research projects and research grants. Previous studies show increased research activity among postgraduates following graduation.

#### **2.3.2.1.4 Engagement in Evidence-based Practice**

In addition to clinical competencies, Physiotherapy postgraduates have also reported use of evidence to inform practice. A study on impact of master's education in manual and manipulation therapy, reported that postgraduates became critical on courses, questioning their own and others' practice (Perry, Green & Harrison, 2011). Petty, Scholes and Ellis (2011) reported that participants were able to critically synthesise the evidence to inform their practice. Further, the authors indicated that participants were more able to engage in evidence-based practice through greater justification of clinical decisions using evidence from the literature.

At the same time, participants had become more critically evaluative of research and used research evidence more judiciously so that the decisions around assessment and treatment were more accurate and informed, based on the evidence (Petty, Scholes & Ellis, 2011). In their study, Rushton and Lindsay (2010) reported that participants engaged more on continuous process of prioritisation of issues for individual patients, based on the available clinical and empirical evidence. In addition, the criticality of participants enabled them to better understand conflicting evidence (Tsimtsiou, Sidhu & Jones, 2010). This was achieved through enhanced understanding of the importance of rigorous analysis of health evidence of varying types including patient-reported outcomes (Harris, Kinsinger, Tolleson-Rinehart, Viera, & Dent, 2008).

### **2.3.2.1.5 Critical Thinking**

Master's level study aims to develop critical and analytical thinking skills beyond Baccalaureate-level (Conneeley, 2005). Paul (1993 p.110) defines critical thinking or analysis as the “intellectually disciplined process of actively and skillfully conceptualizing, applying, synthesising, or evaluating information gathered from or generated by observation, experience, reflection or communication as a guide to belief or action.” Accordingly, in a study by Le Count (2004), nursing students pursuing a Master's-level course, reported increased ability to think critically.

The nurses reported that the Master's level programme made them think more critically in any situation, thereby being investigative to ensure the practice was based on strong evidence. Similarly, Conneeley (2005) reported that Physiotherapy and Occupational Therapy Master's students were able to apply skills in critical thinking, not only in relation to patient care but also in a broader context. Likewise, a ten-year follow-up study, conducted to explore the relevance of Master's preparation for the professional practice of nursing also reported enhanced ability to read ‘with critical analysis’, and to adopt a more in-depth approach to study and learning (Whyte, Lugton & Fawcett, 2000). Further, for all Master's graduates, the ability to demonstrate critical thinking was seen as one of the major shifts in their cognitive ability.

### **2.3.2.1.6 Enhanced Confidence**

High level confidence is one of the major perceived benefits of Master's level studies among Physiotherapists and other health professionals (Rushton & Lindsay, 2010; Gijbels, O'connell, Dalton-O'Connor, & O'Donovan, 2010). For example, Physiotherapy and Occupational Therapy postgraduates reported that confidence was something that they had translated into their personal and social lives. They further indicated that the Master's course had given them confidence, and made them feel like proper Physiotherapists and professionals in their own right (Conneeley, 2005). The author further reports that one theme that recurred throughout the focus group was that of confidence, relating to professional and personal confidence. In addition, Stathopoulos and Harrison (2003) reported that the participants also perceived the Master's programme as having a huge boost impact on their confidence.

They argue that the increase in confidence was mainly attributed to their enhanced ability in the workplace, their increased credibility in front of others and the sense of achievement that was developed as a result of their master's level study. Participants also perceived this confidence as providing motivation for development, and contributing to a general feeling of well-being in their professional and personal lives. Thus, the restoration of confidence and the reduction of threat, facilitate the development of effective practice in a multi-disciplinary environment.

Participants indicated that enhancement of self-confidence was a major contribution to their professional and personal development as a result of studying for the Master's degree (Green, Perry & Harrison, 2008). Perry, Green and Harrison (2011), reported that Physiotherapy postgraduates demonstrated confidence to apply for positions considered unachievable before the Master's course. In the practical domain, participants expressed enhanced confidence in taking on tasks that they would have previously considered beyond their capabilities. Participants also acknowledged an enhanced ability, and confidence, in interpreting and communicating at a higher level.

Further, the participants described an increase in their confidence, personally at home, with career progression at work, and professionally in communication skills (Perry, Green & Harrison, 2011), a finding also reported in studies outside physiotherapy (Calvert & Britten, 1999). In their study of the graduates' perspectives of an MSc in general practice, the authors found that the course had been an important source of re-invigoration, restoring participants' confidence both in themselves and in the importance and value of the work they do. Thus, Master's level studies may help to reduce attrition levels in physiotherapy if well implemented.

#### **2.3.2.1.7 Improved Leadership Skills**

Studies evaluating the outcomes and impact of Master's level postgraduate programmes in public health, medicine and occupational health report improvements in leadership skills. For example, the outcomes of five cohorts of occupational therapists who completed an online post professional Master's degree suggested that post professional graduate level education was effective in developing advanced leadership skills in Occupational Therapists and in facilitating a variety of professional contributions (Richardson, MacRae, Schwartz, Bankston & Kosten,

2008). In another study that investigated the impact of Master's of Family Medicine degree on general practitioners' career options, almost half of the respondents reported that the course gave them greater professional leadership skills, although this was not one of the Master's learning objectives and was not specifically dealt with during the course (Schattner, Klein, Piterman, Sturmberg & McCall, 2007).

The professional leadership roles assumed by Master's level trained cadres are dependent on many factors including rationale for undertaking a postgraduate programme. For example, in a study evaluating the effects of international collaboration for developing nursing graduate education in China, graduates described increased potential for leadership positions and the opportunity to influence nursing development in that country (Sherwood & Liu, 2005). Further, the author added that all Master's level educated graduates were employed in academic or practice leadership positions in China's major healthcare universities and affiliated hospitals. The graduates were the forerunners of the nursing education reforms and constituted a new generation of Chinese nursing leadership who set the stage for educating the new generation of nurses. Their responsibilities included writing new nursing textbooks in Chinese and introducing new approaches in clinical leadership thereby enhancing practice and ultimately improved patient care.



### **2.3.2.1.8 Career Growth**

Studies investigating effects of Master's programmes on careers of graduates, have reported improved career development (Tsimtsiou, Sidhu & Jones, 2010) as an effect of Master's level programmes, including specific job changes, such as promotions, new jobs, increased job responsibilities, a new role at a higher level and pursuit of higher qualifications such as Doctoral studies. Little has been found in literature on the career prospects of Master's-level trained Physiotherapists, except for one (Green, Perry & Harrison, 2008) which examined the influence of a postgraduate clinical master's course in manual therapy on career of Physiotherapists in the UK. In this study, the graduates from the Coventry University MSc manipulative therapy programme agreed that it was the status of the qualification that made them eligible for new roles, such as clinical specialist, consultant and academic.



Furthermore, studies conducted in other disciplines have identified Job promotions following completion of Master's programmes as reported in public health (Davis, Sollecito, Shay & Williamson, 2004; Le, Bui, Nguyen & Rotem, 2007), Nursing (Sherwood & Liu, 2005; Drennan, 2008), and Psychiatry (Gill, Turjanick, Bagherian, & Ali, 2005).

The study by Davis, Sollecito and Williamson (2004) reported that thirty-one percent of the Master's of Public Health (MPH) degree programme graduates had job promotions since graduating. In similar fashion, Le Bui, Nguyen & Rotem (2007) indicated that the percentage of alumni who had become head of the departments at institutions and head/deputy heads of institutions had increased. The authors added that the comparison before and after MPH training showed a clear trend that the MPH graduates had gained certain promotions after their graduation. The study recorded an increase in the proportion of alumni who worked for national and international organisations after MPH relative to those who worked for low level in health care (district and below). Further, findings from a study on professional and academic destinations of Master's level nursing graduates identified that the successful completion of a Master's degree in nursing had a positive impact on career and promotional prospects for graduates (Drennan, 2008), a finding also reported among graduates of a Master's degree in Psychiatry Rehabilitation who joined leadership roles as supervisors, managers and educators after graduating (Gill, Turjanick, Bagherian, & Ali, 2005). Similar findings have also been reported by Wilson and Wen (2000) who conducted a study on the influence of a Pharmacy Master's degree on graduates and reported that 60% of respondents had received a promotion after completing their programme.

Other Master's level graduates reported increased job responsibilities through participation in a variety of professional activities, suggesting that Master's level programmes are effective in facilitating a variety of professional contributions (Richardson, MacRae, Schwartz, Bankston & Kosten, 2008). While some graduates of a Master's of Nursing programme reported assuming other roles upon completion of the programme. Participants reported involvement in nursing education through assisting with translation of nursing books from English to Chinese and lecture presentations. Further, some nursing participants reported matriculating into Doctoral degree programmes (Le Count, 2004; Sherwood & Liu, 2005) or an appointment in a position where a master's degree was required (Cragg & Andrusyszyn, 2005; Sherwood & Liu, 2005).

### **2.3.3 Perceived Impact of Master's Degree Programmes on Health Sector and Society**

There is little in the published literature on impact of Physiotherapy Master's programmes on the health sector or on society. One such study conducted to describe the outcomes of educational collaborative projects between China and the United States, reported development of the nursing profession in China and subsequent introduction of local baccalaureate and Master's programmes (Sherwood & Liu, 2005). In other studies, graduates from Master's level programmes in Occupational Therapy reported launching community programmes, developing hospital and clinic programmes (Richardson, MacRae, Schwartz, Bankston & Kosten, 2008). To the contrary, a systematic review on the impact of post-registration nursing and midwifery education, reported limited evidence of benefit of Master's level education to patients and care givers (Gijbels, O'Connell, Dalton-O'Connor & O'Donovan, 2009)

In a rapidly changing world, it is important for universities to supply human capital fit for purpose (Barnitt & Salmond, 2000), thus universities are duty bound to ensure they produce graduates with capacity to meet the ever changing needs of today's communities. This can be realised by designing and implementing educational programmes appropriate for the needs of stakeholders such as employers and the communities they serve (Ramli, Nawawi & Chun, 2010).

In discussing the impact of Master's level studies on health sector and society, studies have shown that majority of employers of Physiotherapy Master's graduates, value clinically-based Physiotherapy Master's courses more than research (Yardley et al., 2008). The author further reported that the employers appeared more willing to allow time off for clinical training than for research. A clinical Master's degree in Physiotherapy is a postgraduate degree focusing on advanced clinical skills and evidence-based practice, rather than on preparation for a research career (Sran & Murphy, 2009), as is the case for research Master's degrees.

Most participants completing Master's programmes do it to improve clinical knowledge and practice with the goal of improving client outcomes (Chartner, et al., 2007). Like in the UK, fostering clinical competencies at Master's-level may enable Physiotherapy specialists to be as effective as physicians with respect to client outcomes leading to reduced initial hospital costs and greater client satisfaction (Daker-White, 1999). Further, clinical specialisations in the UK, have led to Physiotherapy extended scope practitioners with advanced orthopedic training such as clinical specialists and advanced practitioners (Daker-White, 1999). In addition, clinical Master's programmes in Physiotherapy may provide a career structure or pathways for Physiotherapy practice, including such areas as pediatrics, neurosciences and gerontology (Sran & Murphy, 2009). According to these authors, graduates of clinical postgraduate degree programmes would be recognised as clinical specialists, acting as great resources and educators to students and peers in order to achieve a high standard of patient care.

A study by Yardley et al. (2008), reported that employers preferred clinical specialists or advanced practitioners because they felt that having a specialist on staff would improve client outcomes and increase client satisfaction. In another study, employers cited applying theory into practice as the most important employability skill (Ramli, Nawawi & Chun, 2010). Conversely, Ohman, Hagg and Dahlgren (2005), reported that graduates' clinical hands-on skills and treatment techniques were regarded to be rather poor due to emphasis on theoretical knowledge and research methods in most Physiotherapy curricula. This finding was akin to the outcomes reported in a study conducted among Occupational Therapy graduates (Barnitt & Salmond, 2000), which reported a gap between theory and practice. The authors indicated that the lack of practical hands on experience among Occupational Therapists graduates could have been as a result of the predominance of theory over practice in the training programmes.

Thus, it appears the clinical component and the ability to apply theory to practical situations is a key competency that must be prioritised in Physiotherapy Master's level training.

Literature addresses the impact of health-related Master's degree programmes on graduates' career development, workplace and society at large.

Studies have demonstrated the perceived specific and generic outcomes of health-related Master's programmes including Physiotherapy. However, the majority of such studies are conducted in developed countries and virtually none in Africa, as evidenced in a systematic review conducted by Zwanikken, Dieleman, Samaranayake, Akwataghibe and Scherpbier, (2013) which reported only one study conducted in a low-income country, Vietnam. Thus the apparent gap in literature reaffirms the need to evaluate Master's level educational programmes in Africa in order to ascertain their effectiveness and impact on the communities they are designed to serve.

## **2.4 PROGRAMME EVALUATION**

Programme evaluation (PE) is not a new phenomenon. According to Madaus, Scriven and Stufflebeam (1983), it has an interesting history that predates 150 years. The authors claim that, Ralph W. Tyler had enormous influence on educational evaluation between the 1930s and 1940s, a period they refer to as the Tylerian Age. Programme evaluation was conceptualised by Tyler as a comparison of intended outcomes with actual outcomes and remained the mainstay of American educational evaluation theory for over 30 years. Accordingly, the Tylerian evaluation involves internal comparisons of outcomes with objectives. Tyler's PE approach calls for the measurement of behaviourally defined objectives and hence its concentration on learning outcomes instead of organisational and teaching inputs. Subsequently, in the late 1960s, Daniel Stufflebeam developed what is known as the CIPP evaluation model as an alternative to the views about evaluations that were prevalent at that time.

There many definitions of programme evaluation in the literature. Evaluation is broadly defined as the collection and use of information to make decisions about an educational programme (Cronbach, 1983). The well-known definition originated by Ralph Tyler perceives evaluation as "The process of determining to what extent the educational objectives are actually being realized" (Tyler, 1983).

Another widely accepted definition of evaluation has been that of providing information for decision making (Nevo, 1983). An educational evaluation study is one that is designed and conducted to assist some audience to judge and improve the worth of some educational object (Stufflebeam & Webster, 1983).

Programme evaluation is the systematic collection of information for the purpose of determining the extent to which programme objectives have been met (Wall & Solutions, 2014). Overtly, these definitions assume the existence of explicit, measurable objectives. It is also clear that words and phrases like; systematic collection, decision-making, programme objectives, judge and improve emerged from these definitions. Against this background, the researcher defines programme evaluation in the context of this study as the systematic assessment of the implementation and outcomes of an educational programme through the collection and analysis of data on programme context, input, process and product in order to make informed decisions that lead to either improvement or maintenance of the programme.

#### **2.4.1 Educational Programme Evaluation Model: Context, Input, Process and Product (CIPP)**

There are various models designed to guide educational evaluation such as Stufflebeam's (1971) CIPP. CIPP is an acronym for Context, Input, Process and Product (Abdishahshani, Ehsanpour, Yamani & Kohan, 2014) and was necessitated by the inadequacy of the Tylerian evaluation rationale (Tyler, 1942) resulting from its focus on behavioural objectives and student performance (outcomes). Stufflebeam (1983) argued that the assumption that evaluators know or could easily determine what student behaviours should result from a course is far from realistic. Further, Stufflebeam (1983) proposed that evaluation be redefined as a process of providing useful information for decision-making. The re-conceptualisation of evaluation included process evaluation to guide implementation, and product evaluation to serve recycling decisions. Process evaluation was a relatively new entry in the lore of educational evaluation while product evaluation was akin to what Tyler (Tyler, 1942) had meant by evaluation per se.

Thereafter, context evaluation was added as a means of servicing planning decisions, including programme objectives. However, there was an obvious gap in the model, since it did not consider decisions that are required in specifying what means are required to achieve a given set of goals, or a set of assessed needs, it was proposed that they be serviced by input evaluation, which are studies that identify and assess the relative merits of alternative programme designs.

Thus, the CIPP is based on the view that the most important purpose of evaluation is not to prove but to improve (Stufflebeam, 1983; Ho et al., 2011). It is a move against the view that evaluations should be “fault finding” or “witch hunts” or only instruments of accountability. Instead, the CIPP model views evaluation as a tool by which to help make programs work better for the people they are intended to serve. While Stufflebeam and his colleagues were developing the CIPP framework, Stake (1967) was developing the Countenance of Evaluation approach. Like the CIPP, the Countenance of Evaluation model calls for describing the intended antecedents (what needs to be in place before a programme is operational), transactions (activities and outputs) and outcomes of a programme, then findings of the programmes are compared to the intended outcomes of the program as well as to standards set for such a programme (Cooksy, Gill & Kelly, 2001). The consistency between the CIPP and Countenance frameworks is considerable, but there are also some notable differences. Both approaches called for assessment of outcomes, but Stake emphasised the need to search for side effects as well as intended effects, which was an excellent recommendation that has since been incorporated in the CIPP’s product evaluation (Cooksy, Gill & Kelly, 2001). Stake’s provision for observing and analysing “transactions within a project” was similar to process evaluation in the CIPP. While Stake provided no equivalent for input and context evaluation, it could be assumed to be covered in his provision for identifying and assessing “antecedent conditions” (those that existed before the project started and before the evaluator entered the scene). Both approaches emphasise the improvement function of an evaluation.

Finally, the CIPP approach looks at whether the assessed needs have been met as a basis upon which conclusions about the success of projects are formed (Ho et al., 2011), whereas in Stake’s approach, conclusions are derived by collecting and analysing judgments from all stakeholders. Notwithstanding the successes of both the Countenance and CIPP approaches, Scriven (1970) offered a fairly sharp contrast to both approaches. He defined evaluation as the systematic and objective determination of the worth or merit of an object.

He called his approach, summative evaluation and argued it was fundamentally more important than formative evaluation, in which an evaluator collects and reports data and judgments to assist the development of an object.

On this basis, Scriven (1970) charged that the CIPP approach was flawed because it almost totally ignored the fundamental role of summative evaluation, due to its preoccupation with fostering improvement. However, these seemingly varying views of evaluation highlighted by Scriven (1970), were more apparent that real and mainly reflected different perspectives and experiences (Stufflebeam, 1983). This is so because, context, input, process, and product evaluations may be used both to guide decision-making, the formative role, and to supply information for accountability, the summative role (Ho et al., 2011). Apparently, the use of the CIPP approach, calls for a more comprehensive assessment of a project than was embodied in the outcomes oriented Tylerian rationale (Tyler, 1942). The CIPP also embodies both Stake's (1967) and Scriven's (1970) evaluation perspectives. Relative to Stake (1967) and Scriven's (1970) orientations, the CIPP is inclined more towards a systems view of education and focuses more on providing ongoing evaluation services to the decision makers in an institution (Ho et al., 2011). Though the CIPP does not necessarily lead to the formulation of hypotheses, it does provide a rich collection of background data against which to interpret and understand outcomes (Stufflebeam, 1983). Thus, the current study is anchored on the CIPP theoretical framework as a guide for evaluation of a postgraduate Physiotherapy Master's programme. The model will be used in the context of theory-based evaluation as it is a typical procedure of theory-based evaluation approach (Cojocar, 2009). A detailed description of the theory is rendered in chapter one.

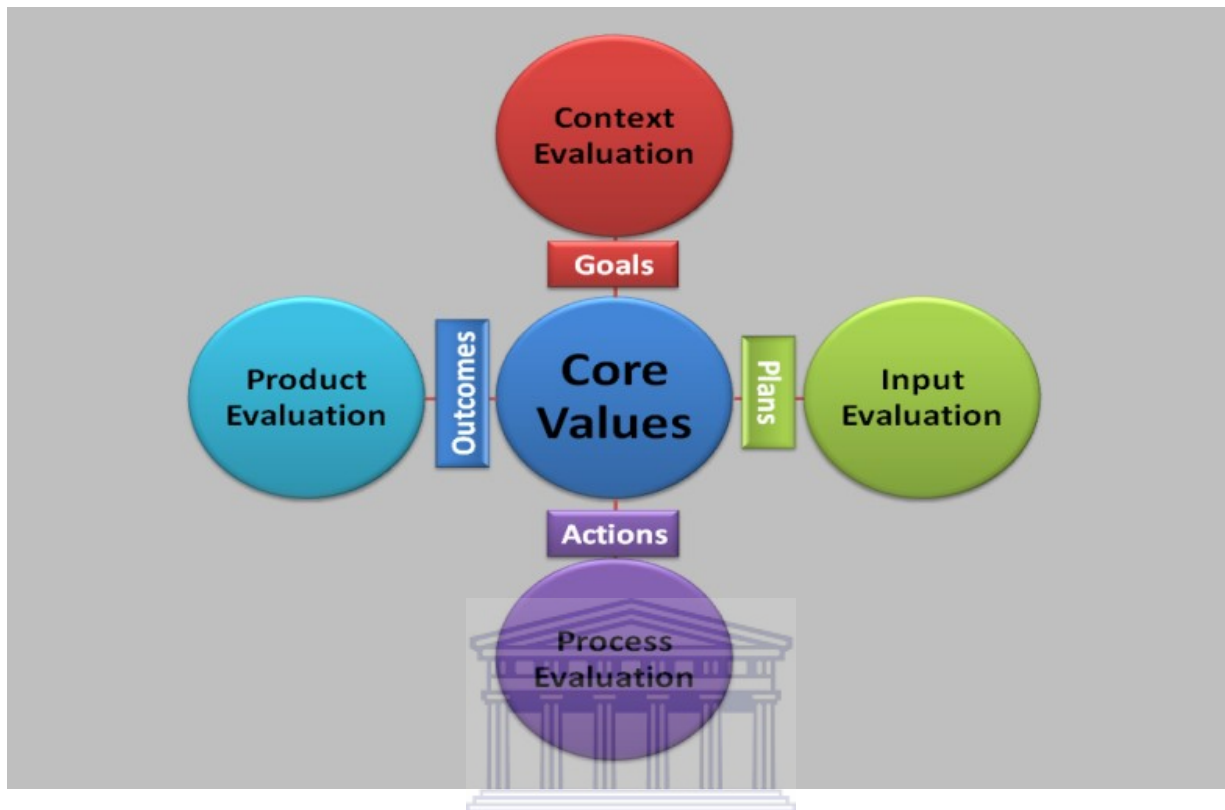


Figure 2.0.1 The CIPP Evaluation model

## 2.5 SUMMARY OF CHAPTER TWO

The chapter presented a review of literature on higher education, international education, quality of higher education, Physiotherapy education, perceived outcomes of Physiotherapy Master's level education relative to anticipated outcomes of the programme and the CIPP evaluation model as chief model used in this study in the context of theory based evaluation. In this chapter, the researcher presents the emergence of higher education globally and Africa in particular. Then internationalisation of higher education and its role in today's global village is rendered so as to contextualise the study as the programme under evaluation is an international one, servicing DTPs mostly from but not limited to Zambia, Malawi, Tanzania, Rwanda and Kenya for the last 20years.



The literature highlights gaps that exist in the area of international education as it relates to graduates' and employers' perceptions of the impact of international training programmes on sending countries within Africa. The absence of studies on impact of international programmes is obvious as majority of the studies were conducted in developed countries. Further, literature on Physiotherapy education and specifically the evolution of Physiotherapy education from Diploma to Baccalaureate degrees and subsequently, higher degrees is almost non-existent in Africa. Conversely, a wealth of literature on Physiotherapy education in Australia, New Zealand, the United States of America, and countries that make up the United Kingdom, among other developed countries, is presented. Details regarding the evolution of Physiotherapy education in the said countries from Diploma to Baccalaureate and the resultant curricula changes are presented. However, transitional models for Physiotherapy education from Diploma to Baccalaureate credentials were absent in literature, save for Singapore's well reported one-year conversion programme. Thus, the literature reviewed provide ample evidence that there is need to periodically conduct Physiotherapy educational programme evaluations with respect to the needs of African PTs, their employers and the communities they serve. It is also imperative to ensure Physiotherapy educational conversion models, facilitating the conversion of DTPs to Baccalaureate credentials are yielding the intended results. The next chapter presents the methodological framework of the current study by detailing the research design used as well as the data collection and handling process.

## **CHAPTER 3**

### **METHODOLOGY**

#### **3.1 INTRODUCTION**

In this chapter, the qualitative methodological framework, within which a theory-based evaluation (TBE) approach was used, is presented. The chapter offers a detailed outline of the research design that utilised different data collection methods targeting multiple data sources. First, individual interviews were conducted to describe the context of the UWC BSc (Hons) and Master's programmes from the perspective of programme designers (PDs) and lecturers (key informants). In addition, official documents were reviewed to supplement individual interviews with key informants in describing the context and inputs of the UWC BSc (Hons) and Master's postgraduate programmes. Furthermore, individual interviews were held with the UWC postgraduates, followed by individual and focus group discussions with students of UWC graduates employed as lecturers in their respective countries. An account of qualitative data analysis using Atlas.ti is presented, followed by a list of themes and subthemes that were generated in this study. This chapter ends with ethical considerations before and during the course of data collection.

#### **3.2 RESEARCH SETTING**

The birth and development of the Physiotherapy education in Africa was presented in the previous chapter. This section provides more context to the current study in terms of the state of Physiotherapy education in East and Southern African countries namely; Kenya, Rwanda, Tanzania and Zambia. Prior to the year 2000, these countries provided mostly Physiotherapy education at diploma level. These African countries offered a three-year diploma programme in Physiotherapy and they each had only one training institution.

Following a study conducted in ten (10) African countries (Botswana, Egypt, Ethiopia, Kenya, Lesotho, Malawi, Swaziland, Tanzania, Zambia and Zimbabwe) by the African Rehabilitation Institute (ARI) in 1988 (Appendix A), it was recommended that DTPs in eight of the ten African countries that participated in the study be upgraded to degree status. With the exception of Egypt and Zimbabwe, the rest of the countries only had diploma programmes. The need for diploma programmes to convert to degree status was necessitated by the training needs of DTPs identified by the ARI. However, due to a lack of financial and human resources, none of the eight African countries managed to introduce a degree programme in their universities or colleges.

In response to calls for Physiotherapy educational reforms in Africa, UWC in South Africa developed a one-year bridging programme to enable DTPs to convert from a diploma to BSc (Hons) degree status, followed by a one-year Master's degree in Physiotherapy. The rationale behind the Master's degree was to empower participants with credentials necessary for university employment as lecturers, with the view of opening Physiotherapy degree programmes in their respective countries. Thus, Kenya, Rwanda, Tanzania and Zambia were purposively selected as the setting for this research as these countries have been sending DTPs to South Africa, for the UWC BSc (Hons) and postgraduate Physiotherapy Master's programmes (Frantz, 2007) for the past decades (Louw et al., 2007). The products of UWC now serve their respective countries in various sectors, including health, sport and education. To this end, two universities and three hospitals were selected from Zambia while two hospitals were selected in Tanzania, two universities and a clinic was selected in Kenya while two hospitals and one university were selected in Rwanda. The particular institutions were purposively selected because they had Physiotherapy departments in which graduates of the UWC Master's programme were employed. The research settings are illustrated in table 3.1 below

<b>Country</b>	<b>University</b>	<b>Hospital</b>
Zambia	2	3
Tanzania		2
Kenya	2	1
Rwanda	1	2

Table 3.1 Research settings

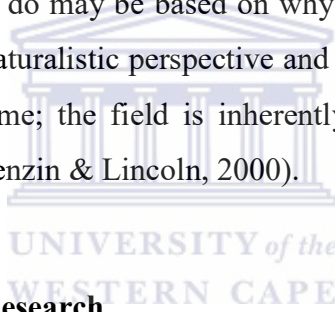
### **3.3 RESEARCH DESIGN**

The dissertation will use an explorative and descriptive theory-based evaluation approach using qualitative research methodology. The steps involved in the research process determined the choice and use of the qualitative methodology. The researcher had to search for the best data to develop and test out theories (Weiss, 1997). The use of qualitative methods was undertaken to provide a comprehensive analysis of the research problem as described by Creswell (2014) and aid users in developing knowledge about managing a targeted set of activities (Scheirer & Schwandt, 2012). Initially, administrative document reviews and in-depth interviews with UWC BSc (Hons) and Master's programme designers and lecturers were conducted to help develop and test the programme theory and measuring instruments (interview guides). Secondly, graduates and their workplace supervisors were interviewed to establish and test the implementation process theory. Then focus group discussions with graduates' students were undertaken to measure the impact of the UWC postgraduate Physiotherapy Master's programme. A variety of methods appropriate for the different steps or stages of the programme were employed so as to ensure this evaluation exercise becomes an integrated function in which data are continuously collected and used for decision-making and programme improvement (Scheirer & Schwandt, 2012). Multiple types of data were collected to inform each phase.

#### **3.3.1 Qualitative Approach**

Qualitative research refers to that generic research approach in social research according to which research takes as its departure point the insider perspective on social action (Babbie & Mouton, 2001). It begins with an intention to explore a particular area, collects "data" (observations and interviews), and generates ideas and hypotheses from these data largely through what is known as inductive reasoning (Greenhalgh & Taylor, 1997).

Qualitative research typically involves highly detailed rich descriptions of human behaviours and opinions (Bowen, 2009). Qualitative researchers value the actor's ("emic") perspective (Babbie & Mouton, 2001). They seek to understand the world from a participant's point of view, by listening to or observing a person in a natural environment (Miller & Alvarado, 2005). In this sense, the term "natural" embodies a set of assumptions about research that is the exact opposite of the quantitative approach that emphasises control and artificial settings (Babbie & Mouton, 2001). In fact, one identifier of a qualitative research is the social phenomenon being investigated from the participant's viewpoint (Williams, 2007). Qualitative researchers attempt always to study human action from the perspective of the social actors themselves (Babbie & Mouton, 2001). Seeing and talking to people within their context is a major characteristic of qualitative research (Creswell, 2014). The perspective is that humans construct their own reality, and an understanding of what they do may be based on why they believe they do it. Qualitative researchers are committed to the naturalistic perspective and to the interpretive understanding of human experience, at the same time; the field is inherently political and shaped by multiple ethical and political allegiances (Denzin & Lincoln, 2000).



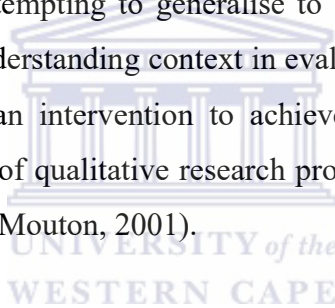
### **3.3.1.1 Strengths of Qualitative Research**

“Qualitative research methods enable health sciences researchers to delve into questions of meaning, examine institutional and social practices and processes, identify barriers and facilitators to change, and discover the reasons for the success or failure of interventions” (Starks & Trinidad, 2007).

The strength of good qualitative research lies in validity (closeness to the truth) using a selection of data collection methods (Devetak, Glažar & Vogrinc, 2010). The use of a combination of research methods greatly improve the validity of qualitative research, a process known as triangulation, and by independent analysis of the data by more than one researcher (Greenhalgh & Taylor, 1997). Triangulation is a strategy enabling researchers to understand the observational object significantly better and in a more comprehensive manner.

The triangulation of investigators, data sources, methods and/or disciplines, provides for the exhaustive data interpretation. Triangulation is used as an alternative to validation (Devetak, Glažar & Vogrinc, 2010). The current study employed both triangulation of data sources (programme documents, UWC Master's programme designers, programme implementers, postgraduates, workplace supervisors of UWC postgraduates and students of UWC postgraduates) and data collection methods (document reviews, in-depth interviews and focus group discussions).

The depth of the insight and the rich data that can be gained from the participants is another strength that consistently emerges in the literature. Babbie and Mouton (2001) contend that the primary aim of qualitative research is in-depth (“thick”) descriptions and understanding of actions and events. They further argue that understanding the social action in terms of its specific context is more important than attempting to generalise to some theoretical population. In his discussion of the importance of understanding context in evaluation studies, White (2009) argues that contextual factors can help an intervention to achieve its objectives or act against the intervention. The inductive nature of qualitative research process leads to the generation of new hypothesis and theories (Babbie & Mouton, 2001).



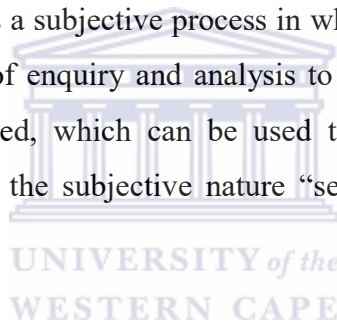
### **3.3.1.2 Weaknesses of Qualitative Research**

The major weakness that has emerged in the literature is the researcher as key data collection and possibly subjective instrument (Babbie & Mouton, 2001; Doyle, Brady & Byrne, 2009). Creswell (2014) observes that though the researchers may use a protocol or interview guides, they are the ones who actually gather the information. The aforementioned reasons make the researcher a participant in the phenomenon being studied and may influence what data is collected and reported, or not reported and to some extent unavoidably influence the final discussion by his or her own worldviews (Johnstone, 2004). Secondly, Creswell (2014) cautions that qualitative researchers should focus on the meanings that the participants hold about the problem or issue, not the meanings that the researchers bring to the research or that writers express in the literature.

While it is accepted that all qualitative has a subjective aspect and influenced by the researcher due to the researcher's central role during data collection, including the researchers' assumptions and perspectives, this is not generally acknowledged as being a part of quantitative research (Babbie & Mouton, 2001). Nevertheless, all research, qualitative and quantitative is linked to our attitudes and our socialisation.

It could thus be argued that by acknowledging this subjective element, and the effect of the individual in the interpretation of the findings, in addition to bringing the voices of the participants to be present in the findings through their words, the trustworthiness is strengthened and it may no longer be seen as overly subjective. Thus the researcher needs self-awareness throughout the process.

In summary, qualitative research is a subjective process in which the researchers use a variety of theoretical frameworks, methods of enquiry and analysis to gather and interpret their findings. The rich data that can be gathered, which can be used to interpret social experiences, are considered its strength. However, the subjective nature "seeing through the eyes" of another person needs to be recognized.



### **3.4. PHASE 1: CONTEXT**

In the first phase of the study, the researcher set out to describe the context of the UWC BSc (Hons) and Master's programmes by means of document analyses and interviews with PDs and lecturers (implementers). Secondly, the researcher sought to identify and describe the programme objectives, goals and anticipated learning outcomes. This led to the development of a programme theory based on UWC official documents and in-depth interviews with PDs and lecturers prior to conducting the evaluation. The need to describe the context of the programme was in line with the first objective of the current study. Context evaluation is a means of servicing planning decisions, including programme objectives. The development of the UWC programme theory prior to commencement of evaluation was necessary to enable the researcher plan what was to be evaluated so as to establish the level of compliance to the programme theory from a consumer perspective in subsequent phases. The information gathered in this phase, guided the development of interview guides used in subsequent phases of the study.

### **3.4.1 Population and Sampling**

#### **3.4.1.1 University of the Western Cape and ARI Documents**

Prior to conducting in-depth interviews with PDs and lecturers, official programme documents were reviewed. According to de Vos, Strydom, Fouché and Delpont, (2011), official documents imply those that are compiled and maintained on a continuous basis by organisations such as government institutions. The aim was to describe background information and understand the historical roots of the programme under evaluation. It was also to track changes and development of the postgraduate programmes by comparing annual reports to identify the changes. Documents were also used to supplement data from in-depth interviews and also to verify findings and corroborate evidence from the said in-depth interviews. Thus, the following documents were purposively sampled from a population of UWC official documents as they were deemed most important in providing adequate information about the programme being researched (de Vos, Strydom, Fouché & Delpont, 2011):

1. The UWC BSc (Hons) and Master's programmes module descriptors
2. Faculty of Community and Health Sciences (CHS) annual reports (2002, 2005, 2006, 2008, 2009, 2010, 2011 and 2012)
3. African Rehabilitation Institute (ARI): Syllabus for Physiotherapy training in Africa (1988)

##### **3.4.1.1.1 Data Collection Procedure**

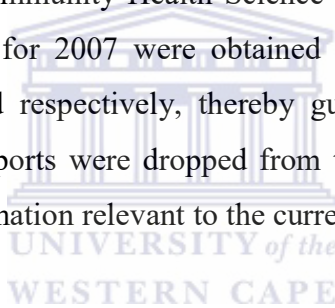
The collection of relevant documents involved seeking clearance from the office of the UWC Registrar (Appendix B) and explaining the purpose of the documents. It also involved presenting the clearance letter to the Department of Physiotherapy and the Faculty of Community and Health Sciences in order to have access to the documents.



Other documents such as the African Rehabilitation Institute Report (Appendix A) were obtained from one of the PDs and this involved a phone call and request for an appointment as the PD had left UWC and was employed in another university.

#### **3.4.1.1.2 Evaluation of Documents**

The credibility and reliability of the ARI document was primarily tested by interviewing the UWC PDs, as they were knowledgeable on the development of the programme under evaluation. Thus, the researcher compared data obtained from the two sources for consistency (de Vos, Strydom, Fouché & Delpont, 2011). Interestingly, the PDs kept referring to some of the documents during the in-depth interviews, an indication that the contents of the reports were credible and valid. The annual Community Health Science (CHS) reports and the BSc (Hons) and Master's module descriptors for 2007 were obtained from the offices of the Dean and Physiotherapy Departmental Head respectively, thereby guaranteeing the authenticity of the documents. However, the CHS reports were dropped from the list following evaluation as the researcher did not find much information relevant to the current study.



#### **3.4.1.1.3 Document Analysis**

A Checklist (Appendix C) was prepared to guide the review of documents for consistency. In the analysis of documents, the researcher used an inductive thematic content analysis strategy (Bowen, 2009). According to Miller and Alvarado (2005), this process consists of reading through textual data, identifying themes in the data, coding the themes, and then interpreting the structure and content of the themes. The textual analysis was appropriate for the interpretive tradition used in the current study as it emphasised more on interpreting the meaning the document had than frequency of occurrences (de Vos, Strydom, Fouché & Delpont, 2011). The analysis of the UWC postgraduate Physiotherapy Master's training records provided information on the history, goals, objectives, and substantive content. The analysis further sought to identify the historical background of UWC and the Department of Physiotherapy in particular. During the review, the researcher asked some questions to UWC lecturers and curriculum developers on the meaning attached to some texts in the documents.

Information contained in the documents, like UWC anticipated postgraduate Physiotherapy Master's training outcomes informed the development of the interview guides for both UWC PDs (Appendix D) and postgraduates (Appendix E). This demonstrates how documents and semi-structured interviews complement one another in an interactive way.

### **3.4.1.2 Programme Designers and Lecturers**

The study population also included UWC Physiotherapy Master's PDs and lecturers (key informants). The UWC postgraduate Physiotherapy Master's programme was developed by four pioneers of Physiotherapy graduate and postgraduate training at UWC. The pioneers included a Nigerian, a Zimbabwean (late) and two South Africans.

Thus, all three surviving PDs were included in the study as the researcher saw no need to sample owing to the small number of PDs. The selection process of the surviving PDs involved consultations with one of the PDs who at the time of the study worked as a part time lecturer at the UWC. In the quest to develop the programme theory, the researcher sought to involve key participants who could contribute to the evolving theory and this could only be those who had actively participated in developing and implementing the programme under evaluation.

Furthermore, aside from the PDs, the researcher purposively sampled two senior lecturers in the department of Physiotherapy to participate in the first phase of the study. The lecturers were selected based on their vast experience in delivering the UWC physiotherapy upgrade programs for diploma-holding physiotherapists. This therefore implies that, the key informants were selected based on the judgement of the researcher (Babbie & Mouton, 2001) and the purpose of the first phase of the study.

#### **3.4.1.2.1 Data Collection Procedure and Methods**

A list of names and contact details of the two PDs was obtained from the Department of Physiotherapy, while the two senior lecturers could be accessed within the department. At the time of the study, one of the three PDs had moved to another university, while the other two had retired. The process then involved a phone call to each of the PDs explaining the purpose of the study followed by a letter (Appendix F) explaining what would happen in the in-depth interview and then followed by emailing of an information sheet (Appendix G), a consent form (Appendix H) and an interview guide (Appendix D).

The researcher then requested for an appointment from each key informant and in-depth interviews had to be conducted using a venue convenient to the participant. In-depth interviews, sometimes referred to as semi-structured interviews are defined as those organised around areas of particular interest, while still allowing considerable flexibility in scope and depth (de Vos, Strydom, Fouche & Delpont, 2011). This form of interview is ideal for obtaining comprehensive and comparable data. In this study, a semi-structured interview guide (Appendix D) was developed to guide the interviews. The researcher used in-depth interviews to gain a detailed understanding of the context of the UWC BSc (Hons) and Master's degree programmes. A total of five audio-recorded face to face semi-structured interviews were conducted in this study. The interviews lasted between 32 minutes and over an hour in duration.

#### **3.4.1.2.2 Data Analysis**

All interviews were audio-recorded and transcribed. Transcription of interviews was done by an independent person and the researcher read through the transcript several times to familiarise himself with emerging themes and identify emerging themes relative to the objective of the study. This iterative process was followed by coding of the transcripts using Atlas.ti version 7. After all the transcripts were coded, code families were formed which meant identifying and categorising similar codes in one family called, code family, this resulted into four themes. Then thematic analysis technique was used to analyse the data.

Thematic analysis is a method for identifying, analysing and reporting patterns or themes within data (Braun & Clarke, 2006). Data analysis occurred concurrently with data collection (Rabiee, 2004). Initial interviews were analysed to guide subsequent data collection (de Vos, Strydom, Fouche & Delport, 2011). The information was examined to identify new issues to be explored in subsequent interviews. The key informants supplemented the information gathered from the UWC official documents on the background of the UWC BSc (Hons) and Master's programmes. They offered relevant information that enabled the researcher to describe and understand the programme context and inputs. The explanations and description of key informants was a knowledge resource in drawing the UWC postgraduate Physiotherapy programme theory.

### **3.5. PHASE 2: PROCESS**

While Phase one tried to understand what the UWC BSc (Hons) and Master's model was and what insiders (key informants) said it would do, this phase investigated the compliance to the programme theory from a consumer perspective. In this part of the study, the researcher sought to explore the postgraduates' perceptions of their educational experiences in the UWC BSc (Hons) and Master's programme. This entailed exploring the learning experiences of the graduates at UWC. The phase sought to document the implementation process of the UWC postgraduate programmes, thereby generating a programme implementation process theory from the perspective of the graduates and was explored relative to the first phase to establish whether the programme implementation was according to the programme theory. The second phase therefore served a formative purpose in the evaluation process to generate information on student learning which might be used by faculty to improve teaching and learning strategies.

#### **3.5.1 Population and sampling**

##### **3.5.1.1 UWC postgraduates**

UWC postgraduates practicing in Zambia, Tanzania, Kenya and Rwanda constituted the population of the study. The selection of graduates involved consultations with PhD and Master's students from the named countries as all the countries involved were represented by at least a PhD or a Master's student at the Department of Physiotherapy.

The students listed the names, work places and contact details of some of their colleagues with a UWC postgraduate Physiotherapy Master's degree in their respective countries. Then a contact person for each country was selected to help with mobilisation of their colleagues in their respective country. The contact person was selected based on their availability and willingness to assist with mobilising their colleagues. The total number of UWC postgraduates identified was seventy-six (76), out of which the researcher managed to obtain contact details (e-mail address and/or cell phone number) for fifty-three (53) postgraduates. All postgraduates were contacted through snowballing sampling technique but only twenty-three (23) responded within a month. The process was repeated more than once and yielded two more potential participants. Furthermore, when the researcher visited the countries, the focal point persons helped to identify some more postgraduates in their respective countries, though only two were added to the twenty-five (25) to make twenty-seven (27). Others were either on holiday or had left their countries for further studies. This sampling method was appropriate because it was not easy for the researcher to locate the UWC postgraduates in their respective countries (Babbie & Mouton, 2001), hence the dependency on available postgraduates. The researcher implemented the interviews in the following order; Zambia, Tanzania, Kenya and finally Rwanda. At the time of the study, graduates were either employed by a university, hospital or were self-employed. Following ethical clearance by participating countries, an appointment with participants was sought and a date that suited individual participants was decided on. All participants were served with an information sheet, consent form and an interview guide before the interviews. All interviews were conducted in the graduates' respective countries except for three participants who were pursuing their PhD studies at UWC at the time of the study and Rwandan participants who could not be followed up due to monetary constraints. Finally, to eliminate plausible alternative explanations for the perceived relationships, graduates with a Master's degree other than the UWC one were not included in the study.

### **3.5.1.2 Data Collection Methods: In-depth Interviews**

In-depth interviews, sometimes referred to as semi-structured interviews are defined as those organised around areas of particular interest, while still allowing considerable flexibility in scope and depth (de Vos, Strydom, Fouche & Delport, 2011).

This form of interview is ideal for obtaining comprehensive and comparable data. In this study, a semi-structured interview guide (Appendix E) was developed to guide the interview.

The researcher used in-depth interviews to gain a detailed picture on graduates' perceptions of their educational experiences in the UWC postgraduate Physiotherapy Master's programme and perceptions of the graduates regarding the outcomes and impact of the UWC postgraduate Physiotherapy Master's programme in their respective countries. To this effect, ten (10), eight (8), five (5) and four (4) audio-recorded interviews were conducted in Zambia, Tanzania, Kenya and Rwanda respectively. The interviews lasted between 20 and 45 minutes.

### **3.5.1.3 Data Analysis**

During data collection, interviews were recorded and transcribed. The data from the in-depth interviews were categorised and analysed in four 'families' to enable the researcher understand outcomes, impacts and challenges peculiar to specific contexts. This process gave rise to the following families; the Zambian graduates, the Tanzanian graduates, the Kenyan graduates and the Rwandan graduates. The researcher read the transcripts several times to identify and familiarise himself with emerging themes relative to the objectives of the study. This iterative process was followed by coding of the transcripts. After all the transcripts were coded, code families were created which meant identifying and categorising similar codes in one family called the code family, this resulted into seven main (7) themes. Data analysis occurred concurrently with data collection (Rabiee, 2004). The information was examined to identify new issues to be explored in subsequent interviews. Atlas.ti version 7 was used to assist with data management. Patterns were identified in the data and relationships between emerging themes explained.

## **3.6. PHASE 3: OUTCOMES AND IMPACT**

This phase sought to explore the perceptions of UWC graduates' work supervisors and students of the UWC graduates employed as lecturers on the impact and outcomes of the UWC Master's programme.

The aim was to describe the outcomes and impact of the UWC programmes from the perspective of the postgraduates, workplace supervisors of postgraduates and students of the UWC postgraduates. This was informed by the researcher's belief that stakeholder involvement in evaluating educational programmes is important for programme improvement. Specifically, involvement of key stakeholders such as work-place supervisors and students of graduates employed as lecturers in evaluations of postgraduate educational programmes could ensure programme relevance and appropriate response to the needs of the people or organisations served by postgraduates such as schools and hospitals. This phase therefore served a summative purpose of the evaluation process as the focus was on the outcome and impact of the programmes.

### **3.6.1 Population and Sampling**

#### **3.6.1.1 Work supervisors**

At the time of the study, graduates were employed by public and private universities and hospitals while some operated their own private practice. Rwanda was represented by one university, the only institution offering Physiotherapy education in that country. In Tanzania, a public and a private hospital participated in the study while Zambia was represented by two universities and a second level referral hospital. These institutions were purposively selected because they employed UWC Master's graduates. In addition, only work-place supervisors who had worked with the graduates for at least six months were included in the study. It was assumed that a period of six months was sufficient to know ones job performance and in most institutions workers are observed for six months before they are confirmed permanent employees.

Subsequently, a total of seven (7) graduate work-place supervisors were identified through hospital and university administrators. Among the seven supervisors, three were clinicians comprising two medical doctors and a Physiotherapist while the remaining four had both academic and clinical roles as medical doctors and Physiotherapists.

Each institution was represented by one supervisor except for one in Zambia where two supervisors, one at the level of head of Physiotherapy department and another at the level of dean of medical school participated. This was followed by a request for an appointment with graduate workplace supervisors through their respective secretaries. A copy of the information sheet (Appendix G), interview guide (Appendix I) and consent forms (Appendix H) were delivered in advance prior to the interview. The secretaries approached the graduate work-supervisors who then volunteered to participate in the study and a date that suited the graduate work supervisors was decided on. The interviews were then conducted at a venue convenient to the participants. It should be mentioned that only three out of the four countries were represented by graduates' supervisors, as Kenyan workplace supervisors were reported to have been on leave or busy with other work-related commitments at the time of the study.

### **3.6.1.1.1 Data Collection Methods**

#### **3.6.1.1.1.1 In-depth Interviews**

In this part of the current study, a semi-structured interview guide was developed to guide the interviews. Given the busy schedules of most supervisors, in-depth interviews were relatively flexible compared to focus group discussions. Following purposive selection of workplace supervisors in Rwanda Tanzania and Zambia, the researcher conducted in-depth interviews to gain a detailed picture of employers' perceptions of the outcomes and impact of the UWC postgraduate programmes. Consequently, total of seven audio-recorded face to face semi-structured interviews were conducted in this study. Prior to obtaining verbal consent to participate, the researcher assured the interviewee of anonymity of their responses. The interviews lasted between 25 and 45 minutes.

### **3.6.1.2 Students of UWC Master's Graduates**

To determine the impact of the UWC postgraduate Physiotherapy Master's programme on clinical practice and Physiotherapy education in Africa, the sample included BSc Physiotherapy students of UWC graduates in participating countries and institutions.



Only Kenyan and Zambian students were purposively selected to participate because they each had two tertiary institutions offering Physiotherapy education, both for first-time Physiotherapy students and those upgrading from diploma to BSc level. The other reason was that the researcher used a different data collection method (telephone interviews) in Rwanda while the only institution training Physiotherapists in Tanzania did not participate in the study because the UWC graduate working there was on holiday at the time of the study.

Kenya had three institutions offering Physiotherapy training programmes at undergraduate level and one at diploma level while Zambia offered Physiotherapy education at three institutions, two of which ran the programme at undergraduate and postgraduate levels while one was a college with only a diploma course. The colleges offering diploma programmes in Physiotherapy were excluded from the study as no UWC postgraduates were employed by them. The study also excluded one of the universities in Kenya which did not employ any UWC postgraduate at the time of the study. This left the researcher with a total of four universities, two in the East African country, Kenya and two in the SADC country, Zambia. The universities in Kenya were both state-owned while in Zambia, one was a public university and the other privately owned.

The private university in Zambia had a total of seventy-three (73) students of which forty-five (45) were pursuing diploma qualifications in Physiotherapy while the rest (28) were BSc students and of the 28, sixteen (16) had prior learning in Physiotherapy at diploma level and at least two years of work experience before joining the university. Eight (8) students with prior learning in Physiotherapy were purposively selected based on availability and willingness to participate in the study. The Physiotherapy programme at the private university in Zambia was relatively new, having been introduced in 2011. On the other hand, the public university had a total of 126 BSc students and three (3) postgraduate Physiotherapy Master's students. The undergraduate students constituted students from premedical classes or first-time Physiotherapy students as well as diploma holders upgrading to first degree status who normally joined at the level of third year due to prior learning and work experience. The upgrading students were fifty-one (51) in total. Third year had fourteen (14), fourth year twenty (20) and fifth year seventeen (17) while the rest (75) were straight from pre-medical classes and had no prior training in Physiotherapy.

This Physiotherapy programme had been in existence since 2001 and was the oldest among all four. Eight (8) students were purposively selected to participate in the study based on willingness to participate and their availability for the study.

One of the Kenyan universities had a total number of 105 students inclusive of students (first years) in basic science classes. However, the UWC graduates only had contact with third and fourth year students, a total of fifty-five (55) students at the time of the study. The first and second years (50) were excluded from the study because they had no contact with the UWC graduates at the time of the study. Out of the 55 students who qualified to participate in the study, only thirty-three (33) were available at the time of the study as the study was conducted towards the end of the semester and some students were busy with exam preparations. Out of the 33 students, eight (8) volunteered to participate in the study and information sheets (Appendix G) and consent forms (Appendix H) were distributed to the students prior to the interview. This university did not have any students with prior learning in Physiotherapy at the time of the study and as a result, it did not run any upgrading programmes. The programme was the first BSc Physiotherapy to be introduced in Kenya in 2010.

The other Kenyan university had a total of one hundred and nineteen (119) undergraduate students, seventy-seven (77) of whom were full time students while forty-two (42) were part-time with prior learning in Physiotherapy at diploma level. Unlike in Zambia where students with prior learning in Physiotherapy were admitted as full-time undergraduate students, the upgrading program in the East African country was run as a part-time programme, where students attended classes on weekends, Friday through Sundays. This “weekend varsity” was arranged to cater for students with prior learning practicing in different parts of the country as majority of the students were in full time employment. This meant that the upgrading students could only attend classes over the weekend to ensure hospitals remained operational while some Physiotherapists with diplomas were upgrading to first degree status. The selection process involved identification of students taught by the UWC graduates through the course coordinator. A list of students taught by UWC graduates was obtained. Seventy-seven (77) students were excluded from the study as they had no contact with the UWC graduates at the time of the study.

Consequently, only forty-two (42) part-time students qualified to take part in the study by virtue of their contact with UWC graduates and out of this number, the researcher purposively selected six students for in-depth interviews due to limited number of students available at the time of the study.

### **3.6.1.2.1 Data Collection Methods**

#### **3.6.1.2.1.1 Focus Group Discussions**

Focus groups are carefully planned discussions involving six to ten individuals that take advantage of group dynamics for accessing rich information in an efficient manner (Polit & Beck, 2003). The researcher conducted one focus group of eight (8) individuals per institution. Thus, two (2) focus groups were conducted in Zambia and one in Kenya. The researcher conducted three (3) focus groups in order to ensure that a good range of viewpoints was covered (Howitt & Cramer, 2011) and saturation reached. Focus group participants were classified according to whether or not they had prior training in Physiotherapy to ensure homogeneity. The limited number (8-10) of participants was set to increase chances of participation for all participants. A neutral venue was selected in both countries to ensure confidentiality and avoid interruptions. Discussions were conducted at the participants' own convenient time. To ensure the discussions were guided and focused, an interview schedule (Appendix J) was used which provided the researcher with a set of predetermined questions that was used as an appropriate instrument to engage the participants (de Vos, Strydom, Fouche & Delport, 2011). Discussions were recorded in two ways, by using a tape recorder and by taking written notes during the session. The sessions started with introductions, setting of ground rules and allocation of pseudonyms to ensure anonymity. The researcher moderated the discussions and also took some notes. Tape recording provided verbatim record of the issues discussed while notes acted as back-up, in case the recording equipment failed or the recording was inaudible (Hennink, 2007). The moderator (researcher) guided the discussion according to the written set of questions or topics (Polit & Beck, 2003) and discussions lasted up to thirty (30) minutes (Howitt & Cramer, 2011). In order to validate the responses, key statements were checked with the participants at the end of the interview.

### **3.6.1.2.1.2 In-depth Interviews**

In-depth interviews were used for one institution in Kenya as alluded to early on due to challenges the researcher encountered in constituting a focus group for this institution. As mentioned earlier, most students were employed on full-time basis; secondly, they were all on clinical attachment in their respective counties or districts at the time of the study and so the researcher only managed to access six students who were resident in Nairobi and nearby townships. The researcher used in-depth interviews to explore students' perceptions of the impact of UWC postgraduates on Physiotherapy education in their respective countries. A semi-structured interview guide (Appendix J) was developed to guide the interviews and a total of six audio-recorded in-depth interviews were conducted. Prior to obtaining verbal consent to participate, the researcher assured the interviewees of anonymity of their responses. The interviews lasted between 20 and 25 minutes.

### **3.6.1.2.1.3 Data analysis**

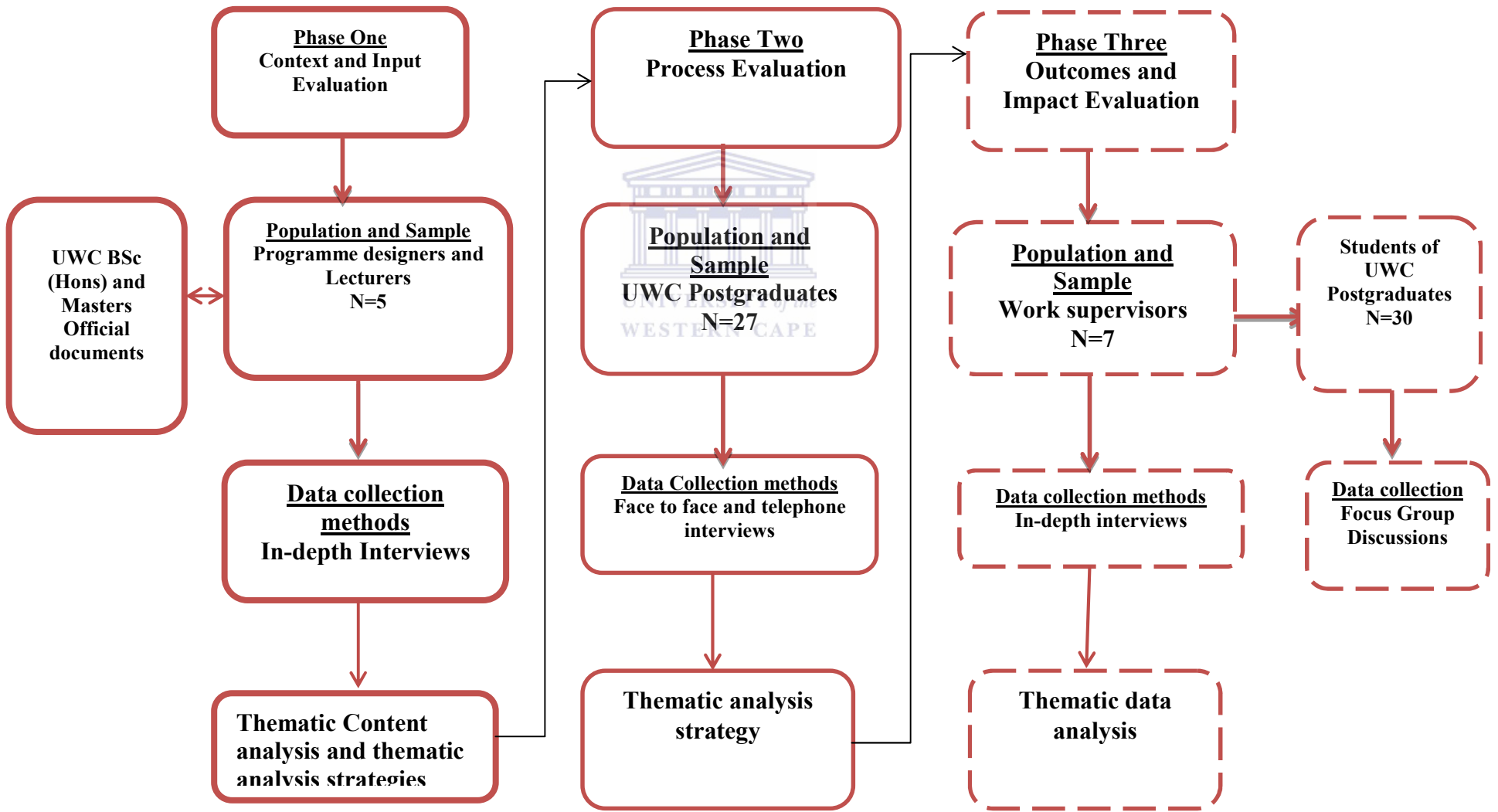
During data collection, interviews were recorded and transcribed. Data analysis occurred concurrently with data collection (Rabiee, 2004) and Atlas.ti version 7 was used to assist with data management. Initially, the researcher familiarised himself with data from both in-depth interviews and focus group discussion by reading through the transcripts and summary notes in their entirety several times. The aim was to immerse in the details and get a sense of the interview as a whole before breaking it into smaller segments. Secondly, the researcher identified emerging concepts relevant to the research questions by assigning codes in the margin of transcripts in the form of short phrases or concepts arising from the texts. The third step was to develop code families by grouping similar codes or concepts in one category. The formation of families in Atlas.ti led to the development of seven (7) main themes. In this regard, the researcher also made both within and between group comparisons for focus group discussions and between case comparisons for in-depth individual interviews. Then a code and quotation output Atlas.ti report was performed to facilitate cutting and pasting of similar quotes together. At each stage of the data collection process, the information was examined to identify new issues to be explored in subsequent interviews. Patterns were identified in the data and relationships between emerging themes explained.

A variety of data sources and methods was used to answer the research questions: “What is the context of the UWC postgraduate Physiotherapy Master’s programme? What are the graduates’ perceptions of their UWC educational experiences? How do graduates perceive the outcomes and impact of their UWC postgraduate educational experience?” “How do graduates perceive the outcomes and impact of their postgraduate educational experience?” What are the graduates’ workplace supervisors’ perceptions of the outcomes and impact of the UWC post-graduate Master’s programme? And how do graduates’ students perceive the impact of the UWC postgraduate Physiotherapy Master’s programme on clinical practice and Physiotherapy education in Africa?

Data sources and collection methods are varied in order to provide a triangulation that may increase the researcher’s confidence in the emerging findings (Cojocaru, 2009). Stakeholders are regarded as key sources for eliciting programme theory and providing data on how the programme works. These individuals have experience of and thus expertise in particular phases and process within the UWC postgraduate Physiotherapy Master’s programme. Evaluation requires data on process and outcome and on individuals (Pawson & Tilley, 2004). The greater the triangulation of supporting sources, the more rigorous the supporting evidence and the greater the triangulation of supporting sources, the more confidence one has in the significance and meaningfulness of a lesson learned (Patton, 2001). Figure 3.3 below shows the data collection process of the current study

Figure 3.3

DATA COLLECTION PROCESS FLOW CHART

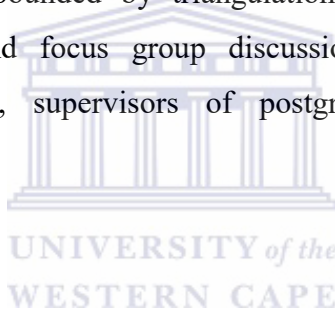


### **3.7 TRUSTWORTHINESS**

Trustworthiness deals with how researchers persuade their audiences including themselves that the findings of an inquiry are worth paying attention to (Babbie & Mouton, 2001). Lincoln and Guba (1985) in Polit and Beck (2008) suggested four criteria for developing the trustworthiness of a qualitative inquiry; credibility, dependability, confirmability and transferability.

#### **3.7.1 Credibility**

Credibility refers to the confidence in the truth and interpretation of the data (Polit & Beck, 2008). In this study, credibility was achieved through prolonged engagement with participants (Morrow, 2005). This was compounded by triangulation of different methods (document analyses, in-depth interviews and focus group discussions) and informants (Curriculum developers, UWC postgraduates, supervisors of postgraduates and students of UWC postgraduates).



#### **3.7.2 Dependability**

Dependability refers to the stability (reliability) of the data over time and over conditions (Polit & Beck, 2008). This was achieved through an in-depth methodological description to allow the study to be repeated (Shenton, 2004).

#### **3.7.3 Confirmability**

This standard is concerned with proving that the data represent the information participants provided rather than inquirer imaginations (Polit & Beck, 2008). Confirmability was achieved through triangulation to reduce effect of researcher bias and through audit trials.

### **3.7.4 Transferability**

Transferability refers to the extent to which the findings can be transferred to or employed in other settings or groups (Polit & Beck, 2008). To this effect, the researcher endeavored to provide sufficient contextual information so as to make the study transferable to other settings.

## **3.8 PROCEDURE**

After approval of the research study by the University of the Western Cape Senate, Higher Degrees Committee as well as the ethical permission to conduct the study from the Senate Research and Study Grant Ethics Committee (Appendix K), the researcher invited potential participants via e-mail and telephonic contact to participate in the study. Informed consent procedures were followed. All participants were served with consent forms and information sheets in person or via e-mail. To ensure the authenticity of participants, some records of postgraduates were retrieved from the university and contact was made with PhD foreign students at UWC who represented all the four target countries for the purpose of collecting the names and contact details of potential participants such as email addresses and phone numbers. The PhD students provided the researcher with contact details of Research Ethics Committees and UWC Physiotherapy Master's postgraduates in their respective countries. All UWC PhD students conducted data collection part of their Master's programmes in their respective countries; hence they were familiar with ethical requirements in those countries and advised the researcher accordingly. The researcher then contacted the graduates and selected focal point persons from among them, based on their location in that particular country. The role of the focal point person was to help with more information regarding ethical clearance, contact details and workplace locations of the potential participants and also direct the researcher to other participants who might have been missed by the PhD students at UWC. Thereafter, ethical clearance was sought from participating institutions and appointments were made with the participants upon clearance.



### **3.9 ETHICS STATEMENT**

The researcher used the American Psychological Association (APA) ethical principles and standards (Cozby, 2006). The ethical principles address general principles relating to beneficence, responsibility, integrity, justice, and respect for the rights and dignity of others. Ethical approval was sought from the Research Ethics Committee of the University of the Western Cape and from the ethics committees of all the countries involved (Appendices L, M and N) except Rwanda. The researcher used telephonic interviews and Skype calls for some Rwandese participants, while those pursuing PhD studies were interviewed at UWC hence there was no need for ethical approval. To ensure protection of participants and voluntary participation, consent was sought from participants to have the discussions recorded, in the case of in-depth interviews and focus group discussions. Participants were assured of confidentiality and their rights to refuse to participate or withdraw at any time. Numbers instead of participants' names were used during interview sessions to ensure anonymity. The data will be kept under key and lock for five years after the results of the project have been published before it would be destroyed.

### **3.10 REFLEXIVITY**

Reflexivity is the process of examining both oneself as the researcher, and the research relationship. This entails a continuous reflection on the research process and being aware of how the researcher and object of study affect each other mutually in the research process. In the current study, reflexivity involved thinking about how pre-existing understanding of the UWC Master's programme was constantly revised in the light of new understandings and how the research process and outcomes were affected by the same.

The research process was a great learning experience for the researcher, whereby initial presuppositions were challenged right from the beginning of data collection and analysis thereby informing constant changes in the question composition of data collection tools. Initially, the researcher was unaware of the context informing the development of the UWC Master's programme until the UWC BSc (Hons) and Master's programme official documents were reviewed and interviews were held with the curriculum designers of the programme. The documents from which I mined data were incomplete and fragmentary, while some like the BSc (Hons) and Master's programme curricula were not accessible. In many cases, the documents were uneven, with extensive information on the UWC Physiotherapy undergraduate programme

and relatively little on the BSc (Hons) and Master's programme. A clear distinction between the BSc (Hons) and Master's degrees was also missing in the CHS annual reports. Nevertheless, documents were useful in providing information necessary for the development of the UWC BSc (Hons) and Master's programme theory. Apart from providing contextual richness in the research, documents were particularly useful in pre- and post-interview situations. In that regard, I used data culled from documents to check interview data and vice versa. Documents supplied leads for asking additional, probing questions. Therefore, as incomplete and uneven as they were, the reviewed documents augmented the interview data and thus served a useful purpose. The diverse sources of data gave a more complete picture of the context of the UWC BSc (Hons) and Master's programmes than would have been given by a single data source. The triangulation of data sources in effect, countered threats to trustworthiness such as researcher bias and respondent bias.

In the first phase of the data collection process, the researcher learnt about the socio-political context within which the UWC Master's programme was developed and the resultant implementation challenges that followed. Learning about such a historical background of both the University of the Western Cape, and the UWC Physiotherapy programme in particular, caused a great shift in the researcher's presupposition that the UWC Master's programme should have been operating like other Master's programmes, because it was a Master's programme in the first place. The historical background of UWC and the Physiotherapy Department in particular was compounded by the 'new' knowledge of the historical background of Physiotherapy education in Africa and this changed the researcher's assumptions a lot and brought illumination that influenced the research process and outcome. In regard to the UWC Master's programme, the researcher learnt that UWC sought to offer learning opportunities to diploma-trained Physiotherapists from the whole of Africa but mostly from SADC and East Africa because of lack of training institutions in those regions of the African continent. This according to the curriculum designers was meant to upgrade diploma-trained Physiotherapists first to a one-year BSc (Hons) and then to a one-year Master's in order to prepare them for university employment with the long term goal of introducing Physiotherapy training opportunities at degree level and ultimately increasing the number of Physiotherapists with competencies in research, evidence-based practice and community based rehabilitation skills.

Following the first in-depth interview with one of the curriculum designers, the researcher reflected on the findings and generated questions from the same for subsequent interviews with other curriculum designers in order to have a more comprehensive construction of knowledge. Thus, the researcher had to include more questions on the preparatory BSc programme rather than placing more emphasis on the Master's programme alone.

The work-place supervisors of the UWC Master's postgraduates also brought a new light to the data collection process and outcomes of the research. The initial intent of the researcher was to focus on the competencies of the UWC postgraduates from the perspective of their workplace supervisors. It was however brought to light that the workplace supervisors' construction of knowledge on the performance of the UWC postgraduates involved more than knowing their competencies. The workplace supervisors highlighted attributes that make graduates employable and skill sets expected of a graduate. Furthermore, some workplace supervisors brought to light challenges of conferring a BSc (Hons) status on a candidate with a diploma and how the workplace supervisors struggled to conceptualise and employ candidates with BSc (Hons) status straight from diploma, without first possessing a first degree. These preliminary findings influenced the entire course of data collection and outcomes. In addition, the preceding interviews with curriculum designers, employers and postgraduates necessitated the need to include other stakeholders in the sample frame, such as UWC lecturers and students of the UWC postgraduates in Kenya and Zambia. Informed by the philosophy of constructivism, the researcher sought to include more truths and realities to the findings in order to shape research outcomes through data corroboration.

The process of reflection on findings during data collection also informed inclusion of additional data collection methods such as focus group discussions to cater for students of UWC postgraduates in Zambia and Kenya as well as telephone interviews for Rwandan participants. On the UWC postgraduates, it was realized that not all postgraduates worked in universities, for example, in countries like Zambia and Kenya, the majority of the postgraduates worked as academics while in Tanzania, all UWC postgraduates but one worked as Physiotherapy clinicians, hence the interview guide was revised to capture areas more relevant to their context in order to aid their construction of knowledge in regard to the impact of the UWC programme in that country.

The reflection process necessitated the refinement of the research title highlighting the need to give equal weight and attention to clinical practice rather than focus on impact on research outputs as originally intended. To this end, the researcher appreciated the practice of reflexivity throughout the course of the research process and thus afforded the researcher, the opportunity to create an environment that fostered co-creation of knowledge regarding the impact of the UWC Master's programme on clinical practice and research in SADC and East Africa.

### **3.11 CONCLUSION**

In this chapter, the researcher has described the relevance of qualitative research to the current study, particularly explorative descriptive qualitative methods such as in-depth interviews and focus group discussions. The researcher highlights the merits and demerits of qualitative research as well as the steps undertaken in this study to ensure trustworthiness of the research and ethical considerations. Further, an in-depth description of the research settings and population is rendered to enhance the trustworthiness of the study. In addition, the use of multiple data collection methods and sources has been substantiated. The researcher also presented data analysis steps taken in each phase of the research study.

For the sake of clarity, the findings of the current study are presented and discussed systematically. The subsequent chapters represent the four steps in the CIPP evaluation model in the context of theory-based evaluation. Chapter 4 describes and discusses the context and input evaluation phase of the UWC Master's programme. Chapter 5 deals with the implementation process from the perspective of UWC postgraduates and Chapter 6 focuses on programme outcomes and impact from the perspectives of the work-place supervisors of UWC postgraduates, UWC postgraduates and students of the postgraduates, and Chapter 7 presents the summary, proposed model and evaluation recommendations.

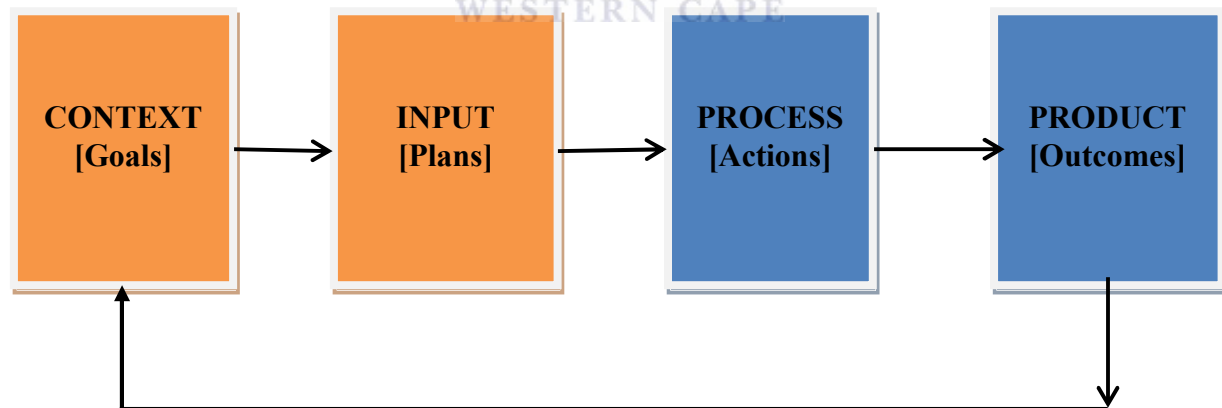
## PHASE 1: CONTEXT AND INPUT

### CHAPTER 4

#### UWC POSTGRADUATE PHYSIOTHERAPY HONOURS/MASTER'S PROGRAMME CONTEXT AND INPUT

##### 4.1 INTRODUCTION

In this chapter, the findings indicating the programme context: training needs, goals, objectives and intended outcomes of the BSc (Hons) and Master's programme is presented. The chapter describes the programme theory according to the programme designers, implementers and official documents. The programme theory is formed by describing the context and input of the programme as shown in Figure 4.1 below:



**Figure 4.1** Programme context and input evaluation using the CIPP framework

The chapter responds to the first objective which aims to describe the context and input of the University of the Western Cape (UWC) BSc (Hons) and Master's programmes by means of document analyses and interviews with key informants (programme designers and implementers). As part of the chapter, a description of the background of the programme designers and implementers who participated in the in-depth interviews is presented.

Thereafter, the findings of the in-depth interviews and document analysis exercise in the form of themes that emerged in the analysis are reported. Results of the document analysis used as a complimentary data collection procedure in support of triangulation and theory building are presented.

## 4.2 METHODS

To guide the current study, it was imperative that the views and voices of the UWC BSc (Hons) and Master's degree programme designers (PDs) and implementers were heard. Thus, in-depth interviews were conducted with three (3) PDs and two (2) senior lecturers (implementers) individually. Two of the PDs were retired lecturers while the third worked as Head of school of Rehabilitation Sciences at one of the universities in Cape Town. The PDs recounted experiences of what motivated them to develop the BSc (Hons) and Master's degrees in Physiotherapy at the UWC.

Additionally, a review of the 20-year-old UWC BSc. (Hons) and Masters training programmes' records provided information on the historical background and rationale for the implementation of the training programme. Archival documents reviewed included: "the African Rehabilitation Institute (ARI) Syllabus for Physiotherapy Training in Africa (1993)" and the UWC BSc. (Hons) and Master's training programme module descriptors for 2007. For the most part, the programme developers referred to these documents during the interview sessions. The researcher could not access earlier module descriptors and so depended on PDs verbal report of modules that existed at inception of the programmes. The documents that the researcher managed to retrieve were rich sources of data and each provided its own contribution to understanding the context of developing the BSc. (Hons) and Master's Physiotherapy programmes at UWC.

The findings of the Physiotherapy training needs analysis conducted by the ARI, provided the rationale for the implementation of the UWC BSc. (Hons) and Master's degree programmes for diploma-trained Physiotherapists (DTPs) intending to transition to BSc degree status and subsequently Master's. The ARI report highlights research findings on Physiotherapy training needs identified in Africa prior to the introduction of the UWC BSc. (Hons) and Master's degree

programmes and ultimately recommended a syllabus for Physiotherapy training: goals and objectives of the programmes and programme entry requirements to assist in developing Physiotherapists in Africa. In response to this, UWC lecturers designed the UWC BSc. (Hons) and Master’s programmes. The UWC BSc and Master’s module descriptors provide data on modules and module objectives, learning approaches and mechanisms to ensure achievement of anticipated outcomes.

The documentary data were analysed together with data from interviews so that themes would emerge across both sets of data. A Checklist (Appendix C) was prepared to guide the review of documents for consistency. In the analysis of documents, the researcher used an inductive thematic content analysis strategy (Bowen, 2009). Examples of the documents selected and the data analysed are given in Table 1 below:

Documents selected	Data analysed
African Rehabilitation Institute (ARI) Syllabus for Physiotherapy Training in Africa, 1993.	Programme context: history, goals and objectives Training needs Target groups Entry qualifications Recommended syllabus Duration of programmes
UWC BSc (Honours) and Master’s Programme module descriptors, 2007	Programme modules and module objectives Learning approaches and mechanisms to ensure the achievement of expected outcomes

**Table 4.1 Documents and data analysed**

### **4.3 RESULTS INDICATING THE CONTEXT OF THE UWC POSTGRADUATE PROGRAMMES**

Prior to their implementation, educational programmes are first conceptualised and developed by a group of stakeholders. The programme development process often involves identifying the educational needs of the population for which the programme is being designed. However, to be able to do this, the concerned parties are motivated to identify needs, set objectives, and develop a programme and the desired outcomes of the programme. Programme designers recounted experiences of what motivated them to develop the BSc (Hons) and Master's degrees in Physiotherapy at UWC. This section describes factors that informed the development of the programmes.

#### **4.3.1 Theme One: Limited Access to Bachelor of Science Degrees in Africa**

The Physiotherapy profession in Africa was underdeveloped in as far as professional development was concerned. Before the development of the UWC BSc (Hons) and Master's degree programmes, the majority of African Physiotherapists had diploma qualifications. All the PDs for the UWC BSc (Hons) and Master's degrees indicated that limited training opportunities for African Physiotherapists motivated them to develop the degree programmes with the hope of advancing Physiotherapy education in Africa:

*“If I remember correctly, let us just go back and put this into context. . . . Up until 1984 and 1985, we only had diploma programmes, so that most people trained in South Africa before 1984 had diplomas. Everybody moved to the 4-year degree round about 1980s. So there were a lot of people in South Africa, especially more experienced people who had diplomas “(PDI)*



The PGs highlighted the educational challenges faced by DTPs in Africa:

*“It meant that for people with diplomas, there were actually no prospects for them to advance, to have access to further postgraduate studies” (PD2)*

*“We were also concerned about the fact that the number of African countries offering degree programmes was very few. Nigeria, South Africa, Zimbabwe and Egypt were the only countries on the continent offering degree programmes in Physiotherapy (at the time) “(PD3)*

The views of the UWC PDs regarding limited training opportunities for African Physiotherapists were reaffirmed by the ARI document:

*“Currently (1988 to 1989), the Physiotherapy profession is underdeveloped in Africa. This is highlighted by the fact that the number of practicing clinicians is very low as it was evident from the reports given by the representatives of the 10 African countries (Botswana, Egypt, Ethiopia, Kenya, Lesotho, Malawi, Swaziland, Tanzania, Zambia and Zimbabwe) who participated in the formulating of these syllabi” (ARI Page 3)*

Consistent with the observation made by the ARI, the World Confederation for Physiotherapists also issued a directive highlighting the need for degree programmes in Africa. According to UWC PDs, the directive was given at a conference held in the early 90s and thus reaffirming the need for degree programmes in Africa.

*“According to the World Confederation for Physiotherapist (WCPT), diplomas would not be accepted anymore” (PD2)*

Though the UWC BSc (Hons) and Master's programmes were initially targeted at historically disadvantaged black and coloured South Africans with diplomas, the PDs acknowledged that the 'olive branch' was later extended to the rest of the continent in a quest to empower African Physiotherapists with the necessary qualifications to run degree programmes in their respective countries as indicted in the following statements:

*“There were two universities in South Africa, where black people could go, MEDUNSA (Medical University of South Africa) and then UWC. And UWC is where we started to cater for coloreds. There were a lot of people . . . but also I was very aware at that time that training in the rest of Africa was for diploma” (PD1)*

*“Many Physiotherapists who trained in the 70's did not have degrees. They had diploma. So the renaissance idea of President Mbeki, the African renaissance, I think it fitted in well with the whole vision of empowering Africa, so that was mainly to equip the diploma holders with degrees so that they can run degree programmes in their countries and then also to generate knowledge about Africa” (PD2)*

*“And our goal therefore, was apart from upgrading the skill, was getting Physiotherapists from African countries that were not offering degree programmes, getting them to have the necessary qualifications to be able to now go back to their countries and be available targeting degree programmes” (PD3)*

This suggests that many African countries had limited access to BSc Physiotherapy education. According to Frantz (2007), some countries like Malawi had to send candidates to other African countries such as Zambia and Tanzania even for diploma training. Regarding the availability of BSc programmes in Physiotherapy, literature confirms that only Egypt (African Rehabilitation Institute, 1993), South Africa (Frantz, 2007), Zimbabwe (Useh, Akinpelu & Makinde, 2004) and Nigeria (John et al., 2012) offered Bachelor of Science degree programmes in Africa before 1990. John et al. (2012) further reports that Nigeria was among the first on the continent to develop a Bachelor of Science degree in Physiotherapy in 1966.

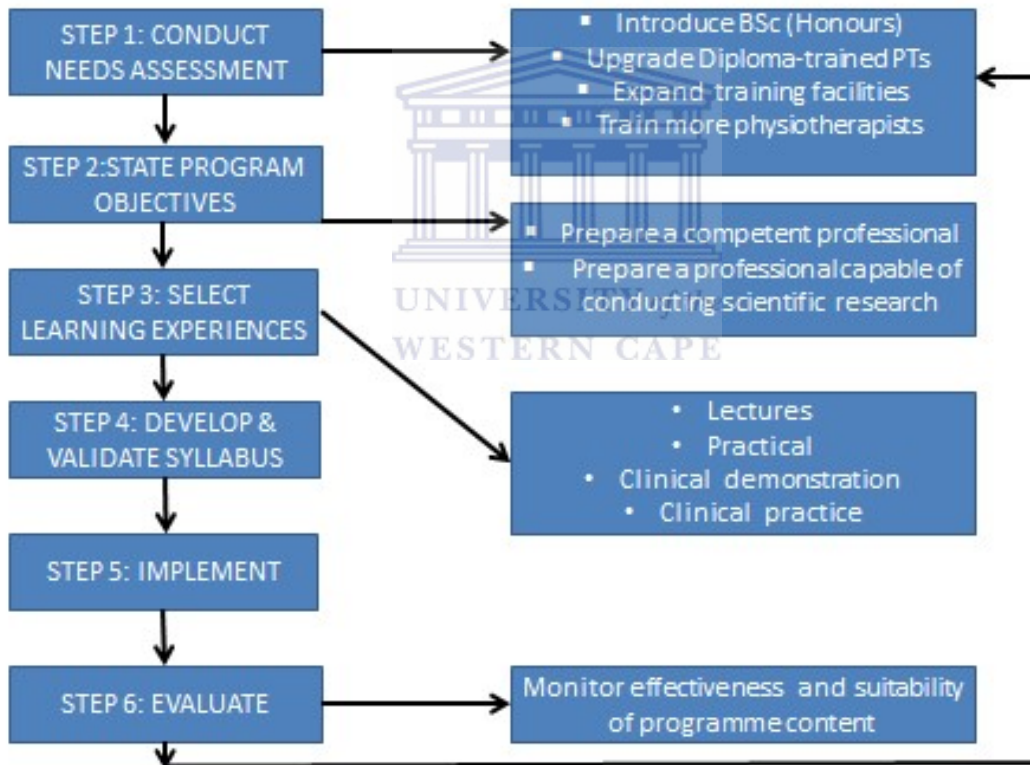
The quotes regarding limited access to BSc degree training for Physiotherapists in most parts of Africa prior to 1990 are consistent with the Physiotherapy educational developmental trends reported world over. Jones and Sheppard (2008) report that Physiotherapists in most countries provided predominantly vocational training. Studies have shown that even some relatively developed countries and regions moved to Physiotherapy degree training in the 80s and 90s. For example, Ireland had its first BSc (Hons) degree programme in Physiotherapy introduced at University College Dublin in 1983 (Blake, Cusack, Doody & Hurley, 2007) whereas the UK moved away from the previous Graduate Diploma system later in 1992 when Physiotherapy became a degree access profession in that region (Kell, 2006). In addition, Sweden also only introduced a Baccalaureate entry-level Physiotherapy education in 1998 (Hager-ross & Sundelin, 2007). These studies provide a rich context to the evolution of Physiotherapy training globally and particularly in Africa and demonstrate that the apparent lack of access to Physiotherapy training as highlighted by the UWC PDs and the Africa Rehabilitation Institute (ARI) was a global challenge and not only peculiar to Physiotherapy training in Africa.

### **Summary of Theme One**

It is clear that Physiotherapy training in most African countries was offered at diploma level. Thus, the study demonstrates that the main motivations behind the development of the BSc (Hons) and Master's Physiotherapy programmes for DTPs was to empower them with necessary qualifications that would enable them to develop and implement BSc Physiotherapy programmes in their respective countries. This was born out of the need to increase access to Physiotherapy degree programmes in Africa. The study also demonstrates that the award of opportunities to study up to Master's level was consistent with the need to prepare participants for academic career paths in order that degree programmes are introduced in their respective countries after completion of their studies.

### 4.3.2 Theme Two: Physiotherapy Training Needs Identified in Africa

The African Rehabilitation Institute (ARI), a department of the then Organisation of African Unity responsible for disability issues in Africa, conducted a survey in ten African countries, (*Botswana, Egypt, Ethiopia, Kenya, Lesotho, Malawi, Swaziland, Tanzania, Zambia and Zimbabwe*) in a bid to identify the training needs of African Physiotherapists. The survey was followed by three sessions of curriculum workshops with participants from the ten African countries from 1988 through 1989. Figure 4.2 below, shows the curriculum development steps followed by the stakeholders (ARI and the 10 African countries).



**Figure 4.2** Six steps taken by the ARI and stakeholders to develop the proposed BSc (Hons) syllabus for African learning institutions

The ARI document highlighted some reasons for developing Physiotherapy education in Africa:

*“The African continent is experiencing a number of pressing problems. These include diseases, wars/armed conflicts, natural catastrophes, economic factors and industrial accidents among others. The rapidly increasing population further places the continent in a difficult position. According to WHO (1981) findings, it was estimated that 10% of the continent’s population is disabled. This calls for an urgent need to expand the existing training facilities for both occupational and physiotherapy services in the continent.”*  
(ARI page 3)

In reference to the ARI survey findings above, PDs explain the need that arose to close the knowledge gap among DTPs and prepare a more able Physiotherapy cadre. The following statement by a UWC programme designer corroborates the quotation extracted from the ARI document:

*“The number of people with disability was increasing and the African Rehabilitation Institute was of the opinion that the professionals who were being trained in Africa were not adequately skilled.”* (PD3)

Accordingly, the African Rehabilitation Institute proposed syllabus highlights the following gaps in the performance of diploma trained Physiotherapists:

*“It was felt by the participants that, diploma trained Physiotherapists and occupational therapists, lack research methodology and community based rehabilitation skills to name a few. Hence the need for degree programmes”* (ARI page 3)

The training needs identified by the ARI as quoted above were further confirmed by a UWC curriculum designer in the following statement:

*“The key gaps that they found in the knowledge of those who were being trained were: deficiencies in research methods and Community Based Rehabilitation”* (PD3).

One of the UWC BSc and Master's PDs reported that the findings of the ARI necessitated a meeting which was held in Uganda to discuss the burden of disabilities, and continuing professional development for diploma trained Physiotherapists:

*“So acknowledging this gap, the fact that the diploma graduates have deficiencies and there was a need to start addressing the issue of the growing number of people with disabilities. Then I got some funding from WCPT, and called a workshop in Uganda for all WCPT-A member states. Part of the challenge was that if we leave African countries to look for ways of upgrading their staff, it was expensive in the sense that they had to send their graduates abroad to Europe. Secondly, most of the European countries at the time would rather want them to go and start from the beginning. So we thought that gives us an opportunity of offering a solution to an African need, so cost was a major one”*  
(PD3)

It is clear from the findings of the current study that the scope of Physiotherapy practice was expanding beyond the knowledge borders of DTPs in the 80s. The corroboration of evidence between the ARI document and the UWC PDs was overwhelming and reveals key performance gaps identified among DTPs then. This indicates a changing scope of Physiotherapy practice and the need for greater depth of knowledge. Consistent with these findings, Chipchase et al. (2006) report that the duration of Physiotherapy training programmes in Australia was first increased in 1933 to include more clinical work and muscle re-education in response to the poliomyelitis virus. Similarly, increased disease burden in Africa as highlighted by both the ARI document and the UWC PDs motivated the development of the UWC BSc (Hons) and Master's degrees in Physiotherapy. Many studies have reported the transition of Physiotherapy training programmes world over from initial one year training programmes for masseuses and masseur to a two or three-year diploma and subsequently four year BSc degree programmes (Chipchase, Galley, Jull, McMeeken, Refshauge, Nayler & Wright, 2006; Kell, 2006; McMeeken, 2007; Redenbach & Bainbridge, 2007; Blake, Cusack, Doody & Hurley, 2007; Bithell, 2007; Hager-Ross & Sundelin, 2007; Hussey, Wong & Connell, 2013).

As Chipchase et al. (2006) reports, the introduction of BSc degree programmes in Physiotherapy was to accommodate a more solid foundation in biological, pathological and behavioural sciences, whilst still retaining an emphasis on the acquisition of professional skills and clinical experience.

Though the transition of Physiotherapy education occurred much earlier in most developed countries, the current study shows that most African countries identified this need in the late 80s except for Nigeria (John et., 2012) Egypt (African Rehabilitation Institute, 1993), Zimbabwe (Useh, Akinpelu & Makinde, 2004) and South Africa (Frantz, 2007). The quotes on inadequate facilities and resources in Africa are consistent with the findings of a study conducted by Frantz (2007) on challenges of Physiotherapy education in Africa which reported a lack of human and financial resources in majority of African countries as chief reasons for their failure to either introduce Physiotherapy education in their local universities or send their citizens to study abroad. As a consequence, Africa lagged behind in Physiotherapy education despite sharing common antecedents with the west, regarding the birth of the Physiotherapy profession such as the two world wars and the poliomyelitis virus-related impairments and disabilities. Contrary to these findings, developed countries such as those constituting the UK (Kell, 2006; Bithell, 2007), Canada (Redenbach & Bainbridge, 2007) and Sweden (Hager-Ross & Sundelin, 2007), managed to transition independently while others like Singapore could manage to send students to study abroad in the UK, New Zealand and Australia (Hussey, Wong & Connell, 2013).

As a result of the lack of human and monetary resources in most African countries, Physiotherapy education remained underdeveloped, leading to deficiencies in both generic and specific competencies such as research methods and community-based rehabilitation respectively.

The performance gaps identified among diploma-trained Physiotherapists as documented by the ARI and reported by the UWC PDs is consistent with the recent research findings reported by Sander, Urimumbeshi, Chevan, Mann and Dunleavy (2015) in a study aimed at promoting

clinical reasoning using the International Classification of Function, Disability and Health (ICF) framework for continuing education in Rwanda.

The study reported that early training at the certificate, diploma and later at BSc level did not incorporate clinical reasoning at a level required for complex patient care, often encountered in the Rwandan environment. In addition, a study conducted in the UK to analyse postgraduate entry-level students' readiness for student-centred Master's level learning reported minimal encouragement of critical thinking or reflective thinking in diploma programs (Kell, 2006). Revelations such as the ones reported by these authors prompted the UWC PDs to conceptualise, develop and implement the BSc (Hons) and Master's degree programmes targeting DTPs in Africa.

### **Summary of Theme Two**

In this section of the study, the researcher has demonstrated the Physiotherapy training needs identified by the ARI in Africa. The study also highlights training programme objectives and desirable teaching strategies set by the ARI, including clinical placements, practice, case presentations, among others. Further, the study highlights the many pressing health-related challenges such as escalating numbers of people living with disabilities, diseases and a rapidly growing population. These challenges necessitated the need to expand existing training facilities for Physiotherapists in order to increase access to Physiotherapy training. In addition, the study shows that DTPs at the time lacked research methods and community-based rehabilitation skills hence the need for the ARI proposed degree programme.

### **4.3.3 Theme Three: Target Groups and Admission Criteria**

According to information obtained from the ARI document, the stakeholders agreed on the target groups for the BSc (Hons) degree programme in Physiotherapy as follows:

*“It was recommended that Diploma holders should be accorded a chance to upgrade their skills by allowing them to enroll on the degree programmes. The three categories of people eligible for the programme would be ‘O’ levels school leavers; Physiotherapy Diploma holders, and mature age entry” (ARI Page 42)*



The ARI document, highlight the following entry requirements for the BSc (Hons) Physiotherapy degree programme:

1. *Six ‘O’ levels credits in English, Math, Human Biology, Physics (Physical Sciences) and any other two subjects”.*
2. *Internationally recognized Diploma in Physiotherapy*
3. *Minimum entry age of 18 years will be accepted*
4. *Mature age entry should be considered within the requirements of the Institution (ARI Page 4)*

The entry requirements such as Six ‘O’ level credits in English, Math, Human Biology, Physics (Physical Sciences) asset by the ARI for the BSc (Hons) degree in Physiotherapy was in line with requirements for Physiotherapy programmes offered in other parts of the world. For example, the need for all intending students to possess at least senior level sciences has been reported in Australia (Skinner, 2007). Similarly, in the UK, It is generally preferred that students should have a grounding in basic biological and physical sciences before entry (Bithell, 2007). In the same vain, the minimum entry criteria for BSc (Hons) in Ireland include one or two laboratory sciences, English, Irish, a third language, mathematics and another recognised subject (Blake, Cusack, Doody & Hurley, 2007) while in Sweden, would be students are expected to have a minimum of thirteen (13) years of schooling (Hager-Ross & Sundelin, 2007). While the ARI provided sufficient guidance on the requirements for “O” level school leavers intending to pursue a degree in Physiotherapy, there was little information on entry requirements for Physiotherapy diploma-holders upgrading to BSc level. However, the stakeholders agreed that mature age entry should be considered within the requirements of the institution.

#### **4.3.3.1 Conversion Programme at University of the Western Cape**

Following the ARI Bachelor of Science Honours curriculum development process with African countries, the UWC curriculum designers proposed the introduction of a degree programme for diploma-trained Physiotherapists in Africa.

*“We wrote a proposal at UWC to say “why don’t we look for opportunity to offer upgrading programmes for graduates with diploma qualification from African universities?” In the proposal we submitted to the university, the first year was the upgrading programme, (diploma to BSc. (Hons), the second year was the Master’s programme. One year for the upgrading programme, “write an exam, obtain 60% and above, they can proceed to the Master’s programme”. “If you get less than 60%, then we don’t take you in there (you then exit with a BSc (Hons)”. All we needed to do was to find a way where we could bring them in for a one year programme that will then cover these deficiencies relating to research methods and the theoretical aspect of things. In the Master’s programme, there are Master’s by coursework and Master’s by thesis only” (PD3)*

The UWC PDs explain the criteria they used to allow diploma-trained Physiotherapists, access to the BSc (Honours) programme:

*“Many thought “we should acknowledge what they have done” as most of these people then were not fresh graduates from the diploma school. They had graduated for ten (10) years or more, so clinical experience they had. They had clinical experience and Community Based Rehabilitation experience. “We said “you must have at least five years clinical experience”. “Your CV should reflect the different places that you have worked in”. So we looked at all that before we offer that admission.”(PD1)*

The entry requirements recommended by the ARI and the UWC PDs for DTPs intending to upgrade to BSc degree status, are akin to those reported in Singapore (Hussey, Wong & Connell, 2013). Unlike the Singaporean one year BSc conversion programme which is similar to the programme under evaluation in the current study, other studies have reported a different conversion model whereby diploma-trained Physiotherapists upgrade their credentials to a two-year Master’s degree programme without a first degree (Kell, 2006; Drennan, 2008; Cooley, 2008). Kell (2006) reported that Physiotherapy and Radiography candidates were accepted onto Master’s programme if they possessed a degree or diploma in their area of study, a two-year post registration experience and evidence of continuing professional development.

Although similarities exist between the current study and the one by Kell (2006), the UWC programme followed a different conversion model by starting with a transition from diploma to BSc (Hons) degree which had a duration of one year before moving on to a Master's of Science degree for another year. There is limited information within the Physiotherapy context regarding conversion programmes from diploma to BSc degree programmes.

The admission criteria set by the UWC PDs that recognise previous work experience and qualifications such as a Diploma in Physiotherapy is consistent with the concept of recognition of prior learning (RPL). Recognition of prior learning refers to practices developed within education and training to identify and recognise adult's previous learning (Harris, 2000).

Harris (2000) explains that the principle underpinning RPL is that previous learning-acquired informally, experientially or formally can and should be recognised and given currency within formal education and training frameworks. South Africa introduced the RPL into the discourse of an integrated National Qualification Framework in 1995 (Ralph, 2012). According to Cooper and Harris (2013), in South Africa, RPL is not only crucial for skills development and life-long learning, but is also seen as contributing to social justice through its potential to widen access to learning opportunities for those previously denied them under apartheid. As a result, all higher education institutions in South Africa have a policy in place which allows for RPL access into both undergraduate and postgraduate study. According to the South African National Standards Bodies Regulation (1998), the RPL process, entails "the comparison of the previous learning and experience of a learner howsoever obtained against the learning outcomes required for a specified qualification of that which meets the requirements." Thus, given the above information, it can be argued that the UWC PDs acted in line with national educational guidelines. However, the programmes under evaluation may need a clear road map which specifies exactly how a Diploma in Physiotherapy might be combined with work experience to allow postgraduate entry. Frick, Bitzer and Leibowitz, (2007) argue that a thorough conceptualisation of, and clearly thought through approach to RPL is necessary for effective policy implementation while Andersson (2006) emphasises the central role of pre-entry assessment in the process of recognising prior learning, as it forms an integral part of the process

whereby prior learning is considered and acknowledged, particularly in the specific institutional context.

The PDs also explained why the bridging course was called BSc (Hons) and how the duration of the degree programmes was arrived at:

*“At UWC, there were lots of Honours degrees. There were three (3) year Bachelor of Arts and Bachelor of Science degrees, and then “you do Honours for one year and then you do Masters”. From a four year degree “you go straight to Masters”. So there were a lot of Honours degrees. The Physiotherapy degree is a four year degree and seen as an Honours degree. Anybody else had to do a three (3) year undergraduate degree and then do Honours for one year.” (PD1)*

Considering the study duration of Physiotherapy diploma programmes in Africa which lasted for three years of full-time study, it could be assumed that diploma-qualified Physiotherapists were made to join the degree programme in fourth year at Honours level hence the nomenclature, BSc (Hons) degree programme. Aside from the University of the Western Cape, Honours degree programmes in Physiotherapy exist in countries that make up the UK with three (3) years of full-time study being the convention in England and Wales, compared with four (4) years in both Scotland and Northern Ireland (Bithell, 2007). This therefore justifies the nomenclature and study duration adopted by both the ARI and UWC. The one year duration of the conversion programme at UWC is consistent with the duration of the Singaporean Physiotherapy conversion programme for DTPs (Hussey, Wong & Connell, 2013). The PDs explained that the modules considered at the implementation stage, were dependent on the expertise available at the time and in accordance with the recommendations of the ARI:

*“We put together modules that were based on the expertise that was available in the department and looking at the report of the ARI .We had Anita (not real name) . . . an expert in CBR and everything. We offered another module in care of the elderly which is my own area of interest. We had another module in policy development.”(PD3)*

The apparent lack of human resource reported by the UWC PDs at the implementation stage of the BSc (Hons) degree programme is not surprising as Africa from what has been gathered so far had challenges with access to degree and postgraduate programmes in Physiotherapy. Louw et al. (2007) reports that though South Africa introduced physiotherapy postgraduate programmes in the 1990s; South African Physiotherapy educators were still in the process of obtaining a postgraduate degree themselves. Similar challenges have been reported by studies that investigated the formation of new Physiotherapy programmes in Singapore (Hussey, Wong & Connell, 2013) and Suriname (John et al., 2012). A study conducted by Hussey, Wong and Connell (2013) reported that the lack of human resources to deliver a BSc degree programme in Singapore led to the formation of an educational collaboration with Trinity College Dublin, an Irish university in 2011.

John et al. (2012) also reports collaborations initiated between Health Volunteers Overseas, a non-governmental organisation and the Surinamese Ministry of Health through its Anton de Kom University of Suriname, Physiotherapy education programme in 1999 to help establish a BSc programme in Physiotherapy. In both Singapore and Suriname, expert Physiotherapists were contracted through collaborations with universities and non-governmental organisations respectively. Conversely, plans by UWC department of Physiotherapy to collaborate with advantaged universities within the Western Cape Province were not implemented as indicated in the following comment by the UWC PDs:

*“There was this dream that the three universities in the Western Cape should collaborate more so that you do not duplicate what other universities are doing. So that each university has its niche, for instance UCT were more experienced in rehabilitation intensive care, Stellenbosch in Orthopedics and Sports Physiotherapy and UWC, our niche is community-based rehabilitation. And then the students would be based in one university but they would be allowed to move and do modules in the other universities that would give more satisfaction to the students. That hasn't happened yet.”(PD2)*

According to the UWC PDs, historically advantaged universities were not willing to admit and upgrade DTPs. A PD recounts her experiences in the following statement:

*“Historically advantaged institutions that offer postgraduate degrees were not willing to admit people with diplomas. People were thinking that whenever you give access to people who would otherwise not qualify for admission you lower your standards.”(PD2)*

As a result of the challenges highlighted above, UWC had difficulties implementing clinical modules for diploma-trained Physiotherapists upgrading to BSc (Hons) and Master’s degrees as recommended by the ARI owing to lack of adequate training facilities and physiotherapy specialists to mentor students. Another PD explains the challenges that characterised the formation of the BSc (Hons) curriculum at UWC:

*“The only things at the time that we did not introduce were clinical modules because at that time UWC was not attached to an academic hospital. Stellenbosch was attached to Tygerberg Hospital, UCT was attached to Groote Schuur Hospital but UWC was not attached to any hospital. So that limited the opportunity for putting together a clinical module. Things have changed now, obviously, the province has made a number of changes. But as of that time, 1995 and 1996, UWC wasn’t attached to a teaching hospital. We thought of whether we should partner with other universities, neighboring universities, maybe at that time if we had partnered with UCT, then there would have been opportunity for clinical programmes. But I think at the time, post 1994, things were still dicey”. (PD3)*

The challenges highlighted by the UWC PDs regarding implementation of the ARI recommended curriculum in the early 1990s could be attributed to the historical past of the education system in South Africa during apartheid. To put this in context, according to the rector’s report, the University of the Western Cape (UWC) was established in 1959 by the then apartheid government as a higher education institution for the coloured sector of the South African population (UWC Rector’s report, 2011). Institutions for the oppressed people like UWC were not designed to engage in research and postgraduate studies, but merely to provide lower levels of the South African labour force. However, in the 1980s UWC declared its intention to engage in research and promote postgraduate education in the face of challenges unique to historically disadvantaged institutions such as limited resources (UWC Rector’s report, 2011). According to Ramklass (2013), the challenge of limited resources faced by historically

disadvantaged institutions was due to social inequalities and disparities that existed prior to 1994 in South Africa. Furthermore, although the PDs acknowledged the importance of clinical modules and basic sciences, some argued that they did not see the need to give students with prior education in Physiotherapy more content as the ARI report did not state that DTPs were deficient clinically:

*“By the time people came to do these degrees, they had usually worked, they had a lot of experience and I didn’t see the need to pump them full of more knowledge” (PD1)*

Another UWC PD added:

*“The report did not say that they were deficient clinically, no! The report acknowledged their clinical expertise but that they were deficient in the area of research methods. So the goal therefore was to introduce research methods in order to help the students know how to use evidence” (PD3)*

This explains why DTPs from other African countries were admitted in the fourth year (Honours year) of the UWC BSc (Hons) degree programme. Students from other African countries were however not part of the traditional BSc (Hons) degree class but belonged to a parallel Honours class of international students. This researcher had a privilege to peruse through the ARI report which the UWC curriculum designers made reference to and indeed, the report did not explicitly and comprehensively state the actual educational needs of diploma-trained Physiotherapists in Africa as discussed in section 4.2.1.3. Moreover, as highlighted earlier in the aforementioned section, UWC did not conduct any educational needs analysis for DTPs in Africa as they simply sought to implement the ARI report especially as far as upgrading DTPs was concerned.

Although some UWC PDs argued that DTPs pursuing a one year BSc (Hons) degree programme had vast clinical practice experience prior to commencing the programme, Hussey, Wong and Connell (2013) report that Physiotherapy students on a similar one year conversion programme in Singapore spent four (4) weeks of clinical placement in Ireland as part of overseas clinical immersion programme. This may be to accommodate the application of additional knowledge and skills in order to realise the learning outcomes required for a degree in Physiotherapy.

Furthermore, studies have shown that the approximate number of hours of clinical practice in most Physiotherapy degree programmes is 1000 hours of supervised “hands on” clinical education and practice (Blake, Cusack, Doody & Hurley, 2007; Bithell, 2007; Skinner, 2007; Redenbach & Bainbridge, 2007; Hager-Ross & Sundelin, 2007).

The study by Skinner (2007) reported that BSc students undertake clinical placements in tertiary care/cardio-pulmonary, musculo-skeletal, and neurological Physiotherapy and community-based placement. Even though literature from institutions training Physiotherapists at diploma level in Zambia (Teveta, 2005) and Kenya (Kenya Medical Training College, 2014), shows that diploma students undergo 1 495 and 1 020 hours of clinical practice respectively, one would argue that the learning outcomes required for diploma programmes in Physiotherapy are not the same as the ones required for degree programmes in the same field. According to Mutula (2011) and Assie-Lumumba, (2006), universities serve as generators of more advanced knowledge, scholarship and innovation while colleges focus on acquisition of technical skills required to perform a specific task without necessarily availing the learner an opportunity to acquire competence in critical thinking and a broader knowledge base. Thus, clinical practice for professional degree programmes allows for application of degree level knowledge and skills.

A review of the initial UWC BSc (Hons) Physiotherapy conversion programme module descriptors confirmed the absence of clinical practice in the curriculum. Table 4.2 below shows the initial modules implemented by UWC.



Module number	Module title	Number of Hours		Total	Credits
		Theory	Practical		
<b>First Year (BSc. PT)</b>					
1.	Research Methodology	370	30	300	30
2.	Applied Statistics 501	172	28	200	20
3.	BSc (Honours) Research Project	-	-	-	-
4.	Disability and Rehabilitation	200	0	200	20
5.	Maternal and Child Health	-	-	-	-
6.	Care of the Elderly (Gerontology)	-	-	-	-
7.	Health Policy and Administration	-	-	-	-
8.	Exercise Physiology	172	28	200	20
9.	Woman's Health	-	-	-	-
<b>Second Year (MSc. PT)</b>					
<b>1.</b>	Physiotherapy MAG Thesis				<b>120</b>

**Table 4.2: Initial Course Structure: The UWC BSc (Honours) Conversion Programme**

The PDs further added that the proposed modules were in accordance with the recommendations of the African Rehabilitation Institute. They substantiated the choice of modules as follows:

*“The Honours programme was basically designed to fill in the gaps that the diploma people didn't have and the strands were around providing people with a scientific basis for an aspect of Physiotherapy. So people could start reading articles and looking at evidence, examining evidence, and looking at what evidence is best for an aspect of physiotherapy”. So we had research methodology, which is obvious you need to have in Honors, evidence-based practice, disability and rehabilitation, policy development and then an Honours degree research project.” (PD3)*

Another PD added:

*“Because research was not part of the diploma course and people had to have knowledge and insight into what the research methods are. So it was the research methods and statistics, health promotion, disability and rehabilitation, gerontology, health policy and administration, literature review, and a mini thesis (that was introduced)”. (PD2)*

The recommendations of the ARI justify the choice of modules in Table 4.2, though there is a minor but expected variance, between the modules shown in Table 4.2 and the ones which were being delivered at the time of the study as shown in Table 4.3 below

Module number	Module title	Number of Hours		Total	Credits
		Theory	Practical		
<b>First Year (BSc. PT)</b>					
1.	Research Methodology	370	30	300	30
2.	Systematic Review	200	0	200	20
3	Evidence-based Practice	-	-	-	-
4	Applied Statistics 501	172	28	200	20
5	Disability and Rehabilitation	200	0	200	20
6	Rehabilitation of Children	-	-	-	-
7	Health Promotion	-	-	-	-
8	Movement Science	-	-	-	-
9	Applied Exercise Science	172	28	200	20
<b>Second Year (MSc. PT)</b>					
1.	Physiotherapy MAG Thesis				120
2.	Orthopedic Manual Therapy	-	-	-	-

**Table 4.3: Current Course Structure: The UWC BSc (Hons) and Master’s Programmes**

The variance in the module composition of the original and current curricula highlighted in Tables 4.2 and 4.3 above demonstrate that the UWC BSc (Hons) and Master's programmes have evolved over the years. Interviews with senior lecturers in the Physiotherapy Department revealed the following:

*“If we look at the modules firstly, my understanding was that the students who come in might need a bit of a clinical approach, in terms of Physiotherapy and to improve the Physiotherapeutic skills. For example, I taught disability and rehabilitation module and the objective was they always wanted to improve their Physiotherapy skills. With regards to movement science, the students came in with what was seen as limited skills in terms of Orthopedic Manual Therapy (OMT) but they first had to do basic science called movement science prior to progressing to advanced level (OMT). Thus we had the module, movement science which was a preparatory course for OMT. The changes in the modules were because of the students' needs that we identified” (Lecturer2)*

*“We made a decision earlier on that if we have less than three students who are interested in doing a module then it won't be offered. Especially, Maternal and Child Health was one of those modules that wasn't on demand as most of the students were more interested in the OMT related stuff, Movement Science and Applied Exercise Science and so that was one of the modules that didn't have a lot of students especially in the earlier years when we had smaller intakes. We struggled with that “how do we justify teaching a module for one or two students and taking into consideration the manpower that goes into it?” Those were some of the issues related to that”. (Lecturer 1)*

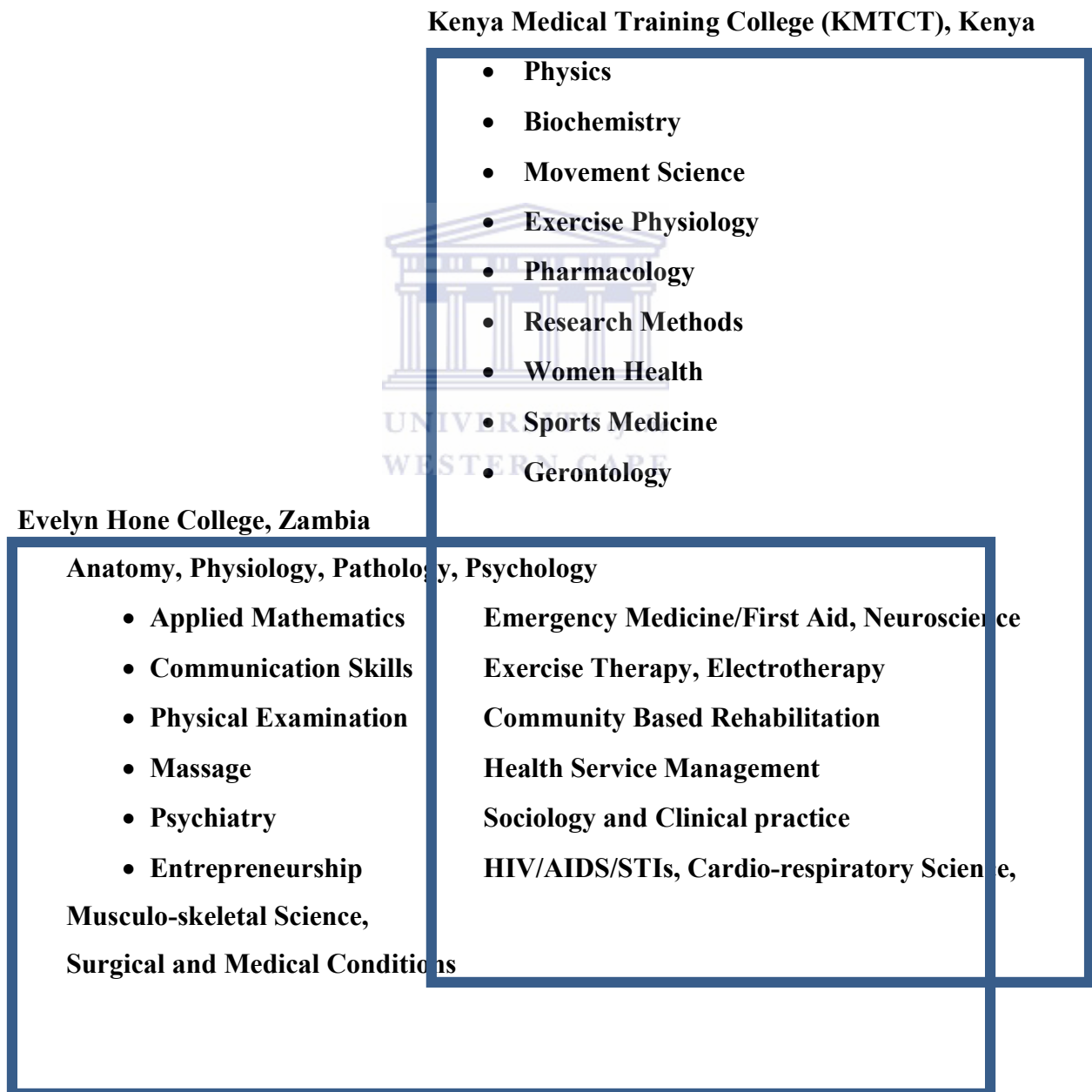
With regard to the discontinuation of the Honours mini-thesis as research project for the BSc (Hons) programme, one of the lecturers had the following to say:

*“With regards to the Honours mini thesis, remember the first time they had Honours and masters and as part of that Honours, the research project was a mini thesis and as part of the current Honours, the research project is a systematic review and the development of a proposal, so that's the position” (L2)*

The interview extracts above, demonstrate that the changes in the curriculum were inspired by students' needs as majority of students preferred Physiotherapy-related courses to external ones such as maternal and child health and health policy and administration. The Department of Physiotherapy also replaced the BSc (Hons) research project with secondary research such as systematic reviews in order to foster evidence-based practice among students. Relative to the research project that required collection of primary data, systematic reviews rely on collection of secondary information in form of journal articles. Thus, it could be argued that systematic reviews are less laborious and may not require ethical clearances that normally characterise primary research. In addition, systematic reviews of randomised trials are superior to other forms of research and as such may lead to increased chances of publications by students in internationally recognised journals.

Conversely, learning outcomes for a similar one-year BSc Physiotherapy degree programme was developed by mapping the learning outcomes achieved by successful graduation from the three-year diploma programmes with the complete set of programme outcomes for the four-year BSc in Physiotherapy in the host country (Hussey, Wong & Connell, 2013). The mapping process, helped curriculum designers in the Singapore and Ireland collaboration to arrive at modules that would meet anticipated learning outcomes. Subsequently, this process saw the development of five (5) modules including six (6) weeks in Ireland with four (4) weeks on clinical placement as reported earlier. Save for the Singaporean example, virtually nothing has been reported in the scientific literature on how Physiotherapy educational transitions from diploma to Bachelor's degree occurred in other countries. Although the UWC BSc (Hons) would be considered a postgraduate qualification compared to the Singaporean case, the latter has been useful in appreciating the processes involved in developing conversion programmes. This researcher however, argues that the case in point appears more complex than the Singaporean one as the programme under discussion drew Physiotherapy students with diploma qualifications from different African countries with varying diploma curricula as shown in Figure 4.3 below. It is therefore, the candid view of the researcher that diploma programmes offered by sending countries should have been reviewed to inform the development of the conversion programme.

This view is consistent with the definition of recognition of prior learning by the National Standards Bodies Regulations of South Africa (1998) which states that “recognition of prior learning means the comparison of the previous learning and experience of a learner against the learning outcomes required for a specified qualification. The diagram below highlights the differences and similarities in the contents of two of the sending countries and thus reaffirming the need for a more careful assessment of prior learning.



**Figure 4.3 Similarities and Differences between Kenyan and Zambian Diploma Physiotherapy Programmes**

Literature obtained from the Zambian (Taveta, records 2005) and Kenyan (Kenya Medical Training College records, 2014) colleges shows a variance in the content of the diploma programmes. The modules in the middle box represent modules common to both programmes. This therefore explains the importance of understanding the content and learning outcomes achieved from each diploma programme and then mapping them with the learning outcomes of the four-year BSc (Hons) degree of the host country. Further, the diploma training programmes in Kenya and Zambia show different learning time per module though they share the same duration of three years as shown in Table 4.4 below.

Module number	Module title	Number of Hours per country					
		Zambia			Kenya		
		Theory	Practical	Total	Theory	Practical	Total
1.	Human Anatomy	312	-	312	152	40	192
2.	Human Physiology	260	-	260	122	6	128
3.	Pathology	104	-	104	156	4	160
4.	Electrotherapy	291	-	291	42	86	128
5.	Therapeutic Exercises	460	-	460	47	81	128
6.	First Aid	75	-	75	8	24	32
7.	Psychology	52	-	52	32	-	32
8.	Nursing	75	-	75	10	22	32
9.	Sociology	52	-	52	32	-	32
10.	Clinical Practice	-	1 495	1 495	-	1 020	1 020
11.	Rehabilitation	195		195	40	20	60
12.	Health Service management	104		104	64	16	80
<b>Total Hours allocated per programme</b>				<b>3 475</b>			<b>2 024</b>

**Table 4.4: Module Duration Differences between the Zambian and Kenyan Diploma Programmes**

The variances in learning time per module are obvious. Further, it is worth noting that the learning time differences, between modules like Anatomy, Physiology, Electrotherapy and Exercise Therapy is significant. With the exception of Pathology, these findings reveal that the Zambian diploma programme had more learning time allocated to the modules shown in Table 4.4 above. This demonstrates the need for a more careful analysis and reveal of diploma curricula in sending countries before arriving at what must be included in the BSc (Hons), conversion programme.

### **Summary of Theme Four**

The researcher describes the formation of the UWC BSc (Hons) and Master's degrees. Further, the study shows how the programme contents were arrived at. The researcher has demonstrated the commonalities and differences between two diploma programmes in terms of the gaps that exist between the module composition and learning hours per module in the sending countries. Consequently, the researcher highlights the need to review diploma curricula or syllabi for sending countries in order to arrive at appropriate modules and learning time. In addition, the need for a learning needs analysis conducted to identify actual learning needs of students is obvious.

### **4.4 EDUCATIONAL PROGRAMME EVALUATION**

The ARI made clear its intent to conduct curriculum evaluations in order to ensure training programmes met the rehabilitation needs of the African continent. Hence the current study is a step in the right direction. The following statement extracted from the ARI document reaffirms the importance of educational evaluation:

*“The experience of students, lecturers and professional bodies over the first four years will enable ARI in collaboration with the training institutions to carry out formative evaluation so as to expand and reformulate the objectives to suit African needs.”(ARI Page 1)*

Studies (Bithell, 2007; Blake, Cusack, Doody & Hurley, 2007) have reported on the need to periodically conduct curriculum evaluations in order to ensure currency and congruence with current practice requirements and most universities review their curricula every five (5) years. Therefore, the ARI recommendation demonstrates that the institute consulted widely with experts and training institutions.

#### **4.5 CONCLUSION**

The chapter has rendered the UWC BSc (Hons) and Master's programme theory by describing the programme context; the educational needs identified by the ARI, the programme objectives, target group and entry-requirements. Thereafter the researcher has discussed the programme development process and challenges faced by PDs at implementation stage. To put the discussion in context, the chapter presents the BSc. (Hons) and Master's Course structure and then discusses its development relative to the Kenyan and Zambian diploma programmes. It is clear, that the curriculum prescribed by the ARI was for a four (4) year BSc. (Hons) Physiotherapy programme and no alternative routes or exemptions were provided in the document for in-service DTPs seeking to upgrade their credentials from diploma to BSc (Hons). Therefore, the UWC DTPs used their discretion to design a conversion program (BSc. Hons) for DTPs with the sole intent of empowering African Physiotherapists with the necessary qualifications required to introduce degree programmes in their respective countries and consequently, increase access to Physiotherapy training in Africa. However, in doing so, the study has demonstrated that the UWC PDs did not conduct any needs analysis, thus, the modules implemented were dependent on the available staff at the time, though modules like Movement Science, Orthopedic Manual Therapy and Applied Exercise Science were later introduced in the curriculum as shown in Table 4.3. The addition of new modules to the curriculum demonstrates UWC's resolve to meet emerging students' needs. The next chapter describes the programme implementation process from the perspective of Kenyan, Rwandese, Tanzanian and Zambian UWC postgraduates.



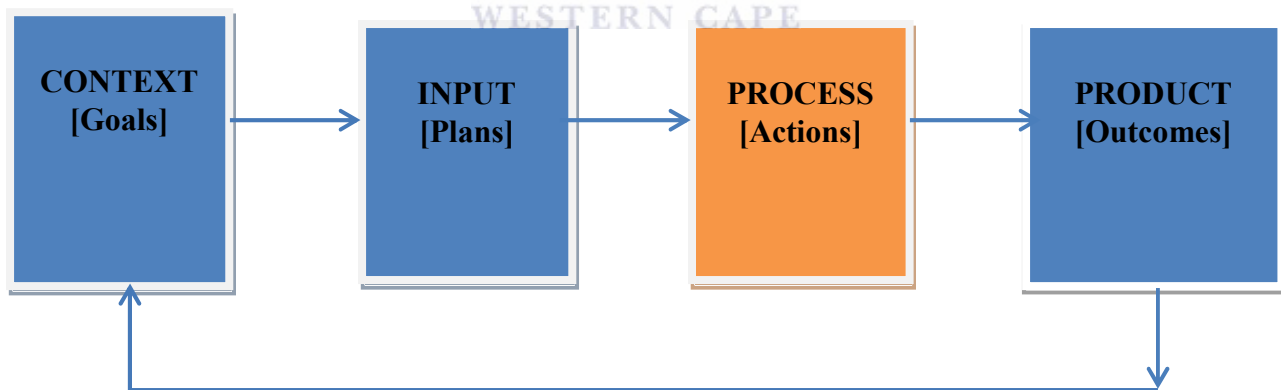
## PHASE TWO: PROCESS

### CHAPTER 5

#### POSTGRADUATES' PERCEPTIONS OF THEIR EDUCATIONAL EXPERIENCE AT THE UNIVERSITY OF THE WESTERN CAPE (UWC)

##### 5.1 INTRODUCTION

In this chapter, the findings of the in-depth interviews with UWC Physiotherapy postgraduates about their perceptions of their educational experience with the UWC BSc. (Hons) and Master's Physiotherapy programmes are presented. The chapter attempts to meet objective two whose aim was to explore the postgraduates' perceptions of their educational experience at UWC. The chapter describes the UWC programme implementation theory from the perspective of the UWC postgraduates using the CIPP framework as illustrated in Figure 5.1 below. The implementation process theory is then discussed relative to the programme theory presented in Chapter Four.



**Figure 5.1: The Programme Implementation Process Evaluation Using the CIPP Framework**

Furthermore, the chapter presents and describes learning activities undertaken relative to training goals highlighted in Chapter Four. It begins with a description of graduates who participated in the study. The findings are presented in form of themes that emerged in the analysis.

## **5.2 METHODS**

In-depth interviews were conducted in four African countries (Zambia, Tanzania, Kenya and Rwanda) with twenty-seven (27) UWC postgraduate participants. The graduates were practicing in their respective countries as physiotherapy clinicians or academics at the time of the study.

### **5.2.1 Zambian Postgraduate Participants**

The SADC country, Zambia had ten (10) participants. The participants included five pioneer postgraduates of the UWC BSc. (Honours) and Master's degree programmes lecturing at the University of Zambia, School of Medicine. Among them was the first foreign postgraduate to enroll into the BSc (Hons) and Master's programmes in 1996 at UWC, while the other four were the first group of students to be trained at UWC in 1997. The other five constituted two pioneers of a BSc degree in Physiotherapy at a private medical university and three Physiotherapy clinicians stationed at general and tertiary hospitals in Zambia and were part of the 2005, 2008 (3) and 2011 UWC cohorts respectively. Three of the postgraduate participants from the 1996 and 1997 UWC intakes had furthered their studies and progressed to obtain PhDs from higher education institutions in South Africa, Zambia and Australia.

WESTERN CAPE

### **5.2.2 Tanzanian Graduate Participants**

In Tanzania, five postgraduates participated in the study. Out of the five, four worked for one of the largest hospitals at the time of the study and one of them was pursuing further (PhD) studies in South Africa. The fifth participant was a Physiotherapy clinician with four years of lecturing experience after graduating with a Master's degree from UWC. However, none of the Tanzanian participants were involved in academia at the time of the study. The Tanzanians were part of the 2003, 2006, 2007, 2008 and 2011 UWC cohorts respectively.

### **5.2.3 Kenyan Graduate Participants**

In Kenya, eight postgraduates were interviewed; three of whom pioneered a BSc degree programme in Physiotherapy at the Jomo Kenyatta University of Agriculture and Technology

(JKUAT) while another three were the pioneers of a BSc degree programme in Physiotherapy at MOI University in Kenya.

The other two operated their own Physiotherapy clinics in Nairobi. Except for the two self-employed Physiotherapy clinicians and one academic, the rest had enrolled for further studies (PhD) in South Africa. The difference between JKUAT and MOI Physiotherapy programmes was that JKUAT also enrolled in-service DTPs on a part time basis while MOI enrolled only A-level students. In Kenya, participants had been part of the 2003 (2), 2005, 2006, 2007, 2008, and 2011 (2) UWC BSc (Honours) and Master’s cohorts respectively.

#### 5.2.4 Rwandan Graduate Participants

Four Rwandese UWC postgraduates participated in the study, one of them worked for the University of Rwanda as an academic while the other three were Physiotherapy clinicians at military and teaching hospitals. The academic had also enrolled for further (PhD) studies at a higher institution in South Africa at the time of the study. The Rwandese participants were part of the 2007 (2), 2008 and 2009 intakes respectively. Table 5.1 below summarises the participants for this part of the study.

In summary, cohorts represented in the study included, 1996, 1997, 2003, 2005, 2006, 2007, 2008, 2009 and 2011 UWC postgraduate students.

Country	No. of participants	No. pursuing further studies	Year Range
<b>Zambia</b>	10	3	1996 – 2011
<b>Tanzania</b>	5	1	2003 - 2011
<b>Kenya</b>	8	5	2003 - 2011
<b>Rwanda</b>	4	1	2003 - 2010
<b>Total</b>	27	10	

**Table 5.1: Participants (N=27)**

### **5.3 PERCEPTIONS OF THE POST GRADUATES' EDUCATIONAL EXPERIENCE AT UNIVERSITY OF THE WESTERN CAPE**

Interviews with postgraduates highlight the differences between what students expect to receive and their perception of actual delivery. Exploring and comparing the perceptions of postgraduates practicing in different countries may provide necessary information on whether or not the programmes met students' needs and expectations. This is also to ensure study abroad experiences produce the kind of learning, development, and transformation that is intended and to meet new global-diversity learning needs. Interviews with postgraduates would further provide evidence of the realization of the objectives for which the programmes were implemented.

The following main themes emerged in the analysis: postgraduates' educational background and work experience prior to being admitted in the UWC BSc (Honours) and Master's programmes, postgraduates' motivation for enrolling into the UWC postgraduate programmes, postgraduates' expectations and needs prior to enrolling into the BSc (Honours) and Master's programmes, postgraduates' perceptions of their educational experience at the University of the Western Cape, postgraduates' perceptions of the implementation of the BSc (Honours) and Master's programmes, postgraduates perceptions of learning and teaching facilities at UWC.

#### **5.3.1 Postgraduates' Education Background and Work Experience Prior to Enrolling in the BSc (Hons) and Master's Programmes at UWC**

Postgraduates spoke of the state of Physiotherapy education and practice in Africa including their education background and work experiences before the UWC BSc (Honours) and Master's programmes were introduced.

### 5.3.1.1 Postgraduates' Education Background before Enrolling at University of the Western Cape

All postgraduates spoke of limited education facilities for Physiotherapists (PTs) in their respective countries and Africa as a whole. Postgraduates from East African and SADC countries such as Rwanda, Kenya, Tanzania and Zambia underwent a three-year diploma programme in Physiotherapy as indicated in the following interview extracts:

*“I went to Kilimanjaro Christian Medical College (KCMC); by then it was the only institution offering Diploma in Physiotherapy for Tanzania and other African countries like Malawi. Many of the students from Malawi were also trained at KCMC. The programme was a three-year diploma course in Physiotherapy.” (Tanzanian participant)*

*“My first tertiary education was a three-year programme in Physiotherapy at Kigali Health Institute, now College of Health Sciences under University of Rwanda.” (Rwandese participant)*

*“I graduated in 1988 from the College of Health Professions in Nairobi, which is the current Kenya Medical Training College (KMTC) with a Diploma of Physiotherapy after a three year programme.” (Kenyan participant)*

*“I did my diploma training at Evelyn Hone College (EHC). I did it for three years. I went into College in 2003 and I completed in 2005.” (Zambian participant)*

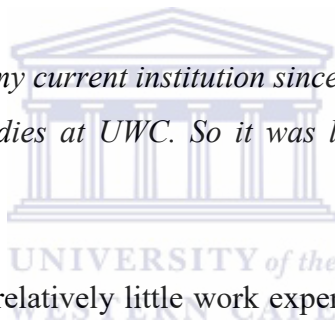
The quotes clearly highlight the nature of Physiotherapy training that was offered in most African countries at the time. Training was also limited to specific institutions such as Zambia's EHC, Kenya's KMTC, and Rwanda's Kigali College of health sciences and Tanzania's KCMC. The challenge of limited Physiotherapy training opportunities in Africa has also been reported elsewhere (Frantz, 2007).

Furthermore, some countries like Rwanda did not have domestically DTPs until 1999 (Sander, Urimubenshi, Chevan, Mann, & Dunleavy, 2015) while other countries such as Malawi had to send students to other African countries for Physiotherapy education at diploma level (Frantz, 2007). Thus the limited Physiotherapy training opportunities justified the establishment of the UWC BSc. (Honours) and Master's programme as indicated by the UWC PDs in Chapter Four. The UWC BSc (Honours) was a conversion programme specifically targeted at DTPs.

### **5.3.1.2 Postgraduates' Work Experience Before Enrolling at University of the Western Cape**

Many postgraduates had worked for many years as Physiotherapy clinicians before enrolling in the UWC BSc (Hons) and Master's Physiotherapy programmes.

*“ . . . I had worked here at my current institution since 2001 up to 2011 when I decided to go and advance in my studies at UWC. So it was like 10 years of work experience.”*  
*(Tanzanian participant)*



Some postgraduates however had relatively little work experience before enrolling in the UWC BSc. (Hons) and Master's programmes.

*“I worked for two years in a government hospital . . . general hospital. And then 2008, that's when I went to University of Western Cape to do my Honours.”**(Zambian participant)*

Many postgraduates from Zambia and Kenya spoke of their involvement in Physiotherapy training before they sought further education at the University of the Western Cape.

*“I was the best student in our class so they asked me if I could join in on the staff development. . . I was sent to do another diploma in education which was run by the University of Zambia in Luanshya, which I did for a year before finally joining Evelyn Hone [College] in 1988.”* *(Zambian participant)*

*“I was deployed in one of the provincial hospitals, where I worked from 1986 to end of 1989. I then joined KMTC in Nairobi as a lecturer where I worked from 1990 up to 1994 when I joined department of medical education where I was trained as a medical lecturer, after pursuing a higher diploma in medical education for one and half years. Thereafter, I continued teaching until 2007, when I got a chance to go to UWC to do my BSc (Hons) and Master’s programmes.” (Kenyan participant)*

The interview transcripts above demonstrate that postgraduate participants had work experience ranging from two to over twenty years before they sought further education in Physiotherapy. It is also clear that some participants worked in academia or clinical areas prior to the UWC programmes. The relatively long work experience at diploma stage before seeking further studies at UWC corroborates with the limited Physiotherapy training opportunities at the time as earlier indicated in this chapter and is also consistent with the findings reported in Chapter Four. Pioneer UWC postgraduates from Zambia, constituted the greater percentage of long serving DTPs prior to UWC training and four of the five graduates had worked as educators at college level prior to upgrading their credentials at UWC while Kenya had two participants who worked as educators before they joined the UWC BSc (Honours) and Master’s programmes. The only difference however was that the Zambian UWC postgraduates were the pioneering students in 1996 and 1997 while their Kenyan counterparts though with similar work experience only enrolled in the UWC BSc (Honours) and Master’s programmes a decade later. Unlike Kenya and Zambia, where participants had a mixture of clinical and academic work experience, all Tanzanian participants worked in clinical areas before seeking further education at UWC.

### **Summary of Theme One**

It is evident that Physiotherapy education in most African countries was limited to diploma level prior to the introduction of the UWC BSc (Honours) and Master’s programmes. Kenya, Rwanda, Tanzania and Zambia, each had one training college where Physiotherapy students could be admitted for a three-year diploma programme thereby rendering the programmes highly competitive due to lack of capacity for more students. In addition, limited Physiotherapy

educational facilities had a bearing on the professional development of PTs and indeed, the profession at large.

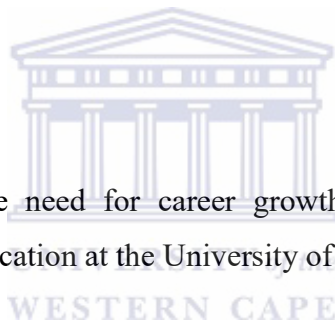
Although the aforementioned countries had trained PTs, all of them were trained by educators with diploma qualifications in Physiotherapy. Furthermore, the longevity of the work experience reported in this study suggests absence of continuing professional development opportunities in the said countries.

### **5.3.2. Postgraduates' Motivation for Pursuing BSc (Hons) and Masters Programmes**

Participants highlighted their motivations for applying for admission to the UWC BSc (Hons) and Master's programmes and these included career development and the flexible admission criteria of UWC.

#### **5.3.2.1 Career Development**

Many postgraduates spoke of the need for career growth in Physiotherapy as one of the motivations for seeking further education at the University of the Western Cape.



*“I think it became inevitable that we needed to progress. Physiotherapy was really one of those professions in the country that was really lagging behind.” (Zambian participant)*

This quote demonstrated the state of the Physiotherapy education and practice in most African countries at the time. It also reaffirms the fact that the Physiotherapy profession was underdeveloped in Africa as highlighted in the ARI document reported in Chapter Four. In addition, other African diploma-trained Physiotherapists felt the need to further their Physiotherapy education in order to upgrade their knowledge and skills above that of a diploma-holder as evidenced in the following statement:



*“I decided to go to advance because I have been working with the diploma for many years and you know knowledge is progressive, so I told myself that I have been practicing the things I knew from diploma level for more than ten years so I was looking for something new to advance my career.”(Tanzanian participant)*

Furthermore, postgraduates spoke of the gaps they identified in their practice as PTs such as low competence and knowledge levels as part of the motivations for seeking further education in Physiotherapy at the University of the Western Cape:

*“I found that I was incompetent in my duties. So I wanted to broaden my knowledge in Physiotherapy.”(Kenyan Participant)*

*“I felt that I needed to further my knowledge and to expand my knowledge and to go on with my career because you cannot stay as entry level qualification you have to add some more.” (Tanzanian participant)*

*“As you are working you get to very complex cases because the world and conditions keep changing. One may even have the work experience but you may be using old, old techniques if you are not exposed to the academic world”. (Tanzanian participant)*

*“I could see there were some gaps . . . in my clinical practice and then eventually I felt it would be good to go for further studies. Basically that’s what prompted me to go for further studies.”(Kenyan participant)*

The quotes indicate that the participants became discontented with regard to their knowledge and Physiotherapy skills. The void they felt motivated them to aspire for new knowledge and skills related to Physiotherapy practice. This void and subsequent desire for new knowledge and Physiotherapy skills could have been necessitated by new challenges that required an equal application of new knowledge and skills. As highlighted by the Tanzanian participant, irrespective of ones number of years in practice, the solution lied in acquiring more knowledge and new skills as the participants could no longer solely rely on the knowledge they acquired at diploma level because the world had changed and rendered their knowledge, inadequate to

address current health challenges and that led to perceptions of inadequacy or professional practical skills deficit as also reported by Perry, Green and Harrison (2011). Therefore, the changing health burden and the participants' need to progress in their career brought to the fore the importance of continuing professional development (CPD) among DTPs in Africa. The UWC BSc (Honours) and Master's Programmes provided a platform for CPD in Africa as is the case with all postgraduate degree programmes (Tsimtsiou, Sidhu & Jones, 2010). The difference however lies in the fact that Physiotherapy education in most African countries remained underdeveloped for over twenty (20) years as evidenced by the work experience of some participants.

Furthermore, postgraduates reported that professional socialisation through conferences and workshops was one of their motivations to want to enroll for the BSc (Hons) and Master's degree programmes at UWC. Postgraduates added that they were motivated to pursue further education in Physiotherapy at UWC after interacting with UWC postgraduates and faculty.

*"I had an opportunity to meet people from Kigali Institute of Health Sciences who did their Master's degree at UWC. Then I got interested."* (Rwandese participant)

Another postgraduate said:

*"I was privileged at the point to meet the late Professor Matiko (not real name) and also to meet professor Kanab (not real name) at the WCPT congress in Washington and they began to talk to me about the need for Zambia to begin to send people to study. And it was at that point, that was my actual contact with UWC and immediately I got back home, I actually submitted my application and I was in a way, their guinea pig student."* (Zambian participant)

The quotes suggest that professional socialisation and gatherings such as conferences and workshops stimulated professional inadequacy when the postgraduates, then DTPs compared themselves to colleagues (Cooley, 2008). Similarly, Cooley (2008) reported that diploma-trained nurses in Ireland experienced professional inadequacy when they compared themselves with the new nursing graduates following the introduction of nursing degree programmes in that country.

It would therefore appear that the UWC postgraduates perceived the BSc (Honours) and Master's programmes as an important source of re-invigoration and restoration of professional dignity.

### **5.3.2.2 Flexible Admission Policy for DTPs at University of the Western Cape**

Postgraduates hailed the admission policy of the University of the Western Cape as well as the cost friendliness of the degree programmes offered by the University. A Kenyan postgraduate stated that UWC was the only university in Africa admitting DTPs:

*“The advantage of UWC was that, I think it was the only university that considered diploma-holders to be eligible for a conversion programme. University of the Western Cape offered the best mode of transition to higher education because at UWC, you can do your BSc (Honours) degree and then you proceed for Master’s. That was the best mode of transition that favored most of us, and that is why the programme became very popular.”(Kenyan participants)*

The quote corroborates the findings presented in Chapter Four on limited training opportunities for DTPs in Africa. It also highlights the important role UWC played in upgrading the credentials of PTs in most African countries from diploma to BSc (Honours) and Master's Degrees. Undoubtedly, UWC's flexible admission policy motivated majority of African DTPs to seek admission in the BSc (Honours) and Master's Programmes in South Africa. The quote is also consistent with the Rwandan finding that majority of faculty at the only Physiotherapy training institution in that country had advanced Master's degrees obtained at institutions in South Africa (Chevan, M'kumbuzi & Biraguma, 2012). Furthermore, relative to other institutions offering Physiotherapy conversion programmes in the UK (Kell, 2006), the cost friendliness of the University of the Western Cape in South Africa contributed to its popularity in Africa for Physiotherapy conversion programmes as highlighted by some participants below:

*“One of our colleagues gave us the good news, that the University of Western Cape offers an affordable conversion programme in Physiotherapy.” (Kenyan participant)*

*“In the UK, it’s expensive, in Australia the BSc programme was very costly but in South Africa, the BSc programme was affordable. I was able to raise my tuition and accommodation.” (Kenyan participant)*

It is clear that the UWC BSc (Honours) and Master’s programmes provided an African solution to the African needs and hence drew participants from various parts of the continent.

### **Summary of Theme Two**

The need for career growth and performance gaps in the practice of DTPs motivated them to seek admission at UWC. Furthermore, the current study demonstrates that a range of factors were responsible for making UWC a university of choice for many DTPs in Africa. First, University of the Western Cape had the most flexible admission policies for DTPs intending to upgrade to BSc (Honours) and eventually Master’s degrees. The BSc (Honours) programme at UWC was a parallel programme specially designed to meet the training needs of DTPs in Africa, in an effort to transition Physiotherapy training from diploma to Baccalaureate and higher degrees in African countries with limited training opportunities. Second, UWC had the most affordable tuition fees relative to universities offering similar conversion programmes in other parts of the world. Consequently, UWC became the sole destination for DTPs upgrading to BSc (Hons) and Master’s Degrees.

## **5.4 POSTGRADUATES’ EXPECTATIONS AND NEEDS PRIOR TO EDUCATIONAL EXPERIENCE AT UWC**

The postgraduates spoke of their expectations before enrolling in the UWC BSc (Hons) and Master’s degree programmes. Their expectations included; acquiring knowledge in research, enhancing clinical competencies and gaining more knowledge in basic sciences like Pathology and Neurology among other sciences.

### **5.4.1 Acquire Knowledge on Research Methods**

When asked about their expectations from the BSc (Honours) and Master’s programmes, post graduates indicated that they expected to equip themselves with research skills that would enable them conduct clinical research and improve their communication skills.

*“My expectations were that at a degree level, you can be trained to do research so that you could do clinical research.” (Kenyan participant)*

This demonstrates the desire to acquire research skills so as to either conduct or participate in clinical research. Most likely, this expectation to learn about research methodology was driven by the fact that the course was either not well taught or simply not covered at all at diploma level. The quote below justifies the expectation of graduates regarding research methods:

*“You know in our training during the diploma period, there were many things that we never got in the details and a good example is research. I cleared college without getting to know what research is all about. I did a few classes in which I hardly understood what it was all about. Research was a major missing component in our diploma training” (Kenya participant1)*

*“One of the things that you actually don’t get during training at a diploma-level is research component, you are given too superficially research you don’t have like the advanced methods of doing research so that’s what one of my expectations was that if I understand at a degree level you can be trained to do research so that you could do clinical research in things like that.” (Tanzanian participant)*

*“Research was very key for me, I wanted to broaden my reading capacities so that I could be able to handle and even communicate effectively when I represent the department at whatever forum.” (Kenya participant)*

The need to learn about research methods was one of the major reasons for undertaking a BSc (Honours) and Master’s degree programme, which concurs with outcomes from other studies (Frantz et al., 2010; Louw et al., 2007; Watkins, 2011). Postgraduates expected they would learn about research and this was mostly cited by the Kenyan cohort. This could be due to personal interest resulting from either exposure to conference presentations or the need to implement evidence-based practice in the workplace.

Unlike other postgraduates without exposure to research, the Kenyan postgraduates as mentioned by a Kenyan participant, had a feel of research methods during their diploma training but felt the course was not delivered to their expectations hence the resultant desire for more content at BSc (Honours) and Master's level. The finding is also in agreement with the finding of the ARI which reported that DTPs lacked research methodology in their training. In similar fashion, Ilott and Bury (2002), reported that the research capacity of Physiotherapists was identified as a challenge a decade ago. A situation which led to a considerable growth in Physiotherapy schools offering postgraduate programmes in Africa (Louw et al., 2007), with the hope of building research capacity among Physiotherapists. Further, it could be argued that research methodology is a precursor to understanding evidence-based practice in Physiotherapy and healthcare. Thus, Physiotherapists are expected to be more proficient in the selection and application of current Physiotherapy techniques and have an advanced understanding of evidence-based practice for the benefit of patients.

#### 5.4.2 Enhance Clinical Competencies

The postgraduates spoke of their expectation to enhance their clinical competencies in management of various Physiotherapy conditions ranging from respiratory, neurology and orthopedic. They felt the need to upgrade the skills they learnt at college in order to match changing Physiotherapy practice.

*“I expected to upgrade the management skills of Physiotherapy conditions, because we were using old knowledge that we acquired at college. So I regarded the BSc as an avenue of upgrading that old knowledge to latest practice of Physiotherapy.” (Kenyan participant)*

*“I was expecting that I will learn more about the management of fractures, low back pain, spondylosis and something like spinal cord injuries.” (Tanzanian participant)*

*“My expectations were high as I thought I was going to be having practical sessions in terms of field work/clinical attachment ” (Rwandese participant)*

*“You know, we had training in Physiotherapy at diploma level and any BSc. Programme, in my thinking, even though I had no much clue of what to expect, but within whatever modules, I had expected clinical practice to be part of it.”(Zambian participant)*

The expectation of enhanced clinical competencies with regard to management of Physiotherapy-related conditions prior to enrolling into the BSc (Honours) and Master’s programmes was raised by Zambian, Tanzanian, Kenyan and Rwandan graduates equally. The quotes highlight a desire among participants to enhance clinical skills and exposure to a broad range of conditions, a finding confirmed by other studies (Petty, Scholes & Ellis, 2011; Perry, Green & Harrison, 2011). Participants in the current study expected to learn about a wide range of diseases in order to acquire knowledge and skills beyond diploma-level so as to operate at the level of a university graduate. Thus participants expected to acquire current knowledge on management of conditions especially those commonly managed by Physiotherapists such as orthopedic and neurologic conditions, a practice encouraged in all Bachelor of Physiotherapy programmes (Redenbach & Bainbridge, 2007). This could have been due to challenges experienced by participants in the said areas during their practice especially considering that all participants had worked for at least two years before enrolling for the BSc (Hons) and Master’s programme at UWC.

Considering the fact that South Africa is more developed relative to other African countries, postgraduates expected to be exposed to high-tech equipment in Physiotherapy, to be taught by specialists in various areas of study and to be placed in various clinical settings in South Africa so as to have a feel of different case management approaches abroad:

*“. . . Going to a country of a higher level, I expected to be exposed to the practice that happens there, so that you are able to make comparisons with what you are doing at home for the sake of standardization. Say for example, clinical placements in the South African setting where by you can go and have a feel of some mechanisation, for example some of the electrotherapy machines we were using in our home countries were outdated while others, there is no more evidence for them, but they are still in use. I was also expecting to be taught by doctors and Physiotherapists who are more experienced and*

*more trained compared to the diploma level teaching because you realized that at the diploma level, we actually had lecturers with diplomas like us.” (Kenyan participant)*

*“I was expecting to advance in the area where I was working previously . . . trauma, orthopedic and neuro-surgery (units) in order to improve my knowledge and skill. More so with exposure to another part of the world like South Africa, I was expecting to see more cases and improve treatment approaches.” (Tanzanian participant)*

*“I expected exposure to apparatus or machines that analyze movement. I learnt on Internet that other countries and universities have such laboratories where they analyse movement, what is called movement analysis . . .” (Rwandese participant)*

*“I was expecting to see how various cases are managed in South Africa in order to improve my knowledge.” (Zambian participant)*

Participants expected to gain more exposure to cases and case management of various conditions in South Africa partly due to the relatively low level of clinical training they were exposed to in their earlier training. Sander, Urimubenshi, Chevan, Mann and Dunleavy (2015) confirm that early training of PTs at the certificate, diploma and later at the Bachelor levels did not incorporate clinical reasoning at a level required for complex patient care often encountered in an African environment. Many African institutions training PTs at diploma level either lacked adequate training materials such as electro-physical and exercise equipment or had obsolete machines hence the participants’ expectation to be exposed to latest Physiotherapy equipment in South Africa. The expectation to be mentored by experienced Physiotherapy specialists and medical doctors in various areas of study could be explained by the fact that majority if not all lecturers in most African colleges were diploma holders in Physiotherapy or other health-related disciplines and as a result lacked depth in certain areas, an interpretation endorsed by Frantz (2007) who highlighted the need to upgrade Physiotherapy educators from diploma level to Master’s and subsequently PhD so as to ensure quality of Physiotherapy education in Africa. The interview extracts above were confirmed by the work of Petty, Scholes and Ellis (2011) which reported that Physiotherapy Master’s students expected to enhance their knowledge and skills progressively through teaching from a skilled and informed tutor.



The extracts also demonstrate that participants were keen to acquire new knowledge which would help them develop Physiotherapy training and practice in their respective countries, a finding endorsed by other studies (Sherwood & Liu, 2005; Watkins, 2011). The study by Watkins (2011) reported that international students had an expectation that the Master's programme would help them develop nursing and the nursing practice in their country.

### **5.4.3 Acquire Deeper Understanding of Basic Sciences at BSc (Honours) Level**

Postgraduates spoke of their expectations for more basic sciences in the UWC BSc (Hons) programme. They expected to expand their knowledge of basic sciences learnt at their respective colleges. The need for basic sciences like clinical practice was a recurrent theme in this study.

*“Well, my expectation really was, I’m going to learn a lot more science. I thought I was going to delve into a lot of science. I mean after listening to scientific presentations at international conferences. . .”*

*“I expected a bit of a refresher course in basic sciences in order to appraise me in doing a higher degree.”*

The interview extracts indicate participants' expectations of a broader understanding of basic sciences. This was a general expectation which cut across nationalities. The participants' expectation to cover basic sciences at Bachelor level could have been influenced by their interaction with graduates of a similar programme in meetings or conferences. Secondly, the nomenclature “Bachelor of Science degree” usually connotes learning about the science informing a particular discipline. Therefore Bachelor of Science degree in Physiotherapy suggests that all students of Physiotherapy at first degree level gain exposure to adequate amounts of sciences informing the discipline. Physiotherapy like other allied health degree programmes has the basic sciences at the core of the curriculum. Studies on Physiotherapy education have demonstrated that the Physiotherapy profession is built on two forms of sciences, biomedical and behavioural or human sciences (McMeeken, 2007; Redenbach & Bainbridge, 2007). The former refers to subjects such as Anatomy, Physiology, Pathology and Biochemistry while the latter refers to Psychology, Sociology and Psychiatry.

Like in any medical-related profession, students must understand the structure, composition and functions of various systems of the human body through an in-depth knowledge of Human Anatomy, Physiology and relevant components of Biochemistry. In addition, exposure to Behavioural sciences helps Physiotherapy students appreciate the impact of social and psychological factors upon their patients and themselves as highlighted by Bithell (2007). Albeit participants acknowledged their prior exposure to both biomedical and behavioural basic sciences at diploma-level, they indicated that the basic sciences taught at college level were superficial as they were taken by diploma-trained Physiotherapists and hence their expectation of gaining deeper understanding of the sciences at university level as evidenced in the following statement:

*“When I went to UWC, apart from research, I also expected a lot of coursework that would deal with the challenges that I had. . . to go into details in terms of some courses like biochemistry, I never did it in college when I was doing my diploma . . . anatomy, at least deeper and also the physiology and all that because, the basic sciences were not taught as much or they were never taught in detail, so you kind of graduate as a technician but not as a physiotherapist . . . Yes, I’m doing these things. But ask me why I’m doing these things, it never came out clearly. That is the gap I wanted to fill in.”(Kenyan participant)*

*“I think back then, we had Pathology just as Pathology, Physiology, and Anatomy... Now you see things like Biochemistry and Microbiology. We didn’t have those kinds of divisions, So when it comes to the basic sciences, we were being taught by Physiotherapists, apart from Anatomy where we had to go to an anatomy lab, and just for the practical aspect by specialists. So coming to the university level, you are to appreciate when you are taught by someone who is mastered in that area. I think the output is much better, other than me as a Physiotherapist. “I’m a Physiotherapist doing diploma, then maybe I just finish, and go do medical education then come back and teach. Do I have enough competence to pass that knowledge?”(Kenyan participant)*

*“I expected to have a bit of Anatomy and Physiology, Pharmacology and Pathology. In terms of the Pathology, you need to understand disease patterns and signs and symptoms*

*much more deeper than what I gained at College because I knew it was a degree, so I expected more than what I learnt at College”.*(Zambian participant)

*“I expected some knowledge to do with Pharmacology . . . though it’s not our area because we don’t prescribe but just have some information about it, yeah.”* (Rwandese participant)

While Zambian and Kenyan participants expected both clinical practice and a deeper understanding of basic sciences, Tanzanian and some Rwandese participants thought clinical practice was more favourable than basic sciences:

*“Not really, not really basic science, just clinical, clinical practice, clinical practice we should emphasize more on clinical practice because if you are a Physiotherapist like here you see people expect you to have much more advanced knowledge in practicing and the people who are coming there they are not coming for research, I didn’t go there for research, for me I went there to improve my knowledge in clinical practice.”* (Tanzanian participant)

*“During the diploma, we were given enough basic science modules which I wouldn’t want to do again unless I want to gain a deeper understanding or specialise in one of them.”* (Rwandese participant)

It could be argued that Tanzanian participants felt they were well prepared in the area of basic sciences at diploma-level. An alternative explanation could be that Tanzanian and most Rwandese participants preferred case-based to text-based learning. This is evident in their apparent preference for clinical practice as opposed to basic sciences. It is also interesting that not a single Tanzanian participant expected to learn basic sciences at BSc (Honours) degree-level. This demonstrates the heterogeneity of the UWC BSc. (Honours) and Master’s target group and the need to study and understand the learning needs of the target group as highlighted in Chapter Four. However, one would argue that indeed the learning hours spent on diploma-based modules or subjects are not in any way equal to the amount of time covered at BSc level, given the difference in duration and scope of vocational and university higher education as

highlighted in Chapter Two. As Mutula (2011) argues, universities serve as generators of more advanced knowledge than colleges which offer post-secondary education with the aim of producing middle grade technicians.

This therefore implies that if the college products are to be transitioned successful to university level graduates, the knowledge gap has to be carefully evaluated and addressed accordingly.

### **Summary of Theme Three**

The desire for advanced knowledge in all aspects of Physiotherapy was obvious in the UWC postgraduates. The postgraduates expected to acquire knowledge in research, have enhanced clinical competencies in areas such as orthopedics and neurology and more exposure to basic sciences such as Pharmacology, Biochemistry, Pathology, Anatomy and Physiology at BSc (Honours) level. Regarding research, participants indicated that they were not exposed to research methods at diploma-level hence the expectation to learn about research methods. Many reported that they expected high level clinical practice in the BSc (Honours) programme due to South Africa's relatively advanced economic status in Africa and the expectation for enhanced understanding of the aforementioned basic sciences was common among all graduates but a few.



#### **5.4.4 Specialization at Master's**

The postgraduates spoke of their expectations to specialise at Master's level. The quest to specialise was as deep as their desire for basic sciences and clinical practice.

*“My idea was I was going to be a specialist in Neurology. I expected to learn more about the brain and then be inserted in a clinic and coming out of that place with techniques that would entail that am a specialist in Neurology but I think I ended up coming out as a specialist in Research Methodology and Statistics.” (Zambian participant)*

*“. . . before coming in this programme, our leaders or our supervisor where I work, they think we are going to bring some kind of specialty in treating different conditions.” (Rwandese participant)*

*“When it comes to Master’s, I was expecting to specialise in a certain area and my interest was to go deeper in musculo-skeletal or something related to pain or a treatment in a specific area that could qualify me to have a specialty in that area.” (Tanzanian participant)*

*“I expected to have a Master’s in Physiotherapy in a certain aspect at the end of the programme.” (Kenyan participant)*

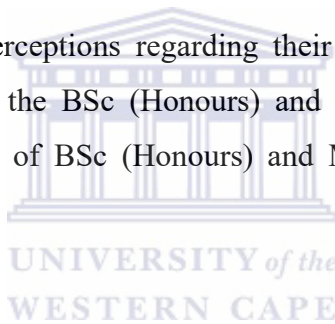
The quotes indicate that participants thought they would specialise at Master’s level. The desire to specialise was raised by all participants equally. The anticipated areas of specialisation at Master’s level included Orthopedics and Neurology. This could be explained by the fact that in practice, PTs attend to mostly orthopedic and neurological cases such as bone fractures and stroke respectively. Thus, the participants might have thought that pursuing a higher degree qualification would enable them gain more insight into managing complex Physiotherapy-related cases in their preferred areas of specialisation. This expectation is consistent with a study by Hager-Ross and Sundelin (2007) which reported that other than providing comprehensive knowledge based on research, postgraduate studies are designed to provide students with the opportunity to undertake advanced clinical reasoning and skills development, a position reaffirmed by McMeeken (2007). Furthermore, it can be argued that participants did not have a complete picture of the structure of the UWC BSc (Honours) and Master’s programmes prior to seeking admission into the programme. The researcher therefore argues that intending students should demand for the course structure of the programmes they wish to study so as to make informed decisions regarding a given training programme. It is however highly probable that the participants never made such enquiries due to limited training opportunities for DTPs in Africa as earlier highlighted in Chapter Four. In such cases, the researcher postulates that the onus is on training institutions to educate prospective students on the programmes being offered as some may not be aware of what the programmes they intend to pursue entail. Furthermore, by virtue of the qualifications of the participants at admission stage, it is doubtful whether they were aware that some master’s degrees were professional while others were purely academic or research based (Redenbach & Bainbridge, 2007), as is the case for the UWC Master’s Physiotherapy degree programme.

## **Summary of Theme Four**

All postgraduates expected to specialise in a particular area at Master's level. Participants hoped to have a bias or specialty in a specific area at the end of the Master's programme. They indicated potential areas of specialisation such as Neurology and musculo-skeletal Physiotherapy. This was to develop more advanced or deeper understanding of a specific area at Master's level, they reasoned. While specialisation for some was a personal goal, others reported that their employers expected them to specialise at Master's level prior to embarking on the UWC Master's programme.

## **5.5 POSTGRADUATES' PERCEPTIONS OF THEIR EDUCATIONAL EXPERIENCES AT THE UNIVERSITY OF THE WESTERN CAPE**

Postgraduates highlighted their perceptions regarding their educational experiences at UWC, including module composition of the BSc (Honours) and Master's curriculum, teaching and learning methods, implementation of BSc (Honours) and Master's programmes and learning facilities.



### **5.5.1 Postgraduates' Perceptions of the BSc (Hons) and Master's Curriculum**

Postgraduates from the 2003 and subsequent intakes reported that the BSc. (Honours) programme mostly constituted modules such as Research Methodology, Literature Review, Applied Statistics, Health Promotion, Disability and Rehabilitation and an elective module like Movement Science or Rehabilitation of Children, while the Master's programme constituted mostly the research project and Orthopedic Manual Therapy, which was optional.

*“We did Research Methodology which was more like being trained in research proposal writing. We also did Literature Review, Disability and Rehabilitation, Child Rehabilitation, Health Promotion, Exercise Science as an elective module, Movement Science, OMT as an elective module.”*

While the UWC BSc (Honours) and Master's pioneer postgraduates from the first and second cohorts had modules like Maternal and Child health and Health Policy and Administration in place of Movement Science and Orthopedic Manual Therapy, which were not offered at the time.

*“The modules that I did were Disability and Rehabilitation, Maternal and Child Health, and then we did Research Methodology and Statistics . . . then the research project itself. . . of course the research project was considered as a module on its own, and then I had to do. . . Health Policy and Administration”.*

The interview extracts above suggest a shift in the modules offered at BSc (Honours) and Master's level after a period of seven (7) years (1996-2002). The changes included the substitution of an Honours thesis project with systematic review, as also highlighted in Tables 4.2 and 4.3 of Chapter Four. Although secondary research in form of systematic reviews is equally desirable, the following statement reveals that postgraduates wished the university could revert back to the initial idea of a Honours research project prior to Master's:

*“. . . It would be nice if you (students) can also conduct a minor research before making your final (Master's) research. . . .You do everything to do with research and not just learn theory and then you go to your own country to research but let's do research in the Honours degree.”*

In support of the above statement, the researcher argues that if the ARI recommendation of empowering DTPs with research skills is to be achieved, training institutions must endeavor to not only teach research methods but also implement the course at Honours level to ensure students acquire both theoretical and practical understanding of research before progressing to Master's level, a view also held by Bithell (2007). In addition, the Honours mini-thesis could help in preparing students for bigger research projects at Master's level considering that the majority of DTPs have never had exposure to research in their diploma training. This would also afford students a hands-on experience of primary research implementation.

On the other hand, maintenance of the Disability and Rehabilitation, Research Methodology and Applied Statistics modules since the inception of the UWC BSc (Honours) and Master's programmes reaffirms the resolve by UWC to prepare DTPs for critical understanding of published literature, evidence-based practice and disability and rehabilitation issues as recommended by the ARI. Furthermore, participants expressed their perceptions on the UWC BSc (Honours) and Master's module composition. Many postgraduates wished they had an opportunity to be taken through the curriculum at the beginning of the programme. One of the pioneer postgraduates explains:

*“I think part of the gaps in the sense of the curriculum itself was that I didn't have the full content of this is what you are going to cover on this course. I think that probably only existed in Statistics. It was almost like, you are running this course, you are given this topics, go and study about this, and you go and study that. But I didn't have a full picture of where I was going. Like for example full course content on it in detail. I think having that would have helped a lot more.”*

Another graduate who attended the programme thirteen (13) years after its initiation raised a similar concern:

*“We were not given the curriculum per sé to say this is what we were supposed to cover, we did not know whether we covered everything or we covered less. So I wish we had a curriculum showing this is what you are supposed to cover for the purposes of even reading ahead.”*

The quotes above demonstrate that there was no attempt on the part of some module implementers to avail the students with relevant programme details since the BSc (Honours) and Master's programmes were initiated. This also in part explains why participants expected to specialise at Master's level in Section 5.3.5. Thus it is the researcher's view that module descriptions or outlines may help students understand the nature and breadth of work they are expected to cover in a particular module.



Descriptions also enable students appreciate anticipated study outcomes as they relate to acquisition and application of new behaviours at the end of the course. Furthermore, module descriptions outline module topics and objectives and may as a result motivate a student to read ahead. On the contrary, the lack of student guidance may negatively affect student's learning experience as emphasised in the following statement:

*“The most confusing part is that there was now to be a choice in compulsory modules and then there was a selection. So you know when you are new in something, you really want to understand first what you are choosing in comparison to the other. So I didn't have that clarity but I was just advised immediately and then my friend who had been here earlier advised also, take this one. So I went by that. But if I had some kind of explanation about what the course is all about, probably, I would have selected in a more informed manner.”*

In addition, many postgraduates from both earlier and subsequent intakes wished they had a wider list of modules to choose from. Postgraduates from the 1996, 1997 and 2009 intakes respectively stated the following:

*“I wish there were more choices which we could have chosen from like Neurology, Pediatrics and Cardio Pulmonary, I wish there was something structured in that sense.”*

*“The modules that were there were quite good, although coming from the work experience, you are told that you only need to take four modules the first semester and four modules in the second. It sounded a bit of betrayal for some who thought four was too small a number.”*

*“We had limited choices to make in terms of the different modules available.”*

It is clear in the interview extracts above that participants expected more than what the UWC BSc (Honours) conversion program could offer.

This could be attributed to the ARI report which identified only two key components; deficiencies in the knowledge of community-based rehabilitation and research skills among DTPs in Africa. Secondly, the ever changing needs of sending countries and possible challenges such as a lack of qualified teachers in diploma programmes (Frantz, 2007). The other reason could be the reluctance by UWC to conduct an independent learning needs analysis. The proposed ARI curriculum in the researcher's view could have been largely influenced by the ARI's main focus on disability and rehabilitation which was their mandate under the Organisation of African Union (now African Union). The following statements highlight the participants' desire for more coursework in the UWC curriculum:

*“A Physiotherapist is a primary health care worker, meaning they must be exposed to the assessment as well as treatment of various conditions. But I realised that the programme emphasised on what we call Movement Science and OMT. Physiotherapy has so many other areas and hence requires a general approach rather than concentrating only on OMT.” (Rwandan participant)*

*“Those core areas of Physiotherapy, which probably we were yearning to encounter in the university, were not adequately addressed. Otherwise you would expect to get things like Neurology, things like Pediatrics, you know, those kinds of very core areas of Physiotherapy, which I think were missing.” (Kenyan participant)*

The participant further attributed the perceived insufficient curricula content to the possible assumption entertained by the University of the Western Cape that all foundational courses in Physiotherapy were covered adequately at diploma-level.

*“My perception is that there is the assumption that you did everything that pertains to Physiotherapy at diploma-level. I realise there is a colleague who had in their place done a bobath course while some of us have not done that. We don't want the Honours programme to be a replication of the diploma, no. But there's room for refinement of aspects that were not well gotten at that diploma-level. That's my take.”*

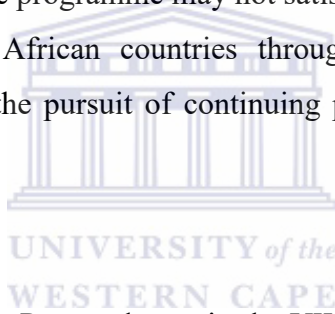
Another participant poses a solution to the apparent challenge in the BSc (Honours) and Master's curriculum in the following statement:

*“First of all, they need to identify from the universities they are recruiting students from all over Africa. What is it that these students did during their undergraduate, I mean during their diploma-level and to what extent? Because just getting a coursework written Anatomy does not mean that I went into detail of Anatomy. They need to get even the details of what we did in anatomy. Because again, you are coming in to fill in the gaps, so if you are not filling in the gaps, are you meeting the expectations of these students? So it's important to understand where these students are coming from. Most of the people, who have been going to South Africa for the BSc (Honours), if I am not wrong, went through the same institution. They need to liaise with this institution, get to know the level of first year, second year and third year.”*

This interview extracts endorse the need for a fresh learning needs analysis which would comprehensively encompass the learning needs of diploma trained Physiotherapists from all the five sending countries in Africa such as Zambia, Tanzania, Kenya, Malawi and Rwanda. The present challenge could be averted by identifying core Physiotherapy modules through a thorough review of the diploma curricula in the said sending countries. The modules could then be evaluated relative to a four-year standard BSc (Honours) Physiotherapy programme with a view to identifying discrepancies in content, duration and learning hours per module and subsequently constituting a bridging programme that would comprehensively represent the learning needs of DTPs in Africa. The interview quotes also seem to suggest that the participants require a much more robust BSc (Honours) programme so as to prepare them for postgraduate training at Master's level in any study area of their choice. This is consistent with the view of Crosbie et al (2002) that “the purpose of schools of Physiotherapy, and their tradition, is to develop in their students the cognitive and practical breadth required to function as competent practitioners immediately on graduation, with the capacity to continue to learn and develop”. The following statement by a participant who joined the UWC BSc (Honours) and Master's degrees programmes with a diploma and a BSc degree from another institution further justifies the need for more content:

*“You see, most of the learning is done at BSc level, yes. So the way the modules were tailored, for me those modules were tailored for people like me who went with a first degree. I’d already done my BSc undergraduate. So it was like just adding on to what I already knew. But for somebody with a diploma, I think the gap still exists. There’s still that gap. Because the way that programme is tailored, it’s a postgraduate programme. This is somebody who is a technologist with a diploma. Well the learning is there but the detailed scientific learning is lacking in between. So I feel it should be in a little more detail.”*

The main theme of the interview extracts in this section is the apparent perception that the BSc (Honours) conversion programme does not constitute sufficient amount of course work for a diploma-trained Physiotherapist to move to degree status. It should however be noted that due to a limited number of credits, a single programme may not satisfy all the needs of DTPs. In light of this, it would be desirable for African countries through WCPT-A and their respective professional bodies to encourage the pursuit of continuing professional development activities among PTs.



### **Summary of Theme Five**

Apart from the modules covered by Postgraduates in the UWC BSc (Hons) programme, such as Research Methods, Literature Review, Applied Statistics, Health Promotion, Disability and Rehabilitation, Movement Science, Rehabilitation of Children and Applied Exercise Science, participants suggested that more elective coursework needed to be added to the curriculum, such as Neurology and Cardio-pulmonary, in order to adequately facilitate the transition of DTPs to degree status. The participants argued that they needed a general approach to learning at BSc (Honours) level despite having prior Physiotherapy education.

### 5.5.2 Postgraduates' Perceptions of Learning and Teaching Facilities at UWC

Many postgraduates were extremely satisfied with the state of facilities and resources at UWC. The postgraduates were particularly impressed with the library and the assistance rendered to them by faculty librarians:

*“When I got there, having been used to the way we are learning here, I must say I was very impressed with UWC, more so the library, the library has ten stories. If you don't get the literature that you want, you can access other Universities like Stellenbosch and UCT as long as you have a pass. I found that very helpful. Library staffs were always on hand to kindly help you with everything.” (Zambian participant)*

*“Facilities were super, I wouldn't complain, I would give 100% in terms of facilities both all the learning aids were there teachers, various . . . computers, whatever, fast internet you get whatever. Remember, for some of us we had the computers and internet was installed in our rooms you know even in the middle of the night you want to surf no problem yah.” (Tanzanian participant)*

Another postgraduate added:

*“Resources were available, readily available. More than we needed. Wherever you went, it's like you would want to spend the whole day in the library, trying to download what you need to read. Resources, those were there. And guidance, the lecturers were always available. In terms of human resource, the lecturers were there, ready to help at any time and tutorials were given for those that needed to understand more. Of course we had different strengths. The lecturers would even pair us with those that needed help. And that kind of helped.” (Zambian participant)*

These quotes indicate that participants were satisfied with the teaching and learning resources available during their time at UWC. This could be explained by the variance that exists in terms of resources between the host country and the sending countries. South Africa stands out in Africa as a relatively advanced economy hence has more resources than other African countries. Secondly, all the participants attended higher education in colleges where infrastructure might not have been as developed as in universities. Although the postgraduates appreciated the availability of library facilities and the assistance rendered to them, some participants highlighted some challenges they encountered:

*“I think the only thing that was not well captured was maybe the clinical learning, where the learners are exposed to the hospital ward set-ups on patients. So I think that’s an element that can be included. Or if that is not possible, maybe the university to come up with the skills lab, something like skills lab, where students can learn, can practice some of those things in a skills lab, yah. But I think the element of clinical learning, yah, not really so much well covered, yah.” (Kenyan participants)*

*“As you may be aware, the world is moving with technology. So I think Physiotherapy can’t afford to lag behind technologically. I think there is need to introduce skills labs at UWC. These are laboratories where students can practice before going to health centres or hospitals or whatever. For example when I was in my honours degree, there was no kind of apparatus or machine to detect or to analyse movement. My emphasis is about bringing technology in Physiotherapy.” (Rwandan participant)*

### **Summary of Theme Six**

The participants expressed satisfaction with learning facilities at the University of the Western Cape. Participants cited facilities like the UWC library, internet availability and reading materials. They however highlighted a lack of skills labs at the Department of Physiotherapy.

### **5.5.3 Postgraduates’ Perceptions of UWC’s Teaching-Learning Methods**

All the postgraduates indicated that the teaching-learning methods used by their lecturers were effective and very engaging.

*“ . . . it was a time of a bit of lecturing, a bit of group work, a bit of discussions you know I think I don't have a problem with the teaching methods that were used if I can remember well, because we were a small group of thirteen students so sometimes we could be given assignment to come and do presentations and things like that.” (Tanzanian participant)*

*“Some of the methods were good. . . . Like, they would give us a topic, research, discuss and then come and present in class. That was more engaging. And some of those things we remembered because it made us engage ourselves into the topic.” (Zambian participant)*

*“The lecturers could give lectures, they could give group discussions, assignments, yah, and I think they were adequate. To me, I think, I have no complaint about the teaching-learning methods.” (Kenyan participant)*

These quotes on teaching-learning methods demonstrate that participants were extremely satisfied with the mode of lecture delivery employed by lecturers in the UWC BSc (Hons) and Master's programmes. The teaching-learning approach described by participants in the interview extracts above support the humanistic theory of learning. Humanists believe that learning is student-centered and personalised and that the educator's role is that of a facilitator, and the goal is to develop self-actualised people in a cooperative, supportive environment (Huitt, 2009). The participants' satisfaction with the course delivery approaches employed in the UWC BSc (Honours) and Master's programme is consistent with an assumption of andragogy which states that “as a person matures, his self-concept moves from one of being a dependent personality toward one of being a self-directed human being” (Merriam, 2001).

Andragogy or the method and practice of teaching adult learners and self-directed learning continue to be important in continuing professional education programmes such as the UWC BSc (Honours) and Master's programmes as highlighted in the following interview extract:

*“Coming from a background of a traditional way of learning, I think the one employed by UWC is better because I'm given a chance as a candidate to learn my own way . . . to learn how to research, how to look for information, how to look for more details on my own. As a result because I look for the details myself, I end up learning more. I think it's a better way of doing things.”*

The participants, however, raised a uniform concern regarding the apparent absence of hands-on teaching-learning strategies in the UWC BSc. (Honours) and Master's programmes. Postgraduates appeared frustrated with the apparent insufficient exposure to clinical practice:

*“There was too much theory and less practice, I was expecting to have more clinical practice in Movement Science. Actually, I liked Movement Science and OMT, I liked it so much because I found it very helpful in one way but then it would have been good to practice it on real patients, like low back pain patients. We go to clinical settings, we evaluate patients to find out how it works practically but it was more like we practice in class like models not really on real patients” (Tanzanian participant)*

*“. . . theoretically, yes, But somehow practically we didn't get much exposure, we had very good notes that we were given, and most of the times we were practicing amongst ourselves. But you would wish at such kind of a level at least you would have gotten exposure to real patients outside. Theory was perfect, but the practical aspect, I wish we would have been exposed to outpatient clinic, meet real patients, try those techniques on them and be able to evaluate, yah, at least some kind of attachment in a clinical area to put to practice what we have been taught.” (Kenyan participant)*



*“We never went to the hospital, so to say, to deal with patients. I only went to the hospital myself, because of rehabilitation component, which was one of my subjects. We also went to some community area where we did a group project as part of the Rehabilitation and Research modules.” (Zambian participant)*

*“What I can say, in honors especially, they emphasise on theories. My concern is about how to apply those theories. But as regarding content, it’s somehow good but practical is the challenge.” (Rwandese participant)*

Though the classroom-based teaching-learning strategies employed by the lecturers, like group discussions, presentations and lectures were good, the participants felt the programme lacked hands-on and practice-based teaching-learning components. Participants wished they had an opportunity to apply their class-room acquired knowledge on real cases in the clinical setting. Bandura (1977) posits that “most human behaviour is learnt observationally through modelling; from observing others, one forms an idea of how new behaviours are performed, and on later occasions this coded information serves as a guide for action.” The primary focus of social learning theory is learning through participation. Students will have a desire to develop skills if the people they admire have the same skills, and they would work towards becoming like their mentor. In the same vein, the participants in the current study desired to be mentored in the clinical area through the application of new behaviours as is the case with all Physiotherapy training programmes. The approximate number of hours of clinical practice in Ireland, New Zealand and the UK is 1000 hours of supervised “hands-on” clinical education and practice (Blake, Cusack, Doody & Hurley, 2007; Bithell, 2007; Skinner, 2007).

The finding in the current study is however, not surprising as the UWC curriculum developers in Chapter Four reported that they were unable to introduce clinical modules because UWC was not attached to any academic hospital at the time, while Stellenbosch and UCT were attached to Tygerberg and Groote Schuur hospitals respectively. The curriculum developer however indicated that the Western Cape Province had since made a number of changes that could favour the development of the clinical components in the UWC BSc (Hons) and Master’s programmes.

## Summary of Theme Seven

Generally the participants of the current study were satisfied with teaching-learning methods and strategies used in the UWC BSc (Honours) programme. Benefits of learning strategies such as group work, discussions and presentations were highlighted. Participants reported that the methods and strategies employed by UWC lecturers were very engaging and fostered self-learning through research. Contrastingly, all participants bemoaned the absence of practice-based teaching. They complained about non-exposure to practical or hands on teaching and learning during their time at UWC.

### 5.5.4 Postgraduates' Perceptions of the Implementation of the BSc (Honours) and Master's Programmes

Some postgraduates were concerned about the manner in which the BSc (Honours) and Master's Programmes were implemented by UWC. The postgraduates reported that there was no clear cut separation between the two programmes as they appeared to run concurrently. One of the postgraduates from the 2003 cohorts made the following observation:

*“The problem is, when you go to UWC and you are going for two years, there are so many things that are happening during one year that one wouldn't separate the Honours from the Master's because during this time that I'm doing my Honours, at the same time, I'm developing a proposal for my Masters. So it's like I'm doing two programmes at the same time. I am doing the Honours and preparing for the Master's. . . “You want to squeeze all these within a period of two years so that you are out of UWC”. But in an ideal situation, it's good to have a BSc separate, clear, finish it, come for a Master's. It would be a bit helpful for you to have that in my view.”*

Another postgraduate from the 2007 cohort made an appeal that the BSc (Honours) and Master's programmes should not run concurrently:

*“The University of Western Cape should have a separate calendar for BSc and Master’s for those who want to do BSc and exit, they can exit after doing their BSc. If they want to come and join the Master’s they can decide when they want to come.*

*But I think our scenario was slightly different, because our BSc was linked to Master’s. Although we qualified and got the BSc degree, but I think our letters of invitation were like BSc Master’s. So it’s like you could not come out until you do your Master’s. So I think it should be made clear that if you have joined for BSc, it is from this period to this period. If you want to continue, you can make a choice”*

The interview extracts above indicate participants’ wish to have the BSc (Honours) and Master’s programmes clearly separated so they do not appear to be running concurrently. The participants therefore appeal for the separation of the two programmes, each with its own transcript of results to show that the programmes are separate entities. To validate the above claims, the researcher conducted interviews with senior lecturers at the Department of Physiotherapy and they had the following views on the implementation of the two programmes:

*“Initially, it was one year Honours and one year Master’s. Then it was changed to two years Master’s, so you come in and you register for your Master’s but after the first year you could exit with the Honours and then we had to go back, to change it to an Honours and a Master’s. Now the changes for that were firstly, the students were all coming and saying the countries did not want a Master’s certificate straight from diploma qualification. They wanted to have an Honours certificate, so yes, the students were registering for Master’s but after the first year they would get an Honours and return for Master’s. (L2)*

The lecturers’ comment on the implementation of the BSc (Honours) and Master’s corroborate the views of the 2003 and 2007 postgraduate cohorts. However, it is worth noting that the two programmes has been separated and now operate as two distinct programmes as highlighted in the interview extract above. It is obvious that DTPs then required a Master’s degree to be able to advocate for the introduction of Baccalaureate programmes in their countries (Frantz, 2007) and as reported by the curriculum developers in Chapter Four (4), they first had to go through a one-year Honours degree to prepare them for Master’s-level study.

However, Tanzanian and Zambian participants reported that the BSc (Honours) was a source of controversy with professional bodies and employers in their respective countries:

*“It’s having a conflict with our professional regulatory body because they expect us to have a total of five years for a BSc and another two years for Master’s so there are few who understand and others don’t understand.”*

*“There’s something about the Honours from UWC. Some institutions cannot employ you. They just say, oh, UWC, we can’t offer you employment to become a lecturer. Unless you did it at another university, not Honours. Even in the Ministry of Health. It’s a bit controversial, a little bit. Because imagine, I was one of the students sponsored for the Honours then later again sponsored for the Master’s by the Government of Zambia, Ministry of Health. I come back, the Ministry of Health even itself, does not acknowledge it as an added advantage.”*

This indicates the structure, duration and implementation strategy of the BSc (Honours) and Master’s programmes was not favourable to some health professional regulatory bodies and employers, such as universities who require a full BSc (Honours) degree and a Master’s degree. This could be attributed to the title “BSc (Honours) degree” which implies a postgraduate degree; as a result employers would wonder whether a diploma qualification is equivalent to UWC’s first three-years of BSc (Honours) degree, for diploma-trained Physiotherapists to be exempted from all undergraduate courses. Secondly, most employers may have doubts as to whether UWC graduates would deliver as expected due to the relatively few modules covered in the UWC one-year BSc (Honours) degree compared to their local three-year Bachelor of Science conversion degrees for diploma-trained Physiotherapists. As a result, the latter may have higher chances of being employed in universities especially in countries like Zambia which now offers a postgraduate Master’s degree programme.

### **Summary of Theme Eight**

The order of higher education qualifications entails that a graduate progressively moves from one stage to another without appearing to skip a single stage. Although in some UK universities the opposite is true, whereby a diploma holder would move straight to Master’s degree without a

first degree (Kell, 2006), participants of this study reported having challenges with health professional bodies as well as potential employers especially universities regarding the nature of their higher education.

Graduates from Zambia and Tanzania reported that the UWC BSc (Honours) was often queried by employers and professional bodies due to its relatively short duration. According to the participants, authorities also queried the basis upon which a postgraduate degree (BSc Honours) was awarded to a person without a first degree. Furthermore, participants from all countries called for a clear separation of the two programmes so they do not appear to run concurrently.

## **5.6 CONCLUSION**

In this chapter, the researcher has documented the graduates' perceptions of their educational experiences at the University of the Western Cape. The study shows that graduates expected to acquire knowledge in three main areas: research, advanced clinical practice in various clinical areas through student rotations, and enhanced understanding of basic sciences. In discussing the contents and implementation of the UWC BSc (Honours) and Master's programmes relative to the expectations of the participants, the study demonstrates that participants require more content in the BSc (Honours) curriculum, such as basic sciences and conditions such as Neurology and Cardio-pulmonary coupled with clinical practice in relevant settings. The study also shows that participants prefer to have a separate BSc (Honours) programme completely detached from the Master's programme, with its own mini-thesis as a preparatory project for the Master's course for those participants wishing to continue with the Master's course. Regarding the Master's programme, the study shows that participants prefer to specialise at Master's level in various specialties such as Neurology and musculo-skeletal. Finally, the study demonstrates that the main objectives of the programme such as increasing access to Physiotherapy education in Africa and empowering diploma-trained Physiotherapists with research skills are being realised, albeit there appears to be a demand for basic sciences, enhanced clinical practice and specialisations at Master's level. In an effort to have a comprehensive product evaluation, the next chapter, explores outcomes and impact of the UWC postgraduate programmes from the perspectives of UWC postgraduates, graduates work supervisors and students of UWC postgraduates.

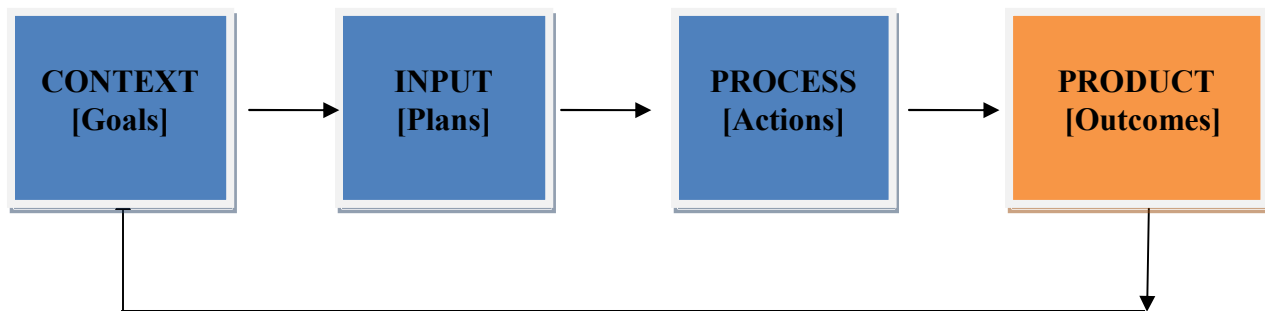
## PHASE 3: OUTCOMES AND IMPACT

### CHAPTER 6

#### PERCEIVED OUTCOMES AND IMPACT OF THE UWC BSc (HONS) AND MASTER'S PROGRAMMES

##### 6.1 INTRODUCTION

In this chapter, findings indicating perceptions of UWC postgraduates, the postgraduates' work-place supervisors and students of the postgraduates on the outcomes and impact of the UWC BSc (Honours) and Master's programmes are presented. This was to meet Objective 3: to explore the perceptions of UWC postgraduates, work-place supervisors and students of the postgraduates on the outcomes and impact of the UWC BSc. (Honours) and Master's programmes. Figure 6.1 below shows the evaluation stage according to the CIPP framework.



**Figure 6.0.1: Outcomes and Impact Evaluation of UWC Programmes using the CIPP Framework**

Findings of the in-depth interviews with the participants are presented in the form of themes that emerged in the analysis.

## **6.2 METHODS**

In-depth interviews were conducted in three of the four countries that participated in the study. In Zambia, all the postgraduates but two were employed in public and private universities, while the two worked in general hospitals. Conversely, the majority of the UWC postgraduates in Tanzania worked in public and private hospitals. In Rwanda, postgraduates were employed by both hospitals and the only university offering Physiotherapy education. A total of seven (7) postgraduates' supervisors participated in the study. The supervisors included deans of medical schools, hospital medical superintendents and Physiotherapy departmental heads.

## **6.3 RESULTS**

There are many stakeholders for whom the quality of higher education is vital, including employers and students. Employers are key stakeholders in higher education and are a valuable resource in understanding whether the education that students receive from higher institutions is relevant to the job market and indeed the population needs. Thus, understanding the impact of an education from the perspective of employers is crucial. The themes that emerged indicate perceived outcomes and impact of the UWC programmes from the perspectives of the postgraduates, work-place supervisors of postgraduates and students of postgraduates.

### **6.3.1 Postgraduates' Perceptions of Outcomes and Impact of the UWC BSc (Honours) and Master's programmes**

The postgraduates spoke of the competencies they acquired in the BSc. (Honours) and Master's programmes that they were applying in their respective workplaces and how the learnt competencies helped them make organisational changes in the workplace, and the impact the training had on their countries' Physiotherapy education, health sectors and societies at large. Conversely, graduates also highlighted the competency challenges they encountered in their duties as clinicians and faculty.

### 6.3.1.1 Outcomes: Application of New Competencies in the Workplace

Many postgraduates across intakes except the first (1996) and second (1997) cohorts reported that they had seen a relative improvement in their clinical practice following the introduction of Movement Science and Orthopedic Manual Therapy in the UWC BSc (Honours) and Master's curriculum as presented early on in Section 5.4.1. The participants reported enhanced clinical knowledge, improved clinical reasoning and confidence in assessing musculo-skeletal cases owing to the Movement Science and Orthopedic Manual Therapy modules they undertook in the UWC BSc (Honours) and Master's Programmes:

*"I now have well advanced clinical knowledge because of the OMT course that we did. Even clinically, the way of handling patients in the clinics is enhanced. Our knowledge in terms of handling clinical cases, in the wards and in our clinics where we practice and also teaching has advanced." (Kenyan participant)*

*"I think I acquired new treatment skills for muscul-oskeletal conditions owing to the knowledge I got from OMT, movement science and exercise science as compared to what I knew before. It is no longer routine." (Rwandese participant)*

*"Before I learnt Orthopedic Manual Therapy, the general treatment of low back pain was always the same, and my approach to the treatment would not only be targeting the specific area that was eliciting the pain, but I would kind of treat a broad part of for example the back instead of going directly to . . . well it's important that you touch on other parts as well, but the main focus should be on where the pain is coming from unlike before where you tend to waste a lot of time touching on parts that were irrelevant." (Zambian participant)*

The interview extracts indicate that participants acquired enhanced understanding of clinical knowledge regarding musculo-skeletal conditions. The participants attribute their knowledge of musculo-skeletal conditions to the manual therapy modules they undertook in the UWC BSc (Honours) and Master's Programmes.



These findings are consistent with those reported by Petty, Scholes and Ellis (2011) in their study to determine the impact of musculo-skeletal Master's courses on clinical expertise of Physiotherapy participants. The study reported learning transition of PTs from uncritical practice knowledge with routine, therapist-centred clinical practice to critical understanding of practice knowledge that enabled patient-centred clinical practice. Similarly, it could be argued that the clinical knowledge empowerment the participants of the current study received during their UWC BSc (Honours) and Master's Programmes, enhanced their understanding of musculo-skeletal conditions. Furthermore, the participants demonstrate their conversion from superficial practice knowledge and routine to a broader knowledge base as suggested in the following quotation:

*“ . . . Before that (manual therapy), I would do whatever I felt was right as long as I know I learnt it and it's what I was taught, ok? . . . But after that it opened up my mind to say you need to have a reason for everything that you do. And because there is a lot of reading involved, a lot of research involved, you realise that you get empowered by the knowledge that you acquire after extensive reading. So after acquiring that knowledge, then when you go back to your practice, you always tend to refer to that what you gained, unlike the guess work, and I would call it guess work that we used to do.”*

As a result of their exposure to more advanced information on musculo-skeletal conditions than what they were taught at diploma level, participants earned some additional knowledge and understanding of musculo-skeletal conditions commonly seen by PTs. In addition to enhanced knowledge and management of musculo-skeletal conditions, participants also reported improved clinical reasoning owing to the Manual Therapy module they were exposed to in the UWC BSc (Honours) and Master's programmes:

*“This programme improved my clinical reasoning and increased my confidence as a Physiotherapist, hence better approach to manage most clinical issues that are commonly seen in the Physiotherapy department/practice.” (Rwandese participant)*

*“Yeah, there’s a lot of clinical reasoning. It’s much better than what I had before.”  
(Kenyan participant)*

*“Before I was trained to that level, I would think like a technical person, I could not question much of what I was doing. I know patients come here with limitations of the joint range of motion and I will just do mobilization, stretching whatever, but now. . . I do but with really knowing what I am doing and even measuring and I would first look like what is it that is causing the restriction then as I know what is causing then I am in a better position to attend to the patient”.(Tanzanian participant)*

The enhanced clinical reasoning could be attributed to the improved theoretical understanding of musculoskeletal conditions at BSc (Honours) and Master’s levels. Similarly, a study conducted to determine the impact of Master’s education in manual and manipulative therapy reported improved clinical reasoning among participants following graduation (Perry, Green & Harrison, 2011). In addition, similar findings were found by Petty, Scholes and Ellis (2011), who used a naturalistic enquiry approach to investigate the impact of a musculo-skeletal Master’s course in the UK. Likewise, participants of the study conducted by Stathopoulos and Harrison (2003) articulated elements of their clinical reasoning strategies that demonstrate similarities with models of expert reasoning such as having higher representations and holistic view of problematic situations. Furthermore, the musculo-skeletal knowledge and clinical reasoning were compounded by improved patient assessment skills after the UWC BSc. (Honours) and Master’s programmes as reported by the following participants:

*“I’ve learnt to individualise all my assessment and my treatment of the individual. Also, courses like Health Promotion have enabled me to look at health, not like with blinkers or just from one dimension but look at health from various dimensions. And so you see health and factors that contribute to health from just the biomedical model and begin to see how the social model, and begin to see economic, financial, political, you begin to see the input of all these variables and how they contribute to an individual, the health of the community, the health of the family.” (Zambian participant)*

*“I was also confident in assessment and treatment approach for musculo-skeletal disorders” (Rwandese participant)*

The improved assessment skills could be in part due to the much emphasised broader understanding of health in the UWC BSc (Honours) and Master’s programmes where various indicators of health and disease are explored through courses such as Health Promotion, Movement Science and Manual Therapy. In addition, the enhanced assessment skills reported in the current study could also be a result of the practical demonstration aspect of Movement Science and Manual Therapy as well as the case-based learning approach whereby students are given cases to evaluate on weekly basis throughout the duration of the module. Thus the improved knowledge, clinical reasoning and assessment skills of participants challenged them to move away from routine characterised by collecting all information about a patient to a much more focused approach. Consistent with these findings, Rushton and Lindsay (2010) reported that graduates of a musculo-skeletal Master’s course demonstrated considerable evidence of the development of a hypothetical-deductive approach to reasoning during patient evaluation and subsequent management as also demonstrated in a comment by one of the participants of the current study:

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*“A lot of the clinical part that we did was when we did Orthopedic Manual Therapy. We were taught by a nice person and she made sure that we got the skills right. And today if I go to the clinical places, I have to do a good assessment, get a good hypothesis and get to know, for this kind of hypothesis, what is it that I’m supposed to do? So that to me comes all clearer than what I had.” (Kenyan participant)*

This further indicates a shift away from a physiotherapists-centred approach commonly practiced at diploma level to a more patient-centred one where decisions regarding patient management are informed by data and observation made through the use of an objective tool, assessment and re-assessment to ascertain patient progress which enabled the participants to learn in and from practice (Petty, Scholes & Ellis, 2011) as reported by one of the participants in the current study:

*“I’d say the assessment skills have improved, although I’ve not engaged into clinical practice per say since completion but I can still be able to assess a patient better and do any intervention in a more critical way, and similarly for the evaluation of what I’m doing and more evidence-based because you can be able to use outcome measures and indicators and probably find out more about tools that we can use to handle different cases that we encounter in the field and use them to do some evidence-based management of clients.” (Tanzanian participant)*

Conversely, many Tanzanian postgraduates who worked as Physiotherapy clinicians spoke of the challenges they faced in managing conditions other than musculo-skeletal ones. Participants from the 2006, 2007 and 2011 intakes explain their challenges:

*“The programme has not had any impact on medical conditions. We can admit that we have been using old techniques we had before going to UWC.”*

*“When I came back, it took me time and I had to start thinking again like. . . “So during that two years break I had no clinical exposure to patients to make an assessment to make a decision to come to the diagnosis and decide on which modality I should use to treat this patient.” So it took me a certain period to read and resume practicing including touching of a patient, to resume to the normal way because I had no hands on practice . . . because I didn’t do OMT of which I think those who did OMT, they had then added some practice though I think it was not also clinically oriented. It was just practicing on themselves like models as they had no time or opportunity to touch a patient or to do something to a real patient. I am having difficulties managing some conditions and that is what is missing.”*

*“Something I noted when I just came back, everybody was looking at me, expecting new things since I had acquired a Master’s degree. If there was a university here at least I would know some research and I can do some research I can try, but clinical practice other than the mobilisations we learnt in OMT, I haven’t learnt much. I really need to work hard.”*

The challenges registered in the interview extracts above came mostly from participants working as Physiotherapy clinicians in their respective countries, and among the four participating countries, Tanzania had the bulk of graduates working as Physiotherapy clinicians at the time of the current study. Thus the researcher argues that the complaints reported by some participants of the current study could have been as a result of the lack of clinical practice components and other clinical modules as demonstrated in both Chapter Four and Five. It is clear that other than the movement science and manual therapy which focus on assessment and management of musculo-skeletal conditions, participants were not exposed to any other clinical modules that would have prepared them to handle cardio-vascular, pulmonary or indeed other conditions commonly seen by Physiotherapists. Similarly, Rwandan participants corroborate the challenges reported by their Tanzanian counterparts in the following statement:

*“After finishing this programme, I was excellent in my practical regarding musculo-skeletal disorders but other conditions as I said before, like cardio-pulmonary, I applied what I knew before coming here. Yeah. But regarding musculo-skeletal, I was excellent in my practical.”*

Other than Tanzanian and Rwandese participants, Zambian and Kenyan graduates respectively explained how they travelled far and wide to catch up with contemporary clinical expertise in other areas of Physiotherapy in order to address the knowledge deficits they had:

*“Coming back home, we came out of that place as very good researchers but in terms of clinical expertise, that was very, very minimal. So what helped me most was the skill of reading. Being a researcher helped me to read more about what others are doing and then I had to plan for myself to say, I need to understand this. Who do I contact? I need to understand this . . . in order to catch up with the expectations of others. I remember going to the University of Alabama, trying to catch up, trying to say, Now, I’ve read about this. Can I have a specialist who I can probably observe for a week or so to see what they do? Coming to Zambia, I was expected to share my knowledge. So you can only give what you have. So if you have the theoretical component, then it becomes difficult. But over the years, I’ve been trying to catch up on the lost clinical impact.”*

*“Probably one specific area I had challenges with was Neurology. This prompted me to get a scholarship to do more in Neurology, because most of the cases that we were getting in the hospital were neurological. Patients had either issues with the nerves or cerebral-vascular accidents and traumatic head injury. So I had to head to Germany in 2009, because I felt that I had a deficit in Neurology and many other areas. I went to University of Konstanz and we were attached to a neurological hospital for nine months.”*

However, despite the competency challenges in some areas of Physiotherapy practice, most postgraduates who worked in clinical areas stated that they strived to apply evidence-based practice owing to the evidence-based practice and research modules they did in the UWC BSc (Honours) and Master’s programmes:

*“. . . I look for the latest evidence. I don’t just beat about the bush. For everything I do, I do it at the back of my mind, knowing that this does this why because it behaves this way. So I practice what we call evidence-based, I practice based on evidence. I’ve subscribed to several journals like the American Journal of Physical Therapy, Australian Journal, and the South African Journal of Physiotherapy. So that is what guides me on the latest issues. If I have any doubt, I consult that. So it has changed a lot not what we learnt in our basic Physiotherapy training.” (Kenyan participant)*

*“I consult widely, from colleagues, superiors, try to read articles concerning different conditions and see what others have done in terms of management. I document regularly everything I do with patients and use outcome measures to monitor patients’ progress.”*  
(Rwandese participant)

This indicates participants gained an ability to evaluate research and apply evidence-based practice. Similar findings have been reported following studies to evaluate the influence of Master’s qualification in Manual Therapy on the careers of PTs in the UK (Green, Perry & Harrison, 2008; Perry, Green & Harrison, 2011; Petty, Scholes and Ellis, 2011). The current study therefore demonstrates that participants were using their research knowledge in their places of work. This also indicates that one of the objectives and anticipated outcome of the UWC BSc (Honours) and Master’s programme as outlined in Chapter Four (4) was being realised.

### **6.3.1.2 Outcomes: Career Development**

Many participants stated that the UWC BSc. (Honours) and Master’s programmes provided them the foundation they needed to pursue higher degrees such as PhDs. The postgraduates expressed their gratitude to UWC for the firm research foundation rendered to them:

*“At individual level, I’m very happy to be a product of UWC and wherever I go, I tell it. That was my foundation of research. And now, I’m able to do research, I was able to do my PhD research because I had the background of UWC.”*

Furthermore, one of the postgraduates explains how the knowledge they acquired in statistics at UWC contributed to their exceptional performance at PhD level:

*“I was able to do my PhD and passed with a distinction with the people that were saying . . . degrees are better than South African; I was the only one who passed with a distinction. And eventually, when it came to doing my own research, I told myself, I passed very well in statistics and I will do my own statistics. Others depended on statisticians but of course I . . . could ask for guidance here and there but I did the work myself.”*

*And even when I presented my phase 1 results, we were . . . seven PhD candidates . . . and I came out the best oral presenter, the best poster presenter, the best proposal presenter at the university. And then I proceeded. When I defended, I still came out the best. And I've been given two awards by the university and I was the only one who spent two years, nine months to do a PhD. Others spent ten years, nine, and seven and eight years, so I give credit to UWC."*

The interview extracts demonstrate that the UWC BSc (Honours) and Master's programmes provided the necessary foundation for continued learning among DTPs in Africa. The UWC programmes prepared the participants for future educational challenges through instilling confidence in the participants to move ahead on higher projects such as PhD studies, which would not have been possible without the knowledge of research and statistics acquired in the UWC BSc (Honours) and Master's programmes. Furthermore, the research methods modules and the proposal writing process at Master's level enabled the participants to develop research skills required to execute a PhD research project.

The advanced research knowledge and skills acquired at PhD level further augmented the much needed research activity among PTs in Africa as also espoused by the African Rehabilitation Institute (ARI) which identified lack of research skills among DTPs in Africa as indicated in Chapter Four (4) by both the ARI and UWC PDs. Therefore, the UWC BSc (Honours) and Master's programmes served as important educational steps in the pursuit of higher qualifications as a Master's programme is a pre-requisite qualification for a PhD programme and a Bachelors qualification is required for one to have access to a Master's programme.

In addition to further studies, the participants also reported that they were involved in several activities at their places of work as a result of the education they acquired from UWC:

*"I'm a Master's Coordinator. We started our course I think in 2011. . . I've also now been put in a committee where I'm a protocol reviewer."*



*“I have been entrusted to different activities in the hospital such as coordinating the palliative care committee, coordinating the Continuous Professional Development (CPD) activities, member of the Research Committee, member of the Quality Assurance Committee of the hospital, Service Manager of the Physiotherapy Department and a CPD focal point person at the Allied Professions Health Council of Rwanda.”*

Many graduates also reported job changes such as higher positions in their workplace:

*“Of course, as a result of that, I’m the Head of Department at the hospital where I work. I oversee the daily running of the department; I’m the one who plans for the department. I run the budget for the department. So that has made me advance and I’m also used by the Province, when it comes to planning for the whole Province.”*

While others spoke of being transferred to higher level referral hospitals:

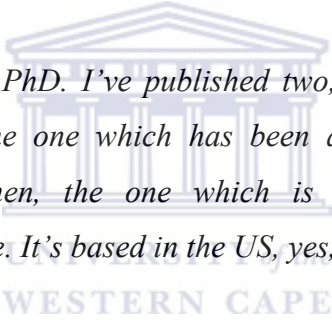
*“I remember I used to work on the Copper Belt. I was transferred because they looked at the papers that I have, the experience, and also a recommendation from my supervisors that side. They also looked at my performances and my competences so it has really impacted on my progression as well.”*

This indicates postgraduates had improved career prospects following graduation from the UWC BSc (Honours) and Master’s programmes. The qualifications obtained from the UWC programmes increased career opportunities of postgraduates by facilitating the promotions of participants in their places of work. Majority of participants in Zambia, Kenya and Rwanda reported changing jobs from clinical PTs to educators in universities while others were transferred to university teaching hospitals, a finding similar to a study conducted by Schattner et al. (2007), which reports that Master’s graduates increased their level of employment at universities after doing the course. Interestingly, this finding is consistent with the main objective of the UWC BSc (Honours) and Master’s programmes, which aimed at increasing access to Baccalaureate-level Physiotherapy training in Africa by empowering DTPs with necessary qualifications for university employment. In Tanzania, however, many participants remained in their initial places of work, mostly clinical settings as they only had one institution

offering Physiotherapy training at the time of the study compared to three in Zambia and four in Kenya. Clearly, the job changes experienced by most participants was made possible by the UWC BSc (Honours) and Master's programmes as in most, if not all universities, a Master's degree is regarded as minimum entry qualification (Louw et al., 2007). In addition, the registration status of Zambian and Rwandese participants with their respective professional bodies changed from Physiotherapy Technologist to Physiotherapy Specialists owing to the UWC BSc (Honours) and Master's programmes.

### **6.3.1.3 Impact of BSc. (Honours) and Master's Programmes on the Workplace**

Postgraduates spoke of their research output following the UWC BSc. (Honours) and Master's training. One of the pioneer postgraduates from Zambia stated that they published from their PhD dissertation:



*"I had six chapters in my PhD. I've published two, three are under review. One has already been accepted. The one which has been accepted is in African Journal of Disability, AJOD. And then, the one which is under review is in Archives of Rehabilitation and Medicine. It's based in the US, yes, and Canada."*

Postgraduate from Zambia stated that they had published in various journals:

*"I've done one, actually under the South African Journal of Physiotherapy, but besides that I've done more publications under Journal of Agricultural and Biological Sciences which is run by the University of Zambia. I've done publications on some online journals, ok. I've also done publications in . . . a biomedical online journal which publishes things pertaining to biomedical research, as you know I actually have two professions running parallel. So I've looked at issues of bio-ethics and I've done publications online in that area. I've also done publications through the Ghana Journal of Physiotherapy."*

*"In research I have a few things to show for it. I have a thesis and I have published three articles of which two I was on my own. One of them is in the Journal of Community Health Sciences at UWC."*

*The second one I published it with my colleagues in the African Journal of Health Education. That was the second one. Then the last article that I published was in the West African Journal of Occupational Health.”*

Postgraduates from Zambia and Rwanda respectively, stated that they had managed to access research funds at some point in their respective work places.

*“When I joined here, we had the privilege of having some funds. We did a research in the department on the ‘Burden of Care for Children with Disabilities on the Caregivers’ and it was published.”*

*“I managed to get some funds to carry out a study among hospital staff and that was because of the knowledge I got from UWC. It really helped much.”*

The quotes demonstrate that participants were able to access research funds, conduct research projects and disseminate their research findings in peer reviewed journals. It should however be noted that senior academics engaged research activities more than their counterparts with relatively less work experience as also reported by Frantz et al. (2010). The participants’ involvement in research following the UWC BSc (Honours) and Master’s programmes is to a large extent a result of the UWC training programmes. This is evidenced by the apparent participation of both Master’s and PhD qualified participants in research activity. As a consequence, participants were adding value to their respective workplaces and countries by participating in the research agenda of their institutions and countries, a finding similar to a study conducted by Schattner et al. (2007), which reports that research Master’s graduates increased their level of publications after doing the course. This finding resonates well with one of the objectives of the UWC BSc (Honours) and Master’s programmes which was to increase research activity among DTPs in Africa. Conversely, many postgraduates working as Physiotherapy clinicians stated that they were unable to conduct research due to lack of funding and busy schedules:

*“ . . .it is expected for me to not only consume what has been produced in terms of research but also produce research you know but always the gaps are the resources because to be able to generate knowledge you always need some resource particularly money because research also involves time and money.” (Tanzanian participant)*

*“In this part of the world, research funds are difficult to come by. Apart from just doing it for my own sake, reading and maybe contributing one here and there in a small way, I don't think I've done a lot of anything with the research since I left South Africa because I'd no other research project after I left South Africa. . .funding is a challenge. So then it's like we left research to universities and I'm not at the university.”(Tanzanian participant)*

The interview extracts indicate that participants in clinical areas had challenges accessing research funds, hence the reported research inactivity among some Physiotherapy clinicians. The researcher however argues that mini research projects could be conducted within the institution with the sole purpose of informing or improving practice through the evaluation of patient records and patient exit interviews, an exercise which may not require a colossal sum of money. Thus the apparent reported research inactivity could be as a result of a non-robust institutional research culture. In countries like Tanzania, participants had challenges continuing on the path of research publications owing to time constraints as a result of high patient workloads which the researcher witnessed during the data collection process. Muhimbili Orthopedic Hospital in particular, where the majority of the Tanzanian participants work, is the largest orthopedic institute in Tanzania and services the entire country. The hospital's Department of Physiotherapy alone can see up to two hundred (200) out-patients per day, making it difficult for participants working there to engage in research. Some Tanzanian participants explained their challenges in the following statements:

*“I only published a single portion of my research . . . I couldn't go further because the main challenge here is time you have a very busy schedule which sometimes it's difficult even to get enough time to go through literature. You can have up to twenty (20) patients a day and when you finish up you are exhausted you cannot say that I can sit down and*

*go through the literature to read and get something or to prepare something it's difficult."*

*"When I came back from UWC after my Master's programme, I went back to my former employer which was Muhimbili Orthopedic Institute (MOI). At MOI, the biggest gap is time. You really don't have much time to do research because of the patients. We have a lot of patients sometimes . . . "you have the in-patients and the out-patients," sincerely at MOI I could not get time to do any research."*

#### **6.3.1.4 Impact of the UWC BSc. (Honours) and Master's Programmes on Service Delivery**

Zambian postgraduates working as faculty spoke of the changes they had introduced in their University. They attributed their research contribution to their workplace to the depth of research knowledge they acquired from UWC:

*"They empowered us a lot to the point that when we came into the University of Zambia, we knew that other programmes were running . . . which I won't mention, were running research. But what we introduced to our students in some courses was the equivalent of what they do at Masters. And so it's our pride to see the level of research that our students do at undergrad. And that is also because of what we've gone through at undergrad and even at my BSc, our depth of research was really, really deep."*

The postgraduates further spoke of the introduction of ethical reviews at undergraduate level and a Master's of Physiotherapy programme:

*"Here you find that the research protocols for undergraduates were not subjected to ethical reviews. . . it's now that we have started that they go to research ethics committees but at first they were just done within the departments. And I raised that issue where I was saying emphasis should not just be placed on Master's but from BSc because students should be made to realise that the standards of research must be upheld right from BSc level not just the Master's level. So what I learnt from UWC was a lot because*

*our supervisors were very strict on marking, on how we presented, on what we did and how to critique.*

*Our students know what it is to do poster presentation and to write because the university is encouraging them. Our Master's students when they presented, the coordinator for the postgraduate committee was very impressed with the output from there. But that all stems from what we learnt at UWC."*

In addition, a Kenyan participant spoke of the respect they had earned from students and colleagues as a result of their clinical expertise and the impact it had on the clinical practice of their students:

*". . . I'm respected by my students, even those who have not even joined the degree programme. Whatever new things I do and I was training my students and they would go out there in the practical areas and they would attend to patients fewer sessions than those who have ten, twenty years of experience, and I think that has made people to come to Jomo Kenyatta University of Agriculture and Technology when they heard we are going there to teach, old men and old ladies have joined the degree programme, because of what they are able to see that my students are able to give. And my students again, during the practicum, instead of being supervised by the qualified people with experience, they became the ones to give continuous medical education."*

The quotes demonstrate that participants implemented some of their newly acquired competencies in the work place. The impact of the UWC BSc (Honours) in academia indicates desirable mastery of research by participants and the ability to introduce new practices in a work environment based on the participants' learning experiences at UWC. The participants also demonstrate the ability to mentor Physiotherapy students in their respective universities by imparting clinical competencies on the management of musculo-skeletal conditions, a competency attributable to the knowledge and skills acquired from the Movement Science and Manual Therapy course at UWC. However, participants also spoke of the challenges they faced in their duties as faculty. Specifically, some participants reported having challenges applying basic sciences at class room level:

*“I’ve got a lot of challenges because first, having a foundation that had no basic sciences, you are forced to be a lecturer and a student at the same time. For you to meet the expectation of these children, in one way I’d say for the basic sciences they might be smarter than you. So for you to go and continue teaching something like Kinesiology, you first had to go back to get the knowledge of the basic sciences that you needed so that you can be able to build onto what they have. So you function as a student and as a lecturer. And funny enough, them they have been taught these basic sciences very well. So you have to up your game and get these basic sciences very well for you to meet their expectation. It’s quite of a challenge. And remember the first time I got the job; we were literally studying and teaching at the same time. It was a challenge. But with time, I’ve become better.”*

In addition, some participants spoke of the difficulties they encountered at work when they were asked to state their area of specialty and the subsequent challenges they encountered with the allied health professions’ council upon registration:

*“. . .going back home with a degree of Master’s of Science in Physiotherapy wasn’t enough for me because I didn’t know how to categorise myself even with my degree, at work I was asked my area of specialty of which I realized I don’t officially but had to come up with one. This later also became a challenge during the registration by the Allied Health Profession’s Council whereby people are categorised according to professional titles and specialty for the level of Master’s, so we had to come up with a title of a Clinical Research Specialist. However, this became monotonous as every other postgraduate from UWC was a clinical research specialist/expert, making a whole bunch of us with just the same specialty/expertise.”*

The challenges registered by UWC trained graduates with regard to application of basic sciences could be attributed to the reasons alluded to in the earlier sections of this chapter such as lack of basic sciences in the UWC BSc (Honours) degree which served as a precursor programme to the Master’s course which prepared participants for lecturing positions in their respective countries.

Furthermore, it could be argued that the diploma certificates that participants held prior to undergoing further training at UWC did not contain sufficient amount of learning time and credits to enable one effectively mentor Baccalaureate-trained Physiotherapy students. It is however also possible that the participants might have forgotten much of the basic sciences learnt at diploma-level due to limited Physiotherapy training opportunities in most parts of the African countries. Regarding the challenges associated with registration of participants with their respective health professionals' bodies according to specialty, the reason might be as a result of the nature of the UWC Master's programme which is a research Master's and not a professional one whereby candidates specialise in a given area (Schattner et al., 2007).

#### **6.3.1.4 Impact of the UWC BSc. (Honours) and Master's Programmes on Sectors and Societies**

Postgraduates also spoke of the impact their training had on their respective health sector and societies. Kenyan and Tanzanian postgraduates respectively, stated that they had seen shorter treatment sessions and quicker improvement of patients presenting with musculo-skeletal disorders:

*“After going through the degree process, I can tell you that when I came back in 2007, when attending to a patient I would get the results within a very short time, less than half the period I would have spent on the same patient. And that gave out my name to the public and I was able to see patients from very far places. The number of patients has become fewer, because when you treat very effectively, the patients are healed very quickly but those people, the traditional PTs, would treat patients even for three months, even two years, and patients come every week. But with the training I received, I don't need to see patients more than twice, and even five sessions is too much, and the patients are better.”*

*“. . . Somebody walks here with intense pain and then after certain manipulations as a result of training with UWC am able to get these people in upright position, was in an*



*inclined position then after fifteen minutes he walks here smiling. . . came with terrible face now smiling out as a result of some mobilizations. . .”*

Another Kenyan postgraduate spoke of their role as a trainer for Physiotherapists working in refugee camps for victims of torture:

*“I am a Physiotherapy Trainer for the Centre for Victims of Torture. I have PTs in Kenya that work for the programme and there are PTs in our Nairobi programme which is an urban refugee programme, and there Physiotherapists that are working in a refugee camp called Dadaab.”*

And in Zambia, one of the postgraduates reported launching community programmes:

*“In Mazabuka, I was coordinating a health promotion project for the council.”*

This demonstrates the impact of the UWC BSc (Honours) and Master’s programme on society as a result of the Manual Therapy, and other courses in the UWC BSc (Honours) and Master’s programmes. The shorter hospital visits could further be explained by improvements in the clinical expertise and competencies of participants, such as broader knowledge of musculo-skeletal disorders, enhanced clinical reasoning, assessment and treatment skills as presented earlier in Section 5.5.1 of this chapter. However, a study conducted by Gijbels, O’Connell, Dalton-O’Connor and O’Donovan (2009) reported limited evidence of benefit to patients and carers. Similarly, the findings of the present study should be treated cautiously as the perceived benefit of the programmes to patients was self-reported by participants. On the other hand, the launching of community programmes by participants of the current study is consistent with the findings in a study by Richardson, MacRae, Schwartz, Bankston and Kosten (2008) where graduates from an online Master’s programme in Occupational Therapy reported launching community programmes, as well as developing hospital and clinic programmes. In the current study, the ability to develop community programmes could be due to the health promotion and community-based rehabilitation courses participants undertook in the UWC BSc (Honours) programme.

### **6.3.1.5 Impact of the UWC BSc. (Honours) and Master's on Physiotherapy Education in Africa**

The post graduates also spoke of the introduction of BSc degree programmes in their respective countries as a result of the UWC BSc (Honours) and Master's programmes they went through. Kenyan post graduates who introduced two Physiotherapy degree programmes almost concurrently express their joy:

*“Of course, we have seen a lot of career growth, because after the graduation, the qualification I got from UWC enabled me to get an employment in the university. And we were the pioneers of the BSc programmes in our local universities. So the knowledge we got from UWC was quiet useful because I can say it gave birth to the BSc programme we have in Kenya. So it was very useful.”*

Kenyan participants explain their role in the introduction of the Physiotherapy Baccalaureate programmes at Jomo Kenyatta University of Agriculture and Technology and Moi University:

*“Coming out of UWC, we worked out a curriculum with my colleagues and that curriculum is what is being offered currently at the university and I'm proud of that. They both started almost at the same time. In fact 2010, 2011, I think. So at Jomo Kenyatta, the programme started in 2011 and at Moi University it started late 2010.”*

And Zambian postgraduates admit that without UWC, they would not have introduced their BSc degree programmes:

*“It has brought huge advancement in Physiotherapy training in Zambia. Because when we finished, even if we were lobbying years before . . . you know we started lobbying for the BSc in the 70's. But it just came to be realized in 2000, years later. One of the reasons was that we did not have Physiotherapists with Master's degrees. You see, so we were the first Zambians to have Master's degrees. Why? Because we first had the BSc Honours from UWC, which was a very, I don't even know how to call it, but extremely*

*important step in the development of Physiotherapy in Zambia. Otherwise we were not going to have the school open.”*

The quotes demonstrate that the UWC BSc (Honours), a precursor of the Master’s programme contributed a great deal to the development and establishment of BSc degree programmes in all the countries that sent DTPs to UWC for a BSc. (Honours) bridging programme and Master’s degree. The establishment of Physiotherapy degree programmes was the ultimate goal of the UWC BSc (Honours) and Master’s programmes as outlined in Chapter Four (4). The objective was to empower DTPs in Africa to introduce degree programmes in their respective countries, an initiative similar to educational collaboration programmes formed between China and six (6) US-based universities in 1988 to prepare a cadre of Master’s prepared nurses to upgrade faculty in China’s emerging Baccalaureate nursing programmes (Sherwood & Liu, 2005).

### **Summary of Theme One**

Participants reported acquiring new competencies which they were implementing in their respective places of work and countries. They highlighted clinical competencies such as acquiring knowledge of Manual Therapy, new treatment skills for musculo-skeletal conditions and enhanced clinical reasoning mostly regarding musculo-skeletal conditions. Participants also reported career growth following the UWC BSc (Honours) and Master’s programmes. They reported engaging in further studies such as PhDs in different countries, promotions at places of work, multiple responsibilities, and job changes from Physiotherapy clinicians to educators and transfers to higher level hospitals such as teaching hospitals. In their places of work, participants reported being involved in research, access to research funds and regarding service delivery, participants stated that they introduced some new courses such as Manual Therapy and some changes such as introduction of ethical reviews in their universities. At community level, participants spoke of patient benefits such as reduced hospital visits and introduction of community programmes.

Participants highlighted the impact of the UWC BSc (Honours) and Master’s programmes such as introduction of five (5) BSc Physiotherapy programmes, two in Kenya, another two in Zambia and one in Rwanda. Finally, participants also reported that the UWC BSc (Honours) and Master’s programmes did not have any impact on management of conditions other than musculo-

skeletal. Some educators also reported having challenges teaching basic sciences and conditions other than musculo-skeletal.

The next section presents workplace supervisors' perceptions of the outcomes and impact of the UWC BSc (Honours) and Master's programmes on Physiotherapy education and clinical practice in Africa.

### **6.3.1 Workplace Supervisors' Perceived Outcomes and Impact of the UWC BSc (Honours) and Master's Programmes on Teaching and Clinical Competencies**

Workplace supervisors spoke of the competencies the UWC postgraduates were applying in their respective workplaces and also highlighted the competency challenges that most postgraduates were faced with in their respective workplaces.

#### **6.3.2.1 Outcomes: Teaching Competencies**

A Dean at a Zambian university which had most of the pioneer postgraduates of UWC described the graduates as excellent teachers:

*“Yeah, when I think it comes to teaching, they have been very keen at teaching and so I've no problems there. In terms of practice, I think . . . that they have come ready to actually teach by doing, keep it up, also, excellent.”*

While a professor at a relatively new university in Zambia described the postgraduates as fast learners, very innovative and creative teachers:

*“I have supervised them on procedures, methods and so on. The general trend I have seen Physiotherapists trained from UWC, I think I know one, two, three, four, and five that I have supervised. They are very innovative, they are very creative, they are fast learners, they are very active and they are interested in the matters of professional development and they carry . . . if they are given tasks, they are very time bound and*

*swift. And they have a lot of common sense most of them, I'm talking of Bevan, Mana, Kuma, whom I have worked closely with, I have no problem."*

However, the supervisor was quick to state that the postgraduates lacked exposure to principles and theories of teaching and learning at Master's level:

*"The only problem they have at the moment is that they are not very exposed at the Master's level to issues of teaching or training. I think they need more on the curriculum on understanding the principles, theories of learning and theories of teaching. And also instructions on design: Writing manuals, books, scripts and how to organise the problem based learning, community based learning and computer-based learning and other forms of learning. I think the Master's programme they went through does not build around it competencies on how to facilitate learning and how to understand a learner so that the teaching is centered on learning. But overall they are a good lot to work with and I work better with these youths because they are an interesting lot."*

In the same vein, a supervisor at the University of Rwanda acknowledged that UWC postgraduates had the knowledge but lacked teaching skills:

*"I think sometimes they have this knowledge but they don't have like skills of teaching. So I think they lack training about teaching methodology to be able to transfer their knowledge correctly so that's what they need."*

The interview extracts demonstrate that pioneer UWC postgraduates at a Zambian university were more skilled in teaching than their counterparts working for relatively new universities in Zambia and Rwanda. This could be explained by the fact that all the pioneer UWC postgraduates had more teaching experience than their counterparts from subsequent intakes. All the pioneer UWC postgraduates but one had worked as diploma-trained Physiotherapy lecturers at college level before they upgraded their credentials to Baccalaureate-level at UWC. Furthermore, the majority of pioneer postgraduates already had a teaching qualification, whereas the Rwandese and other Zambian postgraduates did not. The researcher argues that this extra qualification in teaching and the work experience as teachers in higher education, both at vocational and

university levels could have given them an added advantage over their counterparts. Studies of new faculty in Physiotherapy (Hurst, 2010) and disciplines outside Physiotherapy (Kenny, Pontin & Moore, 2004; Murray & Male, 2005; McArthur-Rose, 2008) have identified some similar patterns in the challenges involved in becoming an academic, particularly in coming to terms with higher education teaching.

Murray and Male (2005) found that despite having previous successful careers in high school teaching, the majority of participants faced challenges in developing a pedagogy for higher education-based teaching education. In a similar fashion, the study by Hurst (2010) on experiences of new Physiotherapy lecturers making the shift from clinical practice into academia, reported that novice academics expressed a need to develop their pedagogical skills while as expected, participants who had completed their postgraduate certificate in higher education (PGCE) reported that their PGCE aided their educational development. The findings of earlier research are significant, particularly in the context of the African countries surveyed by the current study where Physiotherapy Baccalaureate education is relatively new, although majority of educators were experienced Physiotherapy clinicians, only few of them had had opportunity to be involved in academic activities prior to assuming their new roles as educators. The author therefore argues that the absence of prior relevant experience in part contributed to the teaching challenges most of the Physiotherapy educators faced during the transitional period. Secondly, as McArthur-Rouse (2008) postulates, the author identifies that the postgraduates were positioned as experts become novice, in that they needed to acquire new knowledge and understanding of their new professional identity as few academics enter academic life already established as expert educators (Murray & Male, 2005).

### **6.3.2.2 Outcomes: Clinical Competencies**

A medical superintendent in Zambia excitedly spoke of the clinical competencies being applied by one of the Zambian postgraduates working under their supervision.

*“Well, you would give a patient. For example, I gave him a bronchiectasis patient and I told him this patient needs chest Physiotherapy, which are things we just read in books. So I told him he needs chest Physiotherapy. How you are going to do it, I have no idea,*

*so I left. The next moment I went back, the patient told me, Mr. Humphrey was here. This is what he did. He explained quite a lot of things, how you put patients in a certain posture and asked the patient to drain out. For me I thought, wow, this is a plus. I think these things we only read them in books. But now they are being actualized in our own local environment. So I think he's good. I think his clinical acumen is good. I don't know how he wired it but he's good."*

And in Tanzania, a chief medical officer equally joyfully highlighted some of the clinical competencies implemented by one of the Tanzanian postgraduates:

*"To start with, the guy is so good to the extent that whoever goes there would love to go there again because he is very knowledgeable, skilled; he has got a lot of ways of supporting somebody who has got a problem. That is my observation because have been once a victim and I went to see him so what he did to me, not because am the Chief Medical Officer of this hospital, to everybody who goes there you see because sometimes you get feedback from other people saying that you see the guy is good and they would like to go there again. He knows this kind of massage, this kind of handling and what not and sometimes you would find that he uses his hands to do a lot of things and machinery is second option to him. I have not noted any gaps; I think the guy is quite ok. Yah, yah yah. The guy is very good, very good.. . . you see whenever we want him to address something as far as disability is concerned you can see that the guy can discuss that kind of a problem very fluently, so he is very knowledgeable and he is a very skillful guy and he knows what he is doing that is what am saying."*

However, a medical superintendent in Zambia wondered whether the UWC postgraduates were exposed to sufficient amounts of clinical practice during their training:

*"Maybe in terms of clinical, maybe I'd say, I don't know how long you spend in doing the actual clinical work, I don't know. Maybe I'd think that Physiotherapy, it being much of a clinically-based science, one would imagine that the time spent in the hospital with patients would be a lot more because why I say that is that you will think that whilst they are here, they would sort of hold a teaching round for example. I mean here is somebody*

*with a Master of Science so you would expect them to have extra knowledge, even for undergraduates, they would benefit. So I think it would be wise if we could have a situation where these people have some sort of a teaching round, for example. Now they will only acquire those skills if you spend more time in the clinical area. I don't know how long they stay in the clinical area. . .*

*So maybe for me, that's what I'm thinking because as a country we are sort of expanding at a very fast rate. Sooner rather than later, we will start receiving Physiotherapy degree students here. We will look up to Humphrey to say something. So if he has a lack in any of those areas, we might experience a problem.”*

In a similar fashion, a head of the Physiotherapy Department at the largest orthopedic referral hospital in Tanzania indicated that the postgraduates lacked special clinical skills. The work supervisor further stated that there was need for the UWC postgraduate training to consider introducing specialties so as to make rotation of postgraduates in a hospital setting easier:

*“If you want to make a rotation and send someone to ICU or suddenly take somebody to cardio it's easier . . . rather than sending somebody generally. And there have been mismanagement sometimes. . . There is something lacking in terms of when you want to utilise them, you want to utilise them in terms of their profession to differentiate between a BSc holder from KCMC and specialists like holders of Master of Science degrees in Physiotherapy and make him or her feel different from somebody with a diploma.”*

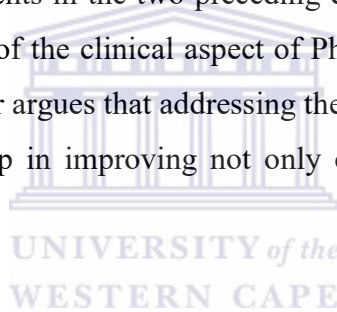
Further, a professor at a private medical school in Zambia stated that postgraduate Physiotherapists also have to be competent in areas such as sports medicine other than the usual areas:

*“And also I don't know to what extent the Master's degree prepares them to look at other medical conditions, of course as a Physiotherapist, they need to be really competent in various fields of medicine including sports medicine now, which we want to launch here as a first degree and diploma respectively.”*



This indicates that while the UWC postgraduates have demonstrated advanced knowledge in many areas, they lack some skills, particularly clinical skills in some areas of Physiotherapy practice. This could be explained by the reported absence of clinical training in other areas of Physiotherapy practice. The omission of clinical modules and practice in the UWC BSc (Honours) and Master's programmes was first mentioned by the UWC PDs in Chapter Four (4) and later in Chapter Five (5) by the UWC BSc (Honours) and Master's graduates.

As earlier stated in Chapter Four (4), the omission of clinical modules was attributed to the fact that UWC was not allocated any teaching hospital during South Africa's apartheid governance system and secondly, the African Rehabilitation Institute, whose research findings informed the development of the UWC BSc (Honours) and Master's programmes did not highlight lack of clinical practice as one of the challenges of DTPs, hence the omission. The observation by work supervisors reiterate earlier comments in the two preceding chapters, Four (4) and Five (5), and thus demonstrates the importance of the clinical aspect of Physiotherapy education in the UWC programmes. Therefore, the author argues that addressing the highlighted clinical training deficit in the said programme would help in improving not only clinical research but health service delivery in Africa.



### **Summary of Theme Two**

Generally, this study shows that UWC postgraduates with extra training in education such as teaching methods demonstrated excellent teaching skills while others without any training and prior experience in teaching at university-level had many challenges employing teaching and learning methods due to a lack of exposure to teaching and learning theories. In the area of clinical practice, although the postgraduates demonstrated a satisfactory level of clinical practice, both academic and clinical supervisors reported some performance gaps which they attributed to the absence of clinical practice in the UWC BSc (Honours) and Master's programmes. It is also clear in the study that some academic supervisors appealed for more clinical subjects to be included in the UWC BSc (Honours) curriculum including Sports Physiotherapy while others reported that the graduates faced difficulties with student supervision in clinical settings.

### 6.3.2.3 Impact at the workplace

Workplace supervisors spoke of the contributions that the UWC postgraduates had made to their respective workplaces. A medical superintendent at one of the provincial hospitals in Zambia spoke of improved health rehabilitative service delivery since the UWC postgraduate joined their institution:

*“With the coming of Humphrey, I think they are putting in extra effort because you think that if they don’t have the resources, they will sit back and wait. But I think they are managing . . . their resources . . . so they will come up and say we would like to have this piece of machine so that we can do these things. There you see people being innovative and at the same time pushing to improve the quality of service that they are providing. So I think the performance has improved to about 8 out of 10 or so. I wouldn’t give them 10 out of 10 because we are not yet there. So I want us to keep striving to get better. Obviously, when we just had technologists from our college in Lusaka, they would do only the basics. So it looks like this one has come in with a bit of new information and I think for me as the institution, we just have to support what he says so that we can lift the services.”*

*It’s about improving from where we were, getting to a better level. And of course he provides leadership in terms of training of his colleagues. So from time to time, he would do clinical presentations in Physiotherapy which was almost unheard of in the past and when they do that, you would find he brings out quite a lot of new information and he encourages his colleagues to be in attendance. So by that, I think he’s really added value to the department.”*

The medical superintendent further spoke of the postgraduate’s contribution at management level and explains why the hospital management appointed the postgraduate as head of unit:

*“Naturally when you have people that have gone beyond an ordinary first degree, their level of thinking is a bit more advanced so to say. And when we sit, for example we sit in a management meeting, Humphrey is very . . . I don’t know which word I want to say . . . adds value, somebody that attends meetings regularly. So he would be part and parcel of*

*the decision-making. His reasoning is more than the ones that are from diploma-level. He contributes quite a lot and because of that, we decided to make him head of unit, not because he has an extra degree. For me, I look at performance. So because there was this young man who is very eager to contribute to the institution, who is willing to take extra tasks, and because of that I thought, Why not? Why can't he be the Head of the unit? He has certain leadership qualities that we as an institution can benefit from."*

In a similar fashion, a Tanzanian Head of the Physiotherapy Department at the largest orthopedic hospital in that country explained how the UWC postgraduates effected changes in the Physiotherapy Department upon their graduation and their valuable contributions in institutional meetings:

*"After graduating, they suggested that patients must have their own sitting area and that the department should have a reception here and they designed a patient flow chart and the position of the reception. I have also seen them modify things even you see Marita, there she reorganised her treatment room by removing some tables and putting some books in her treatment room, the same applies to other UWC graduates so you see these people don't want to go to the previous life, they want to see a difference and as a result I have relief in terms of disciplinary measures because they are also assisting their juniors in terms of being mentors to others. Have seen in my unit there always studying, reading research papers you see when we exchange views in our meetings if they talk, they talk sense you see and people believe in them"*

In addition, a Chief Medical Officer at another hospital in Dar el Salaam, Tanzania spoke of the contributions the postgraduates had made to their hospital and explained how satisfied both patients and management was with their performance:

*"Since he came here, that area has been improving and the number of patients has been increasing. I normally give some patients questionnaires, there has been no complaints, nobody is complaining, nobody is complaining that's why am saying that you see the knowledge that he acquired from that university, from South Africa, probably was quite good because now you can see the returns, you can see the way he does things. . . I would*

*wish if the rest of the Physiotherapists could follow suit and do the same thing like the way he is doing. He is a very good teacher; he is a very good teacher. They should keep training, if there is any chance if they can accommodate I am ready to send another person to go there for training because I would like to have another Arnold from that kind of university. I have guys who wish to go there and study. I can ask my organisation to give an offer if they want somebody to go there to acquire the same knowledge. We are quite satisfied with what he does.”*

And a supervisor at the University of Rwanda stated that acquisition of higher degrees by Physiotherapy educators in Rwanda had added value to the department and institution at large:

*“The value they have added is one, the achievement in Physiotherapy to get to the Master’s degree because as you know in higher learning institutions, it ranked as one of the criteria in terms of staff qualifications. Our department of Physiotherapy is among the departments having highly qualified staff for instance we have Master’s and PhDs, we don’t have staff with only Bachelor’s degrees now, so in terms of qualifications, it’s giving a good image to the university. In terms of their performance, they are doing research and publications and publications are good our higher institution but also as I said because of their skills they are contributing even to the whole college not only the department by conducting research for the college. For instance, there was a study about the graduates of the College of Health Sciences.”*

The interview extracts above demonstrate that UWC postgraduates had made substantial contributions at both institutional and departmental levels in their respective hospitals and universities. The skills highlighted by workplace supervisors include generic skills expected of university graduates including innovation, enhanced knowledge, good leadership and management skills, presentation skills, critical thinking and reasoning and ability to take extra responsibilities. Accordingly, Ramli, Nawawi and Chun (2010) argue that Physiotherapy graduates are expected to possess not only the knowledge required, but also skills such as thinking ability, communication ability and problem-solving ability. Thus Physiotherapy Departments seek to provide students with broad educational experiences, assisting them to develop generic skills such as independent learning, teamwork, responsibility towards other

people, problem solving abilities and the like (Crosbie et al., 2002). Therefore, the skills exhibited by the UWC postgraduates reflect a range of generic skills which are essential for professionals working within the constantly changing local and global work environments (Higgs, Hunt, Higgs and Neubauer, 1999). Furthermore, the reported attributes, satisfy the requirements of the education policy directive stated in the South African education white paper

*“South African higher education institutions should be producing graduates with the skills and competencies that build the foundations for lifelong learning, including, critical, analytical, problem-solving and communication skills, as well as the ability to deal with change and diversity, in particular, the tolerance of different views and ideas’ (Education White Paper 3- A Programme for Higher Education Transformation, 1997).”*

At institutional level, universities identify desirable generic educational outcomes for their graduates (Bithell, 2007). In the same vein, based on the recommendations of the education white paper on the desired graduate attributes as quoted above, University of the Western Cape has published a blueprint detailing the desired generic skills or attributes of a UWC graduate and these include: a critical attitude towards knowledge (scholarship), lifelong learning, enquiry-focused and knowledgeable, critically and relevantly literate and skilled communicators among others. Interestingly, these generic skills are consistent with the ones observed by workplace supervisors among the UWC BSc (Honours) and Master’s graduates. This therefore implies that the qualities, values, attitudes, skills and understandings exhibited by the UWC graduates is as set out by the University of the Western Cape in their charter of graduate attributes (UWC Charter of Graduate Attributes).

### **Summary of Theme Three**

The study shows that UWC postgraduates have impacted their workplaces in various ways. According to the supervisors, UWC postgraduates have contributed positively to the operations of departments of Physiotherapy in their respective hospitals and universities. Supervisors praised the postgraduates for their innovativeness, enhanced knowledge, good leadership and management skills, critical thinking and reasoning and willingness to take extra responsibilities. Many workplace supervisors reported improved patient flow and introduction of clinical presentations at departmental level which was previously not the case when they only had DTPs.

Academic supervisors reported improvements in local university rankings through increase in number of lecturers with master's degrees.

#### **6.3.2.4 Impact on Physiotherapy Education**

Workplace supervisors spoke of the impact of the UWC BSc. (Honours) and Master's programmes on Physiotherapy education in their respective countries. The dean of Zambia's first and largest medical school explained the contribution made by South Africa and UWC in particular towards initiating a BSc Physiotherapy programme in Zambia:

*“You will realise that we started the BSc Programme rather late for Zambia. And as such we had to depend on people trained elsewhere for this programme. And we . . . for the process of us having Zambians come onto this programme, we must say that the South African programme did quite a lot, populating the Department of Physiotherapy and I think we must give them credit for that. And having come in, I think they have done quite well, okay. And I think that the previous Head of Department . . . three quarters of the lecturers were all graduates of the South African Master's programme. So it has made a very big contribution towards not only initiating the program of the BSc Physiotherapy here, but also in sustaining the programme up to this time. You know we started with five, seven students, but now we are getting very close to taking a class of fifty, and so we must give them credit.”*

The Dean further explained how the UWC BSc (Honours) influenced the development of the BSc Physiotherapy curriculum in Zambia:

*“And you must know that our BSc Degree has had to get certain components from the BSc (Honours) degree that is being offered in South Africa. And I think some of our lecturers who got their Master's degrees there actually . . . started with the BSc (Honours).”*

And the first Head of Physiotherapy Department at the University of Zambia said they would not be a BSc Physiotherapy programme without the contribution of UWC:

*“We wouldn’t . . . without the product of UWC, we wouldn’t have the programme. Simply put, we wouldn’t have the programme. The programme is up and running because UWC graduates got it up and running.”*

In addition, the Head of the Department of Physiotherapy at the University of Rwanda gave a background of Physiotherapy education in Rwanda and explains the role UWC played in upgrading the qualifications of PTs and subsequent initiation of the BSc Physiotherapy programme in that country:

*“I remember we started asking our former head of department to upgrade the training from a diploma to Bachelor’s and Master’s degrees, then one of the motivations was that they were people who had gone to do their Master’s programmes so those people when they come back, they will be able to teach the Bachelor’s programme and when those people who had gone to do masters at UWC came back, it was now the justification that having a BSc was possible because the staff have masters degrees and they will be able to teach. Without UWC, I think the Bachelor’s degree would have started much later because without UWC all Physiotherapists here in Rwanda had diplomas and we couldn’t start a Bachelor’s degree so this BSc programme we have is really a fruit of the UWC programmes.”*

The Dean of the School of Medicine at a private university in Zambia explains the value that UWC had added to their university:

*“Well, the first coordinator of Physiotherapy at our university was Ruth from Western Cape. Second coordinator is Ronald, from Western Cape, the Dean designate Dr. Evelyn is from Western Cape. So it explains that they have added a lot of value in the university programme.”*

It is evident from the interview extracts above that it was not until the UWC BSc (Honours) and Master's postgraduates completed their studies at UWC that Baccalaureate programmes in Physiotherapy were established in most East African and SADC countries, including Rwanda and Zambia. In the same vein, Kenyan graduates in Chapter Five (5), indicated that two Baccalaureate Physiotherapy programmes were established following graduates' completion of Master's programmes at UWC.

This demonstrates that the chief objective of the UWC BSc (Honours) and Master's programmes is being realised. The main objective of the said programme as highlighted in Chapter Four (4) was to upgrade DTPs in Africa in order to empower them with credentials required of an academic so as to facilitate the introduction of Physiotherapy degree programmes in their respective countries. The realisation of this objective has been confirmed by UWC postgraduates in Chapter Five (5) and corroborated by workplace supervisors in this chapter. It is therefore clear that the UWC Master's programme has impacted Physiotherapy education in Africa in a positive manner and as a consequence, a total of five (5) Baccalaureate programmes in Physiotherapy had been established at the time of the current study. The first being the University of Zambia Physiotherapy programme in 2000, then followed by the Physiotherapy programme at the University of Rwanda in 2006 (Chevan, M'kumbuzi & Biraguma, 2012) and more recently, Kenya's Moi university and Jomo Kenyatta University of Agriculture and Technology introduced Baccalaureate Physiotherapy programmes in 2010 and 2011 respectively. In addition to the introduction of Baccalaureate Physiotherapy programmes in their respective countries, workplace supervisors also reported the contributions of the postgraduates to their universities. A workplace supervisor at the University of Rwanda highlighted some of the contributions of the UWC postgraduates at institution level:

*"I think the good thing is that many of the postgraduates from UWC are being promoted to higher levels in the department, for instance there is one who was promoted in 2011 as Director of Research, there is also another one who was promoted to be the Director of Quality Assurance and. . . the Dean of the School of Health Sciences comprising eight departments was also a staff in our department from the University of Western Cape. Those within the department are doing very well in teaching and research and I think the*



*Department of Physiotherapy is one of the leading departments in research at University of Rwanda.”*

The Rwandan workplace supervisor further reported that some of the UWC postgraduates were pursuing further studies either at UWC or elsewhere:

*“There is four staff permanently working in the department, and the other four who are also the staff of the department but are pursuing PhD studies either at UWC or UCT.”*

This indicates that the UWC postgraduates exhibit the attribute of lifelong learning as enshrined in the UWC charter of graduate attributes highlighted early on in the chapter. Furthermore, the zest to continue learning among UWC Physiotherapy graduates has the capacity to engender the necessary educational and research collaborations as well as clinical practice enhancements that newly formed Physiotherapy programmes need to thrive. The Dean of the School of Medicine at the University of Zambia explains the importance of international higher degrees:

*“. . . we do encourage people to do their Master’s in foreign universities, more so to bring in different aspects okay, in training, to bring in different trends of what is going on both in practice and in the education sector and also to increase on our networks, both educational networks and research networks. And so that is why we are very keen on people to train outside the country. For the School of Medicine, it’s a must that you have internationalisation of your faculty so to say, that brings a richness of experience and its very, very good for training purposes. Added to that, of course is the whole issue of networking. We would want at least everyone coming to the lecturer position to have a research network that they can fall upon.”*

In discussing the impact of the UWC BSc (Honours) and Master’s programmes, workplace supervisors raised concerns regarding the UWC BSc (Honours) programme which was the precursor to the Master’s course. When asked about the allegations that Zambian universities did not recognize the UWC BSc (Honours) programme, some supervisors at two Zambian universities offering BSc programmes in Physiotherapy expressed misgivings about the way the

precursor programme was being implemented by UWC. A Dean of the School of Medicine at the University of Zambia called for a robust taught component of the programme:

*“I have had one or two queries from our university, trying to put the BSc (Honours) degree in a particular category and they say that for people to build down to their Master’s, they must have a proper BSc before getting BSc (Honours). But I think that understanding has been corrected. . . . Of late, I think it has been made very clear that the BSc (Honours) has an edge over a BSc degree and I hope that is about the understanding. But as for me, it has been quite good. I have no reasons to doubt. In terms of training, I think it would be good for University of Western Cape to continue to insist that we have a robust taught component and also a robust research component on the programme. . . We need to continue to strengthen our ties.”*

Another supervisor at a private university in Zambia challenged UWC to revisit the BSc (Honours) programme in terms of its duration and content. The dean further stated their university had difficulties conceptualising the honours degree:

*“I think Western Cape should revisit the Honour’s programme. We have doubts in employing them as graduates. As you know, Zambian universities are British universities, we are full of dogma. We want a first degree four years, Master’s degree, PhD without diluting, if that is the right term. We have difficulties in conceptualising the accelerated degree status. You can have three years training as Physiotherapist, but that does not make you equivalent to one who has studied really for a degree. At diploma level, you are introduced to this, introduced to this, introduced to this, introduced to this, basically. And then looking at experience, you are using experience based on the knowledge levels you have accumulated. I don’t think that there is a way you will say a Physiotherapist who has done a three year diploma, after working for three, four, five years now, in terms of understanding concepts, theories, philosophies around an area, they have migrated higher, no. But in terms of manual dexterity, doing the job routinely, there, they are better, but there is no co-related increase in understanding concepts.”*

The dean, who is also a professor of medical education, added that the background check of DTPs in terms of the strength of contact hours and credit hours at diploma level should determine contact hours, credit hours and credit factor at BSc (Honours) level:

*“Let them call it Bachelor’s degree or BSc degree, four years. If these people come with prior learning three years diploma, what we would rather want to see is the strength of their contact hours and credit hours, then the credit factor at the end. Now in terms of diploma qualification, we want to see them to do that, and on the other hand, the degree qualification the contact hours, the credit hours and the credit factor included. Then merge these, such that those who come with the diploma, the questions that will be asked are how much of theory, if they have to go into degree status, how much of research, how much of statistics, how much of everything is accredited towards prior learning in order for people to migrate to the degree status so that at the end of the day the university stops giving Honour’s degree because its causing confusion. Let it be a degree, Master’s and PhD, let there be nothing between or after. If it will be an Honour’s degree, it must be a superior degree to the basic degree the university offers. Then it will be sensible. One will have BA, BA Honour’s, Master’s and PhD.”*

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Furthermore, a senior lecturer at the University of Zambia revealed that the university was no longer keen to employ UWC postgraduates as academics and advised that UWC adds more content to the BSc (Honours) programme:

*“I know that the university now is not so keen on recruiting people from UWC. But their argument really has been that we need to have that person who has that BSc, full BSc, and then have a Master’s. I think they can keep it as a BSc (Honours). But I think what needs to be done is just to add more courses to it. . . to allow for more variety at that level and be able to meet the needs of the people that are coming in. . . I think a component of clinical will go a long way . . . So I would advocate that when people go through the whole meal, they see things at a totally different level. Then when you go from diploma to Master’s, you’ve missed out a huge chunk there. And when you begin to deliver then at Bachelor’s-level, you are either delivering too high or delivering too low.*

*That gap is just always there. When we first took our first members of staff, there was one who had a diploma, and then had another diploma and then went to Master's. UWC recognised the other diploma in between and said it would be quite close to having Honour's. So we will allow you to proceed and go straight into Master's. But I think when you look at teaching skills and things; I think at some stage you see the gaps."*

The Zambian supervisors further explain why they had difficulties employing UWC postgraduates as graduates:

*"Western Cape is relatively a new university that has come in and we want to understand what is the meaning of Honour's degree to a person who has done a diploma here, goes to Western Cape and they are given an accelerated programme, they earn an Honour's degree, that is the area we want to understand because, to us who have been following a British system of BSc four years, Master's two years and above, and PhD three years and above, we have a problem. We seem to say, but where is the intersection, what makes it Honour's, where is the first degree, because I remember, some universities in South Africa, they will offer the first degree, I think it's three years, we get a BA. Then there is a one year Honour's, then they can go into a Master's. Now what we want to know is whether the South African first degree, best degree the same as a Zambia's three year diploma, that has to be clarified because we have problems in employing them."*

This demonstrates that although universities in Zambia employed the UWC postgraduates who constitute the majority of the workforce in the two universities offering Physiotherapy degree programmes, the employment trend has slowly changed following successful implementation of Baccalaureate and Master's programmes in that country. As a consequence, the universities prefer their local products to UWC based on their preferred BSc content, which arguably UWC products do not possess. It could be argued therefore that UWC graduates were more in demand during the formative stage of degree programmes in Zambia, because the universities needed postgraduates to have the programmes introduced as per university requirement (Louw et al., 2007).

The demand has however diminished over the years, especially in academia, owing to perceived deficits in terms of the content of the UWC BSc (Honours) programme leading to misgivings regarding the robustness of the programme. In the wisdom of the supervisors, it is not so much about the nomenclature of the programme, but rather the content and duration which did not seem to adequately prepare its learners to enable them serve at university level as academics. The information given by workplace supervisors regarding the UWC BSc (Honours) programme corroborates with the expectations of the UWC postgraduates in Chapter Five (5). The postgraduates reported that they expected to learn more of clinical skills and in-depth understanding of basic sciences. The researcher argues that the expectations of the postgraduates reflected their perceived inadequacies confirmed in Section 5.5.1 of Chapter Five, highlighting the challenges graduates had in terms of clinical competencies in areas other than musculo-skeletal skills following graduation. In addition, some novice UWC postgraduates in academia cited experiencing challenges with application of basic sciences in their new role as lecturers. This could in part justify the perceptions of workplace supervisors regarding the content of the BSc (Honours) programme and their consequent appeal for a more robust UWC BSc (Honours) Curriculum in terms of the taught component, which begs the question, what more should UWC teach? And also calls for a rationale for why UWC should do one thing rather than another. The author argues that in a perfectly homogeneous society, these questions may be answered relatively easily. However, in a highly heterogeneous society, such as the target population for the UWC BSc (Honours), which includes all African countries with diploma programmes, the problems become much more complex and presumably only planning and subsequent development of a workable curriculum would help resolve these complex questions (Ureubu, 1985).

On the UWC Master's degree, all the universities called for the introduction of specialties at UWC. The Head of the Department of Physiotherapy at University of Rwanda said the programme was too general and broad:

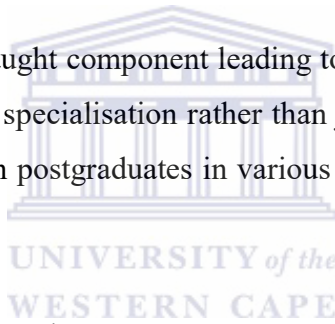
*“ . . . there is one gap I can see, you see the postgraduates of UWC, you see their Master's is too broad and too general, they are not specialised in any specific area so here in my department, I would like to have someone who has specialised in chest Physiotherapy, even teaching that module or has a specialty in Neurology to teach*

*Neurology course., you see there is a lack of specialty so their knowledge is somehow too broad”*

The Dean of the School of Medicine at the University of Zambia reiterates the need for specialisation and added that their university was looking forward more to specialisation:

*“What we are looking forward more to now, is specialisation. If you get your Master of Physiotherapy, we would want to say Master of Physiotherapy in what? So is it muscular skeletal, is it respiratory, is it . . . something that must show bias in a person. Because we don’t say Master of Science, Master of Science, no, no, no. What we want to say is, yes, this guy is Master of Musculo-skeletal, Master of Respiratory, this guy is Pediatric, something like that. We would want to see more of that.”*

The dean further called for more taught component leading towards more in-depth knowledge in ones field of choice at the level of specialisation rather than just research. He further added that their university would want to train postgraduates in various areas to ensure cross-pollination of ideas:



*“You know, most of the Master’s programmes now are going more towards research and there’s very little in the taught component, meaning that you find that most of them, the taught component is only Research Methods. No. what we would want is that there’s a taught component. Let’s say that one is doing a Master’s in Musculo-skeletal Physiotherapy, there must be some components that are leading towards some in-depth knowledge in that field. So they are building up on theory. So that must be as robust as it can be. And then beyond that then they can do their research. We would want to train them in different divisions so that when they come back, there is that cross-pollination of ideas and exposure. We would want really the research programme to address real research issues. We are doing research for purposes of enhancing clinical practice. So if we can do more of that, we will have a lot of practice down here but we will need supervisors from there. So we work together as we build our capacity here. We should continue to build capacity by us working together on some joint projects.”*

The quotes suggest a need for postgraduates to specialise at Master's-level, which also corroborates with the perceptions of the UWC postgraduates in Section 5.3.5 of Chapter Five (5). These findings are in agreement with Hager-Ross and Sundelin (2007) who postulated that postgraduate studies are designed to provide students with the opportunity to undertake advanced skills developments, which as work supervisors seem to suggest, might also mean acquiring skills in various areas of competency thereby allowing for specialisations. As evidenced by the quotes above, the idea behind the call for specialisations is to allow for specialties at postgraduate-level in the context of medical education and practice, so as to advance Physiotherapy practice and education in Africa. By implication, the workplace supervisors appear to favour clinical Master's over research Master's like the UWC Master's programme. The researcher notes that, the development, structure and implementation of an educational programme is dependent on multiple variables such as host countries' education policy, resource availability, economic and political context among others (Urevbu, 1985). The researcher therefore argues that the kind of Master's degree programme offered by UWC could have been influenced by any of the aforementioned factors, considering UWC was one of the historically disadvantaged universities in South Africa.

As articulated by the UWC PDs in Section 4.2.2 of Chapter Four (4), at the time the BSc (Honours) and Master's programmes were being developed, UWC was not affiliated with any teaching hospitals, furthermore, the Department of Physiotherapy in particular was in dire need of educators, a situation which compelled the PDs to develop modules according to available human resources at the time and obviously, training of specialists would only be conducted by competent and experienced specialists. In discussing postgraduate education in South Africa, Louw et al. (2007) reported that postgraduate courses in SA largely came to the fore in the 1990s, adding that many educators were still in the process of obtaining a postgraduate degree themselves. The study by Louw et al. (2007) is significant in appreciating the possible human resource constraints faced by universities in South Africa, especially in the 90s when the UWC programmes were developed. However, the current market forces dictate that an alternative Master's be offered to students with clinical coursework options and subsequent specialisations.

## Summary of Theme Four

It is clear in this study, that the UWC BSc (Honours) and Master's programmes have had a positive impact on Physiotherapy education in Africa. Consequently, five BSc Physiotherapy programmes have been developed and implemented by UWC postgraduates. Kenya boasts of BSc Physiotherapy programmes at Jomo Kenyatta University of Agriculture and Technology and Moi University introduced in 2011 and 2010 respectively. The other two universities offering BSc in Physiotherapy are the University of Zambia (UNZA) and Lusaka Apex Medical University in Zambia; the programmes were introduced in 2000 and 2012 respectively, while University of Rwanda introduced its BSc programme in 2006, graduating its first Bachelor's degree class in 2010. The workplace supervisors at UNZA reported that they now enroll close to fifty (50) students per intake compared to five (5) in the formative stage of the programme. The Department of Physiotherapy at UNZA has since introduced a Master's degree in Orthopedics. However, workplace supervisors stated that it would be good for UWC to continue to insist on robust taught and research components of the BSc (Honours) programme, while others appealed to UWC to revisit the BSc (Honours) programme and emphasise the in-depth understanding of theories, concepts and philosophies around components of Physiotherapy.



### 6.3.2.5 Impact on Research

The Head of the Department of Physiotherapy at the University of Rwanda spoke of the contributions of the UWC post graduates in the area of research at the university.

*“I think the Department of Physiotherapy is one of the leading departments in research at University of Rwanda. They are doing research and publications and publications are good for our higher institution but also as I said because of their skills they are contributing even to the whole college not only the department by conducting research for the college for instance, there was a study about the graduates of the College of Health Sciences.”*

But the Head of the Physiotherapy Department spoke of the challenges the postgraduates were facing in conducting and introducing students to experimental research:



*“Another thing, in terms of research, although am saying they are leading in research but those with master’s degrees from UWC, you can see that they don’t try to do any kind of experimental studies because their used to descriptive studies so they can’t even teach the students to conduct experimental studies.”*

The former Head of the Department of Physiotherapy and a senior lecturer at the University of Zambia spoke of worrying low levels of academic activity by the postgraduates at the university. The senior lecturer attributed the lack of publications to personal strength:

*“I would say some of the weaknesses that we see are the lack of publications of what people have done, which can show the mastery of this individual in terms of, okay, I’ve done this. Check this publication. Then it looks like the Department of Physiotherapy is not really doing very much. And that reflects badly on the department. Unlike in other departments where there are twenty (20), thirty (30) publications every semester, in Physiotherapy there is like five, six publications. But again it’s always the same people who are doing these publications. So I would say maybe about two or three people are actually doing that. I think maybe, less than 50% are doing that. Some of our lecturers, when they are pushing the students to do so, they themselves have no publications to show for their time”*

And the Dean of the School of Medicine at the university confirmed that research had been a gap at the university, especially the Department of Physiotherapy, but attributed part of the problem to their university’s research agenda and lack of funding:

*“Research has been a gap. Most of them have come back; they have really not been able to initiate research in my view. And they have not really related very well to their mentors back at Western Cape. I’m not sure why. Right now, we have a call for joint research between Zambia and South Africa. And this is the second time this call is coming up. We had zero applications, okay, which is just not right. I would have expected them to be at the forefront, “Oh, yeah, there’s this call for research, I will call up my supervisor, can we work together on some research project, or can you be my South*

*African counterpart,” To a large extent, its personal strengths, that’s what I’m trying to draw to.*

*But at the same time, I think the research agenda of the department or of the school also contributes because probably if we had a very robust research agenda, they would be forced to do something. But the school has been very, very loose on its research agenda. It has left it to individuals to pursue their research interests. And as such it’s really recipe for the condition in which we are right now. Funding . . . yeah, funding is a problem as I said. But then, now and again, opportunities do come.”*

This indicates that UWC postgraduates were to an extent engaged in research publications. These findings were however contrary to the reports of the postgraduates in Section 5.5.3 of Chapter Five (5) where they reported publishing in various international journals. The author argues that while the postgraduates’ self-reports of publications could be true, their research performance was probably not to the satisfaction of their supervisors with the exception of Rwandese postgraduates whose supervisor applauded their research prowess, save for other forms of research such as experimental studies. It is clear therefore that while some postgraduates are engaged in research activities in their universities, the transition of some Zambian postgraduates from clinical to academia positioned them as novice assumed to be experts in terms of engaging research activities (Murray & Male, 2005). Although some junior postgraduates were involved in research activities, this study found that much of the publications were undertaken by senior teaching staff in both Rwanda and Zambia. This is consistent with a study by Frantz et al. (2010) which reported relatively more research activity among senior faculty at a department of Physiotherapy. The researcher suggests that a number of factors including research collaborations, personal strength and institutional research agendas of universities may be influencing the challenges with research engagements found in this study. For example, both novice and experienced Rwandan postgraduates have had an opportunity to publish through collaborations with USA-based academics (Chevan, M’kumbuzi & Biraguma, 2011) and Health Volunteers Oversees (Sander et al., 2015).

Workplace supervisors in clinical settings also reported some research activities being done by postgraduates in their respective hospitals. In Zambia, a medical superintendent reported that the postgraduate at their hospital conducted some research:

*“The sort of research that I encourage is one that doesn’t have to do with really patient changes and things like that. So I don’t have to get ethics clearance from Ministry of Health. We will do maybe things like this area is sending so many patients, what’s going on? What is it that they have different from the rest of the community? So for Physiotherapy, I remember they did a little research, I remember he sent me a document . . . it was interesting though it wasn’t done from here. I think they did it as a Province, so I think that they are engaged in research. But for now, like I said, we are encouraging things that are local so we could have local reasons and local solutions.”*

In Tanzania, although the chief medical officer agreed that research activities were conducted at the private hospital by academics at the sister university, the postgraduates were not involved owing to high patient work load and time constraints:

*“We are running research within the hospital premises off-course on the side of the university. As a hospital, we are not conducting any research but the research is being conducted for the university, they are doing research in malaria, they are doing research in HIV, they are doing research in mushrooms so those are the kind of research currently taking place. He’s not involved in any research, maybe he would love to be involved but he’s overwhelmed with a number of patients, of-course the patients are so many because you know Dar-re-salaam, it is just a city with a lot of cars around and there are plenty of reckless drivers those who drive without license and they cause a lot of accidents. . .”*

The interview extracts suggest that postgraduates in clinical practice were not very involved in research due to time constraints. This could be explained by the assumption that research activities are the preserve of universities. Furthermore, health institutions such as hospitals focus mainly on provision of health services. The findings corroborate with perceptions of graduates working in health institutions as reported in Section 5.5.3 of Chapter Five (5), findings similar to a study conducted in Canada on university alumni three years after graduation, which reported

that some alumni were able to identify specific strategies that they had incorporated into their practice, while others found it difficult to conduct research owing to time constraints (Solomon, Ohman & Miller, 2004).

Clinician physiotherapists interviewed in the USA, on integration of research in the Physiotherapy clinic, revealed that bringing research into practice often involves collaboration with researchers (Starcke, 2009). It is clear therefore that Physiotherapy clinicians view themselves purely as clinicians who should not play the role of a researcher. However, other forms of research that use secondary information found in patient registers and health information systems can be promoted such as analysing prevalent conditions seen by a Physiotherapist vis-à-vis interventions. The author postulates that determining prevalence and evaluating treatment methods may enhance clinical reasoning and ultimately improve healthcare delivery.

### **Summary of Theme Five**

Generally, the study demonstrates that UWC graduates were engaged in research, albeit not to the satisfaction of most supervisors. Supervisors reported that experimental studies and graduates' collaboration with their UWC Master's project supervisors was missing. However, some supervisors reported that some gaps in research performance were caused by their own institutional research agenda. Clinical supervisors reported that Physiotherapy clinicians were not involved in research due to high patient workload while others reported minimal research activity.

### **6. 5. Conclusion**

In this chapter, the researcher has demonstrated that the UWC BSc (Honours) and Master's programmes have had a significant impact on the development of Physiotherapy education and research in countries that have been sending DTPs to UWC for further studies. The increase in the number of Physiotherapy training institutions and degree-trained Physiotherapists as a result of the UWC programmes is obvious. The researcher has also highlighted areas that require development in the UWC BSc (Honours) and Master's programmes, such as the need for more clinical modules and practice at Bachelor's level as well as introducing a professional Master's

degree in Physiotherapy that would foster development of higher cognitive levels among students and allow for specialisation.

The next section further supplements the current chapter through examining the perceptions of the students of UWC postgraduates on the impact of the UWC BSc (Honours) and Master's programmes on Physiotherapy education and clinical practice in Africa.

### **6.3.3 Perceived Impact of the UWC Postgraduate Master's Programme on Students of UWC Postgraduates and their Communities**

The students of the UWC postgraduates spoke of the competencies they acquired during the course of the BSc programmes that they were applying in their respective workplaces and the impact the training had on their countries' Physiotherapy education, health sectors and societies at large. Conversely, students also highlighted the learning and competency challenges they encountered in their universities and practice.

#### **6.3.3.1 Impact on Clinical Practice**

Students reported that they learnt some new competencies from the UWC postgraduates in their respective Universities. Physiotherapy students with prior learning reported acquiring new competencies in the BSc programmes such as new assessment skills, new treatment techniques and evidence-based practice.

##### **6.3.3.1.1 Assessment and Management of Musculo-skeletal Conditions**

Both Kenyan and Zambian BSc Physiotherapy students spoke of exposure to better patient assessment and treatment techniques of musculo-skeletal conditions than they had at diploma-level:

*“History taking is one of the competencies I have acquired; Mr. Nelson is very good at getting to know the history of the patient and has taught us very well. Things like knowing the indicators, things that trigger pain symptoms, things that arouse them and things that*

*put the pain away. So getting that history is also very good because the 24-hour behavior of pain is not an area that was covered well at college.” (Kenyan participant 2)*

*“First of all the assessment skills, I would say, were not so advanced and so I was not getting the appropriate information as such and I would end up treating the patients in very irrelevant ways, for example, just managing them with hot packs. But after I have acquired the knowledge, or for example, the Maitland, and also the assessment skills, I am in a position to assess a patient step by step and even be in a position to diagnose and come up with an impression of what the problem is and administer the appropriate treatment method. And it’s working very well.” (Kenyan participant 3)*

*“There things I never learnt from college. Yes, maybe when it comes to assessment of neurological cases, yes I can say I learnt one or two things because mostly when we were assessing patients, we never even used to grade the pain and then the behavioural symptoms, those are the few things that I learnt.” (Zambian participant 3)*

*“In terms of assessment, I’ve seen a difference in the sense that when I was at college, when we are given a patient, we just used to assess the patient, just make follow ups and a . . . study on the case but here it’s more detailed. When you assess a patient, you need to find an article toward that condition; you need to understand the pathophysiology.” (Zambian participant 2)*

The interview extracts above demonstrate that Physiotherapy students upgrading from diploma to BSc degree level, acquired an advanced level of assessment skills regarding musculo-skeletal conditions. The students used their prior qualification (diploma) as a basis upon which they evaluated the impact of the degree programme on Physiotherapy education. They compared their current competencies to the time they practiced as diploma holders. Thus, students attributed their enhanced assessment skills to the knowledge and skills they acquired at degree level. The researcher argues that the improved assessment skills reported by undergraduate students in Kenya and Zambia could have been as a result of their lecturers’ mastery of clinical knowledge and reasoning in musculo-skeletal conditions as reported in Section 5.5.1 of Chapter Five (5).

Thus, it is this enhanced understanding of assessment of musculo-skeletal conditions being transferred onto the BSc Physiotherapy undergraduates in the two countries.

Other than improved assessment of musculo-skeletal conditions, the Bachelor of Science Physiotherapy students from both Kenya and Zambia also reported better treatment techniques of musculo-skeletal conditions than they had learnt at college level. The students explain their current competencies in the following interviews:

*“. . . In the college, they were not specific in terms of physiological movements and accessory movements. But when I went to the BSc programme, they emphasised more on the accessory movements when it comes to joint manipulations. And I have done that in practice and it's really working.” (Kenyan participant 3)*

*“Manual therapy, there are certain patients that would present with certain pain, particularly for example the common one is low back pain. With the diploma course, all that I knew was pure massage, massage and electrotherapy. But then having had a knowledge of manual therapy, I'm able to use the Mackenzie and Mulligan principle techniques and its actually helping so much because its . . .” (Zambian participant 2)*

It is clear once again that the interview extracts mirror the achievements of the BSc Physiotherapy lecturers at UWC as reported in Section 5.5.1. In a similar fashion, UWC postgraduates, now serving as Physiotherapy educators in their respective countries reported enhanced treatment techniques for musculo-skeletal conditions as a result of the Orthopedic Manual Therapy module at both BSc (Honours) and Masters levels. It could therefore be argued that the reported improvement in the management of musculo-skeletal conditions such as back pain is no doubt attributable to the skills acquired by the UWC postgraduates. The corroborated evidence therefore suggests a positive impact of the UWC Master's programme on clinical education in Physiotherapy. In articulating the impact of university training, particularly Orthopedic Manual Therapy on society and patients, Kenyan students spoke of the impact of manual therapy skills on clinical practice:

*“The patient will tell you there is no more pain. The range of motion is okay. Now I can scratch my back. Maybe somebody had a problem with the shoulder joint and he could not wear the clothes because of the pain. Now the patient will tell you, ‘I can put on clothes without any problems’; unlike when I was out of College, with my diploma, I used to struggle so much with the patient wasting much of the time. But now I can see a patient for like three sessions and the patient is okay.” (Kenyan participant 6)*

*“I have performed them practically on patients that come to me in the hospital and most of them after you’ve done the manipulations the pain is gone and they are so excited and it’s really good; because, for example, some come to me and they tell me they have been under Physiotherapy, for example, for low back pain for more than a year or two years, but when I give them like two, three sessions they are okay. So that’s what tells me that they are effective.” (Kenyan participant 4)*

*“I’ve seen a patient with a back problem. He has been coming to the hospital for like three months . . . I went there, I saw her for five sessions. And then by the time I left there, she was okay, she was asking for the discharge. So that was an indicator.” (Kenyan participant 6)*

*“There are patients that have been managed for a long time by Physiotherapists but now those I have managed will tell you that after your techniques, there is a lot of difference, unlike the other time I was put on the machine and such. So that’s one feedback that I could witness, that one is happening.” (Kenyan participant 5)*

And their Zambian counterparts added:

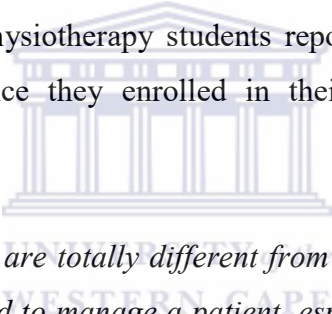
*“It’s an instant remedy! Yes, I had a patient, not really with the back, but the pain was in the elbow, it was actually a stiff elbow. Before, I would just go on and do elbow extension movements, and the patient would be in so much pain. All I wanted to achieve was the range of motion, which could not be manual therapy. I realized that movement is actually*



*a gradual process. It's gradual; you record, gradual, just like that. That's what I can say."* (Participant 4)

*"I first started with my diploma course. And you know when you go in the field, everybody says Physiotherapy is the same, whether you do a PhD, diploma, Master's, the practice is the same. I can be first to start saying that it's actually not. I am in my fourth year, and so far, I have learnt a lot, both theory and practical. And even though Physiotherapy is more of a practical course, hands on, there are so many ways of treating patients that I did not know of, particularly in manual therapy. Previously, you'd attend to patients basically, not knowing, sometimes we'd just work as you guess. But here we've been taught about the science behind every treatment and how it actually works. I've seen a big, big difference."* (Participant 7)

Generally, Bachelor of Science Physiotherapy students reported a substantial improvement in their knowledge and practice since they enrolled in their respective BSc programmes in Physiotherapy:



*"The skills, the techniques, are totally different from what I learnt at the diploma level. So I think I am better placed to manage a patient, especially the mobilization techniques we didn't do at diploma level, we've been taken through them at this level. So I want to believe that I will be a better Physiotherapist."* (Kenyan participant 5)

*Most techniques, especially for the manipulation, McKenzie, Maitland, yeah, those techniques, I didn't have them before because in the diploma level we really didn't touch much of it. But here the lecturers have been in a position to inform us about them and also help us practice them as we continue learning them, and it's really good, because using them and know them is very effective when it comes to back pains and even sports injury patients* (Kenyan participant 3)

This demonstrates that participants acquired a life changing level of knowledge for management of Physiotherapy conditions. It is also clear that much of the reported skills were in the area of

musculo-skeletal Physiotherapy. This could be attributed to the UWC postgraduates reported acquisition of similar competencies in Section 5.5.1 of Chapter Five (5).

Arguably, it could be deduced that the competencies reported by the undergraduate students were as a result of the UWC BSc (Honours) and Master's programmes. Furthermore, the findings of the current study demonstrate evidence of positive impact of musculo-skeletal care through continuous professional development mostly conducted by students of UWC postgraduates in an attempt to empower other diploma trained Physiotherapists not yet on the transition programme. In this regard, Bachelor of Science students in Kenya spoke of the benefits of implementing what they learnt at the university:

*"I am implementing them and just to show that I am doing that, I am the county Physiotherapist right now. So we usually have Continuous Medical Education (CMEs) and actually I am introducing my other colleagues, usually those who are still at the diploma level, to know how to examine patient better, to follow up the treatments, and even to deliver the techniques. And I want to say they have appreciated that. They are calling me most of the time when they have their CMEs, and they give me a topic they want me to discuss. Like now in the part I am in the Western Kenya, we are going to have a Kenya Society of Physiotherapist meeting in that region, in two weeks' time. So they have also invited me to tell them about mobilisation techniques for the back, and I am happy. So it means that whatever we are learning at this level is also being appreciated by others"* (Participant 4)

*"I was able to give some lectures to one supermarket, Yako Supermarket. And they had never seen something like that. Even now they are telling me I should prepare more lessons for them, especially on how to handle their back and how to lift."* (Participant 6)

#### **6.3.3.1.2 Evidence-based Practice**

The Bachelor of Science students from both Kenya and Zambia also reported learning to base their management of patients on current evidence:

*“At university most of the management is based on evidence-based approach, things that have been researched, been identified as a good treatment regime. So it has really changed. So I can see something that has improved even when you are treating cases with the approach now using the modern evidence-based approach, it’s very different, which has changed, even for research that we do, which focuses on different cases at their management and even, you get to see the difference for a person who is pursuing higher learning in university than a diploma holder. The approach is very different. The treatment may vary just slightly, but more so the approach and history taking is very different.” (Kenyan participant 6)*

Students attributed their application of evidence-based practice to the knowledge the UWC postgraduates were imparting in them:

*“Some lecturers would say, for example, if you are treating a patient, you have to find an article supporting your choice of treatment, why you are using such a method while you are treating a patient, then in your literature, you attach a certain article that you have used and you justify why that method was used. . .most of the things which we are taught about treating our patients, we have to use evidence and even during our own treatment, we have to keep record of what we have done to the patient so that after a period of time we evaluate our treatment “(Zambian participant 7)*

*“I will give an example of particularly one lecturer who always mentions where to get the latest and best information, because you know the internet is so vast you find a lot of things on the internet, and anybody can put anything but he had to identify at least four or five websites and we do get good information from there.” (Zambian participant 4)*

*“Evidence-based electrotherapy; I don’t know what word I can use to describe it but I’m able to appreciate the use of different machines based on evidence.”(Zambian participant 1)*

The quotes suggest that BSc Physiotherapy students acquired knowledge of evidence-based practice and its importance. The finding corroborates UWC postgraduates' report on evidence-based practice in Section 5.5.1 of Chapter Five (5). This corroboration therefore implies that UWC postgraduates were imparting some of their acquired research skills to the students they were teaching in their respective countries and universities. The impact of the UWC postgraduate programme reported by undergraduate Physiotherapy students in this study is consistent with the core objectives of the UWC programme which sought to increase access to Physiotherapy Baccalaureate education in Africa and empower DTPs with research skills. Given the introduction of Baccalaureate Physiotherapy training programmes as evidenced by the number of universities offering Physiotherapy education in Kenya and Zambia, the objective of the UWC Physiotherapy programme as highlighted in Section 4.2.2 of Chapter Four (4), can be said to have been realised.

### **Summary of theme one**

The study shows that students of UWC postgraduates had learnt a number of new skills from their educators. The new competencies reported by students include new assessment skills of musculo-skeletal conditions such as back pain. The students also reported enhanced treatment techniques regarding musculoskeletal conditions and use of evidence to guide their practice. Furthermore, the participants reported engaging in continuing professional development activities, where they taught manual therapy skills to other DTPs as well as health promotion activities in industrial areas. The students also reported shorter treatment sessions and reduced hospital visits among patients as a result of the new manual therapy techniques. It is therefore clear that the knowledge gained by UWC graduates had a positive impact on their students, professional bodies and societies.

On the other hand, students spoke of the challenges they encountered during the learning process, including design and content of curricula, absence of class-room based practical teaching methods, lack of specialist lecturers, perceived deficiency in basic sciences among lecturers.

### 6.3.3.2 Gaps in the Design and Content of Curricula

Bachelor of Science Physiotherapy students in both Kenya and Zambia raised concerns over the content and structure of the curricula they were being trained on. Many students in the relatively new universities reported that the curricula were scanty.

*“Well, I think the curriculum, it’s a new one here, but I think it was not so well structured, because there are some things that, in my opinion, should come before the others during the course work. I think that it should have well set out objectives because sometimes you find that when you start a course, you start mixing things up, and there is no clear flow. Learning must be well organized in such a way that one is able to follow through, like we started from here, then we are going this way, this way. There is one course called Kinesiology that was very well handled by a lecturer, but she was not from this university, and she was going systematically but now you find that most of the things that we are actually doing, some things just pop up within the curriculum, and we don’t have like well set-out objectives, [in terms of] what you are supposed to achieve at the end of the class. And therefore you find that there is a conflict between the lecturer and the student, because the objectives are not well set out.” (Kenyan participant)*

*“. . . even lesson plan, or lecture plan, it’s like today he’ll come, he’ll just pick any lesson, there’s no even any continuation from where you ended. Every day things are just mumbled-jumbled, everyday its neuro-tissue, the other day its neuro, so we wonder . . . I feel for these who are doing diploma and those that have not passed through college.” (Zambian participant)*

The students also reported that most of the content in the curricula was a mere repetition of what was covered at diploma level:

*“. . . The courses for instance, the Orthopedic course that we did, it’s more or less like repetition of physical examination that we did at college. So I think it’s better for those people that have diplomas, they have their own class so that there is no repetition. . .*

*They just start from where they ended then those people who are direct entry; they have their own thing because we do certain things in third year because they want to cover up with those people that are direct entry.” (Zambian Participant 1)*

*“Most of the units that we do, it’s just like a repeat, I think we need to review the curriculum and the content that we are being trained on, and to be focused.” (Kenyan participant)*

*“Yes, I think things like electrotherapy, because we keep going through the same machines. The machines that we did at college are the same machines that we even learnt at BSc level. So I think maybe there’s no need for us to go through the same things.” (Zambian participant 2)*

*“I just feel like saying, some courses are just repeated, so it doesn’t make sense learning the same things and hoping, because they were telling us evidence based. But I feel like we are dealing with the same theory that we learnt [at college]” (Zambian participant 4)*

These interview extracts reveal a case of unclear educational objectives in the BSc curricula. It is however worth noting that two of the four universities appeared to have challenges with the structure and implementation of educational activities. The Physiotherapy programmes with no curricula-related complaints had relatively more qualified educators compared to the new programmes. The former also had more experienced educators in matters of higher education, having served as lecturers at college level before enrolling on the UWC BSc (Honours) and Master’s Programmes. Conversely, all full-time educators at the other two universities worked as Physiotherapy clinicians prior to the commencement of their respective Physiotherapy programmes. The gaps raised by BSc students in this study corroborate workplace supervisors’ perceptions of the ability of the UWC graduates to teach as highlighted in Chapter Six (6). Similarly, a study conducted by McArthur-Rouse (2008) reported that nursing staff transitioning from clinical practice to academia felt that their extensive clinical and managerial experience was of little benefit when it came to acclimatising to higher education institutions while those with more experience of teaching felt that it helped them adjust to their new roles.

Furthermore, a study by Murray and Male (2005) reported that novice educators felt they had difficulties determining what (the content of teaching sessions) and how (the pedagogical modes to be used) to teach as well as judging the stages of student development. These findings are relevant to appreciating the challenges of curricula content and implementation reported in the current study.

### 6.3.3.3 Lecturers' Challenges with Basic Science

Bachelor of Science degree students spoke of an obvious lack of depth in the knowledge of basic sciences among the UWC postgraduates.

*“Our lecturers with Master’s degrees are quite good, and especially when it comes to the whole issue of research, and evidence . . . that kind of teaching, whereby you just like go and maybe collect a research journal and then present evidence in class, but when it reaches a time when there is a course where one is expected to have in-depth knowledge of everything, like say the basis of Physiology, and the basis of Anatomy at your fingertips. You find that to an extent, it can be a challenge to them.” (Kenyan participant 2)*

*“The basic sciences are quite lacking. In research they are good, these guys are good, ’cause I think they have done well. They are good in research, because some of the things that they say, they are good in research, maybe coming to review papers, they are good. But on the basis of basic sciences, a lot needs to be done. What I mean is, for example, if you are teaching us something like Kinesiology, you need to have a very good basis of anatomy.” (Kenyan participant 1)*

*“For the science part, though she insists when she gives a test, she always says, there is no science in what you’ve written, but she can’t give you that science. She’s supposed to teach us that science and then examine us. She can’t explain the science behind whatever she teaches . . . she can’t explain the science because she is supposed to teach you. At least give you information like to guide you. . .*

*But she can't guide you. She just copies notes from the net and . . . because we also go on the net and we find the information.”(Zambian participant 2)*

UWC postgraduates were perceived to be lacking a good background knowledge and understanding of basic sciences. This was evidenced by reports of difficulties experienced by the educators during delivery of modules that required knowledge and application of basic sciences and corroborates with the teaching challenges highlighted by UWC postgraduates in Section 5.5.3.1 of Chapter Five (5). This challenge was however only reported by students in programmes with less experienced educators in both Kenya and Zambia. All the educators in these programmes were Physiotherapy clinicians prior to joining academia. Although lack of sufficient knowledge of basic sciences appears solely responsible for the competence challenges highlighted, one would argue that a good clinician would find it relatively easy to apply basic sciences in a teaching session. However, studies on experiences of novice educators in Physiotherapy (Hurst, 2010) and Nursing (McArthur-Rouse, 2008) have reported similar challenges among novice educators during early stages of career transition. Murray and Male (2005) found that despite having previous successful careers, the majority of participants took between two to three years to establish their new professional identities, a finding similar to Hurst (2010) who reported 18 months to 3 years. This is significant because novice educators in the current study had barely worked for two (2) years at the time of the study. Other than a lack of basic sciences which was also reported by some UWC postgraduates working as educators, the researcher argues that the competence issues raised by students could in part be as a result of multiple factors including a lack of teaching experience as demonstrated in previous studies and high workload as reported by some students in the following interviews extracts:

*“We need experienced lecturers. They've just started, so some are still learning. ”.*  
*(Zambian participant 1)*

*“Yes, students are many, and we have only three lecturers who have masters and who are pursuing their PhD programmes. So we're saying that the time allocated for the lecturers is very limited for us to get to acquire the skills expected of us.”(Kenyan participant)*



It is clear that although most students perceived the basic science teaching challenges experienced by their educators as purely due to a lack of sufficient knowledge of the same, lack of teaching experience and high workload as a result of staffing challenges could potentially affect quality of teaching. In discussing learning challenges highlighted by the Kenyan and Zambian BSc Physiotherapy students, the students also reported that Physiotherapy educators had challenges teaching conditions other than musculoskeletal:

*“I will give an example of Neurology. I’m an in-service student. I have a diploma and I’ve practiced within the field. So I know, there’s information that I got. There’s something I learnt at diploma-level, which I’m able to apply even in my practice now. So when I came here to study, I was expecting to gain more knowledge, to learn something new, something different from what I already know. But to my disappointment, I have not learnt much.” (Zambian participant 2)*

*“The cardiovascular, it’s all the same. Whatever I was taught at college is what I am applying up to now. And I have very little knowledge about the sports medicine. (Kenyan participant)”*

*“I think respiratory is one of the courses not well covered, I think there is need to put more effort. As a Physiotherapist, I know I do a lot of respiratory treatments, but at this level I think there is need to put more effort in that area. I think I didn’t find much of it even at this level. I think that lecturers need to improve.” (Kenyan participant)*

*“I feel sorry for those who are just doing Physiotherapy directly, those who have not passed through college. I think that’s a very important step or stage because at diploma level I think we literally covered a lot and I think there’s nothing new that we’d be able to distinguish degree holders from diploma holders, because even now we are working with degree holders. And I think it’s just the same thing.” (Zambian participant 3)*

These findings mirror the competency challenges reported by the UWC postgraduates in Section 5.5.1 of Chapter Five (5). Similar to the learning challenges highlighted by the Kenyan and Zambian BSc Physiotherapy students, the UWC postgraduates (the educators) reported that other than musculo-skeletal conditions, the programmes they undertook at UWC had no impact on knowledge of medical conditions such as Neurology. This is consistent with UWC PDs who indicated that the UWC BSc (Honours) curriculum did not include clinical modules due to staffing and training facility challenges (Section 4.2.2, Chapter Four). Thus, this explains why BSc Physiotherapy students felt that modules such as Neurology, Cardiovascular and Respiratory Conditions were not delivered as expected. According to the students, lecturers appeared to repeat the known instead of improving on the knowledge acquired at diploma-level. This therefore suggests lecturers' challenges regarding the delivery of conditions other than musculo-skeletal.

#### 6.3.3.4 Lack of Specialist Lecturers

The Bachelor of Science degree students also spoke of a lack of specialist lecturers in various areas of Physiotherapy at their respective universities. The students further indicated that most of the UWC postgraduates specialised in musculo-skeletal Physiotherapy:

*“The challenge that we’re facing is that our lecturers majored mostly in the spine. We don’t have experts in the cardio-respiratory system and these other systems that need attention from Physiotherapists. So those, whatever they teach, you will teach something that you are comfortable with. So they come up with teaching material, mostly in the spine and the joints, but they don’t go for cardio, sports.” (Kenyan participant)*

*“There was a course which was taught by medical consultants and yet they don’t understand some things in Physiotherapy. So you find that maybe in Neurology, the person can’t handle Physiotherapy-related neurology, so he will handle it from the medical perspective, so if we can get specialties in Physiotherapy Neurology and Cardiology, it can be better.” (Kenyan participant)*

*“I think when we were talking about external courses, for me the reason why I think they are not important is that the lecturers who are taking us have little knowledge about these things. Instead of teaching us where we are supposed to go, what we are supposed to do. They will just end up teaching everything that is related to that course. So for me, I would love even as they are introducing more courses, maybe they need to train more Physiotherapist in areas like Neurology, Parasitology so that when they teach, it’s in line with Physiotherapy.” (Zambian participant 2)*

This suggests a performance gap in other areas of Physiotherapy education as highlighted in the interview extracts above. The suggested performance gap reaffirms the competency challenges identified in Section 7.2.2.3 of this chapter. The researcher need not belabor the point that BSc Physiotherapy students desired more content in medical conditions such as cardio-vascular and neurology. Thus, the researcher argues that the gaps identified by students could have been caused by the gaps in the contents of the UWC BSc (Honours) curriculum. The curriculum gaps in the UWC programmes were highlighted in Chapter Four (4). Furthermore, the need for a broader array of Physiotherapy specialists was also stated by UWC postgraduates (educators) in Chapter Five (5). The need for specialisation in various areas of competence was corroborated by workplace supervisors in Chapter Six (6) who indicated that they would want the postgraduates to be specialised in different divisions to allow for cross-pollination of ideas upon their return to their respective countries and workplaces. Similarly, a study by Mcmeeken (2007) highlighted that academic and clinical teaching in Australian Physiotherapy programmes was conducted by academics with specialties such as Physiotherapy anatomists and physiologists. This earlier study indicates that universities are desirous of specialised academics in order to produce more informed graduates.

### **Summary of Theme Two**

Students highlighted some of the learning experiences they had in their respective universities. In all the universities but one, the participants noted some gaps in the flow of subjects and contents of the curriculum which may indicate lack of curricula planning and development challenges on the part of the UWC postgraduates.

Other than the curricula, lecture preparation and presentation was also reported to be a challenge for UWC postgraduates. In addition, participants indicated that UWC trained educators had difficulties applying basic sciences during lectures like Kinesiology and others which required a knowledge of basic sciences such as Anatomy and Physiology. Finally, students reported that they lacked specialist lecturers in other areas of Physiotherapy practice such as respiratory, sports medicine, neurology, cardiovascular as all UWC produced educators appeared to have specialised in musculo-skeletal conditions.

#### **7.4. CONCLUSION**

In this chapter, the researcher has demonstrated that the UWC BSc (Honours) and Master's degrees have had a positive impact on the development of advanced musculo-skeletal assessment and treatment skills among students in Kenya and Zambia. The study also reports acquisition of evidence-based practice skills among students. These findings therefore demonstrate BSc Physiotherapy students' perceived impact of the UWC programmes. On the other hand, the study also highlights areas that need attention in the UWC BSc (Honours) and Master's curricula, including teaching methods for graduates preparing for academic careers. The study further highlights difficulties faced by UWC trained educators in basic sciences such as Anatomy and Physiology and the need for UWC postgraduates to be better prepared in other areas of practice other than musculo-skeletal. The next and final chapter highlights the summary of the study, a reflection on strengths, weaknesses and limitations of the study, proposed model for upgrading DTPs, study recommendations and conclusions.

## CHAPTER 7

### SUMMARY, PROCESS FOR UPGRADING DTPs, RECOMMENDATIONS AND CONCLUSIONS

#### 7. INTRODUCTION

This chapter presents a summary of the study, reflects on the strengths, weaknesses and limitations of the study. The chapter also presents a proposed process for upgrading DTPs, the implications for Physiotherapy education and finally recommendations and conclusions.

#### 7.1 SUMMARY

The title of the current study was the outcomes and impact of the UWC postgraduate Physiotherapy Master's programme for diploma-trained Physiotherapists upgrading to BSc (Honours) and Master's degrees at UWC. The study highlights the programme and implementation theories of the said training programmes that run concurrently to upskill diploma trained Physiotherapists. In highlighting the theories, the study revealed the development process of the programmes, implementation process and perceived outcomes and impact of the programmes on clinical, research, Physiotherapy education and professional and career development of the participants. The study highlights the learning experiences of the participants. Furthermore, the study demonstrates areas of the programmes that require improvement. The literature in chapter two located the study within the Context, Input, Process and Product (CIPP) evaluation model. The CIPP framework indicated the importance of identifying linkages between programme context, input, processes and the end product. This included a shift from the traditional methods of evaluation whereby studies are more focused on understanding outcomes to evaluating programmes on all four levels of Context, Input, Process and Product in order to better appreciate outcomes and impact. A theory-based evaluation study using an exploratory and descriptive qualitative methodology, as described in chapter three was used.

In an attempt to understand the UWC BSc (Honours) and Master's programme theories, a review of official documents, face-to-face interviews with the UWC BSc (Honours) and Master's PDs and senior lecturers as programme implementers were conducted. Furthermore, the programme implementation theory was developed through face to face and telephone interviews with the UWC alumni (1996 – 2011 cohorts) to explore the learning experiences of the graduates while at UWC and their perceived outcomes and impact of the programmes. Thereafter, face-to-face interviews with employers and focus group discussions with students of the UWC alumni were held in two of the four participating countries to explore perceived outcomes and impact of the programmes at institutional and society levels. These findings were presented in Chapters Four, Five and Six.

The findings demonstrate that before the introduction of the UWC BSc (Honours) and Master's programmes, nearly all African countries offered diploma programmes in Physiotherapy. Thus the UWC one-year Honours programme was developed to upskill diploma-trained Physiotherapists to degree status, as well as provide an opportunity for a postgraduate Master's programme which was required for African Physiotherapists to introduce degree programmes in their respective countries upon completion of the upgrade (BSc (Honours) and Master's programmes). The development of the BSc (Honours) and Master's programmes was informed by the findings of the African Rehabilitation Institute (ARI). The training needs of diploma-trained Physiotherapists as highlighted in the ARI document included mainly research and community-based rehabilitation. The findings also demonstrate that the introduction of the UWC Physiotherapy programmes was born out of the need to increase access to Physiotherapy degree programmes in Africa in order to respond to the ever changing health needs in Africa. The study revealed that the proposed ARI curriculum for what would become the full four year Honours programme did not allow for exemptions or alternative entry points for diploma-trained Physiotherapists upgrading their qualifications from diploma to BSc (Honours) degree status. Further, the findings reveal that no training needs analyses were conducted apart from the survey conducted by the ARI which identified deficiencies among diploma-trained Physiotherapists in research and community-based rehabilitation.

The UWC postgraduates involved in the study identified that the number of Physiotherapy training facilities in their respective countries was limited. The participants also reported career growth and the flexible admission policy of UWC as major motivation factors for enrolling in the UWC Honours and Master's programmes. The most reported desired competencies and skills included research skills, enhanced clinical skills and deeper understanding of basic sciences. In addition, the postgraduate reported specialisation as main motivation for pursuing a Master's degree in Physiotherapy. Desired areas of specialisation included Neurology, Cardio-pulmonary and musculo-skeletal Physiotherapy.

Participants also reported outcomes and impact of the UWC Honours and Master's programmes. They reported acquiring knowledge of manual therapy, better management of musculo-skeletal conditions and enhanced clinical reasoning. Participants also reported career growth, pursuit of higher degrees such as PhDs, promotions, job changes from Physiotherapy clinicians to educators, involvement in research and introduction of the BSc (Honours) programmes in their respective countries. However, the participants highlighted that the programmes did not have much impact on management of conditions other than musculo-skeletal. Further, the study reveals that participants need more exposure to basic sciences and clinical practice. The current study demonstrates that the primary objective of the UWC programmes such as increasing access to Physiotherapy training in Africa and empowering DTPs with research skills and knowledge of community-based rehabilitation is being realised. However, many DTPs in all sending countries emphasised the need to include basic sciences, clinical practice and specialisation in the UWC BSc (Honours) and Master's programmes respectively.

On the other hand, the employers that participated in the current study highlighted the most critical competencies expected of Physiotherapy graduates. The competencies included ability to conduct research and ability to teach Physiotherapy-related clinical competencies. The participants identified that the UWC programmes had a positive impact on Physiotherapy education in Africa, producing a total of five Physiotherapy degree programmes from the year 2000 to date in many African countries. The study also revealed moderate research activity among UWC postgraduates, a challenge most employers attributed to institutional research agendas, high patient work-load and personal strengths.

The students of UWC graduates that participated in the current study reported acquiring new assessment skills for musculo-skeletal conditions, enhanced treatment techniques for musculo-skeletal conditions and use of evidence to guide their clinical practice. The participants also reported reduced hospital visits among patients and relatively short treatment durations. However, in all universities but one, students indicated that most lecturers had difficulties applying basic sciences, during lectures. The participants also reported a lack of specialist lecturers in areas other than musculo-skeletal.

## **7.2 REFLECTIONS ON STRENGTHS, WEAKNESSES AND LIMITATIONS OF THE STUDY**

The research had a number of strengths. The study used the theory-based evaluation (TBE) approach in combination with the Context, Input, Process and Product (CIPP) model. The CIPP model offered a way of analysing the results starting from the designing and implementation of the UWC BSc (Honours) and Master's programmes; the model helped the researcher to connect the context in which the UWC programmes operates, the resources made available for its implementation, activities carried out and the results reported by the participants, and those reflected in the programme official documents. According to Cojocaru (2009), the CIPP is a typical procedure of TBE. Theory means the professional logic that underlies a programme (Weiss, 1997). The use of this model has the advantage of showing what processes lead to the outcomes observed by collecting data on crucial theoretical constituents such as programme context, input, implementation process and products. According to Rodgers (2000), programme theory has been found to answer to the challenges of evaluation, by providing some clues to answer the question of why programmes work or fail to work. Rogers (2000), further argues that by creating a model of the micro-steps or linkages in the causal path, from programme to ultimate outcomes, programme theory evaluation provides something more about why the programme failed or succeeded in reaching the distal goals it had hoped to achieve. The researcher is certain that the evaluation has served its purpose by showing a series of micro-steps from inputs to outcomes, as cautioned by Weiss (1997).



As Cojocar (2009) postulates, TBE through the use of logic model such as the CIPP was an integration frame of various methods of data collections and interpretations. This served as an integrated form of carrying out methodological triangulation of data sources and collection methods. The evaluator had to search for the best data to test out the programme theories. Thus, the evaluation was based on the programme theory generated through the review of official documents, interviews and focus group discussions with the UWC PDs, lecturers as programme implementers, UWC graduates, UWC graduate employers and students of UWC graduates. These stakeholders were key sources for eliciting programme theory and provide data on how the UWC programme works. Pawson and Tikey (2004), acknowledges the fact that stakeholders generally have the experience of and thus expertise in particular phases and process within an intervention. Theory-based evaluations attend not only to what programmes do but also to how participants respond (Weiss, 1997). Thus, the use of TBE afforded the participants to give feedback on the programme. According to Patton (2001), the greater the triangulation of supporting sources, the more rigorous the supporting evidence.

While the study had much strength, it also had some weaknesses worth highlighting. First, the researcher acknowledges that the experiences of the groups of UWC graduates, graduate employers and students of UWC, postgraduates who participated in the current study were not representative of all UWC postgraduate, postgraduate employers and students of UWC postgraduates in Africa, thus the findings of the study cannot be generalised. While the findings cannot automatically be generalised, they may be transferrable to other similar situations.

The second limitation of the study was that the findings have been constructed by the researcher from data co-created with the participants; and as such is caught in time and place. Furthermore, it should be remembered that the recommendations were derived from the perceived impact on alumni after completion of the course. Probably, future studies should consider a more rigorous evaluation of impact using a credible counterfactual. However, White (2009) argues that theory-based evaluations attempt to understand an intervention's contribution to observed results through a mechanic process interpretation of causation, rather than determining causation through comparison to a counterfactual.

Finally, the fact that the researcher is one of the beneficiaries of the UWC programmes under evaluation, posed a confirmability threat. However, the researcher demonstrated that findings emerged from the data, and not his own predispositions through periodic discussion of the findings with his supervisor and involvement of all relevant stakeholders such as PDs, implementers (lecturers), and workplace supervisors of graduates, graduates from different countries and workplaces and students of graduates in various universities.

### **7.3 PROCESS FOR UPGRADING DIPLOMA-TRAINED PTs**

The current study demonstrates that the UWC BSc (Honours) and Master's programme model has had positive impact on the career growth of the postgraduates, on research and on Physiotherapy education, but relatively little on clinical practice. The stakeholders, who participated in the current study, attributed the apparent unsatisfactory impact on clinical practice to lack of inclusive needs analysis, inevitably resulting into omission of core professional modules and clinical practice in the current model apart from Movement Science and Orthopedic Manual Therapy. Thus, the study highlights the obvious need for a more robust and comprehensive model for better outcomes and impact. The highlighted gaps in the current model, beg for the revision of the UWC BSc (Honours) and Master's programme theory. Using the information from the literature, individual interviews and focus group discussions with key stakeholders who participated in this study, an admission and training process for upskilling diploma-trained Physiotherapists in Africa was proposed (Figure 7.1).

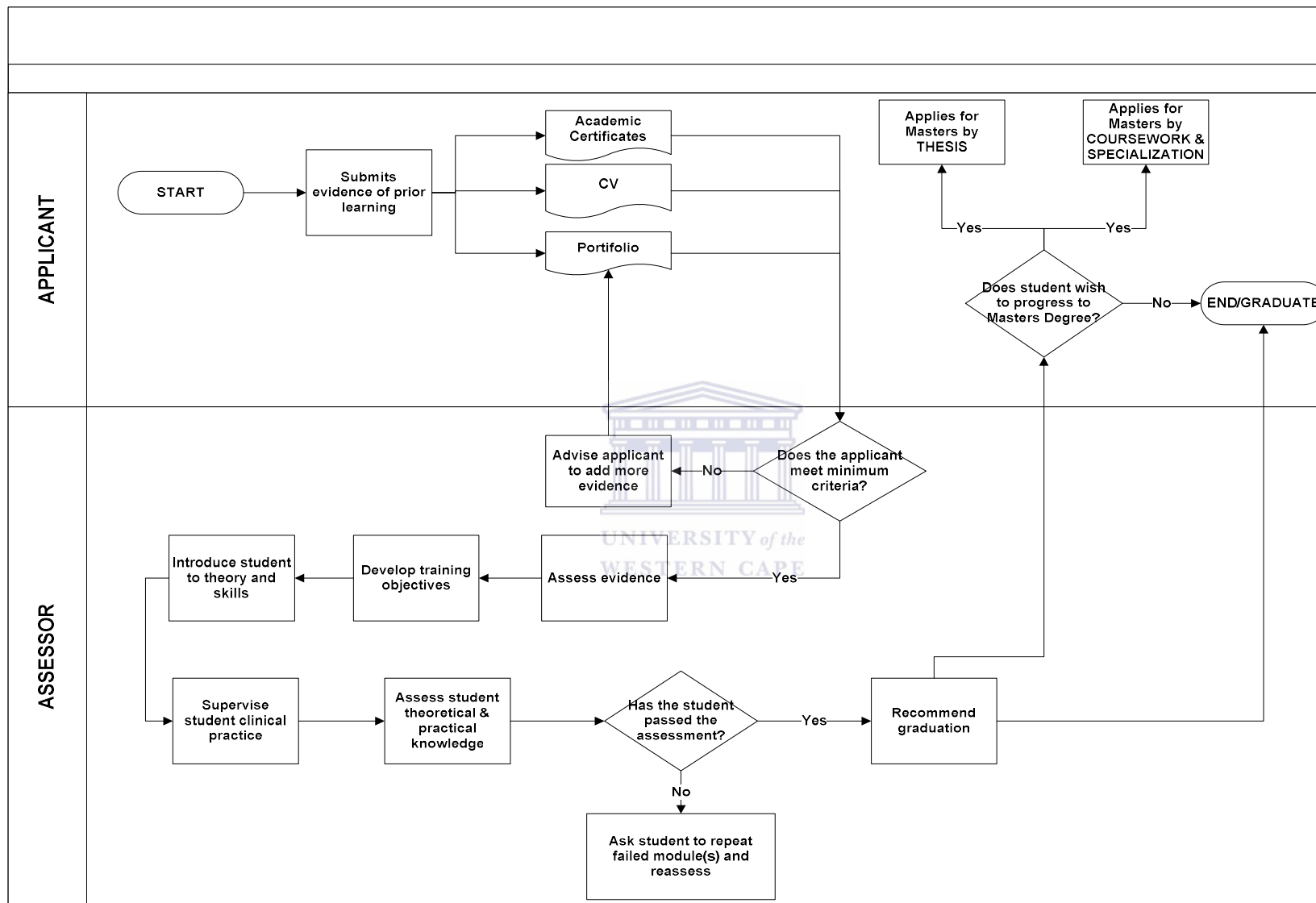


Figure 7.0.1: Proposed Process for Upgrading Diploma-Trained Physiotherapists

In order to effectively address the training needs of DTPs in Africa, the proposed admission and training process emphasises rigorous training needs assessment through careful examination of evidence of prior learning (classroom-based and experiential) to inform programme theory. The proposed process highlights training needs identification processes necessary for upgrading DTPs to BSc (Hons) and proposes a double stream master's degree system to allow for both academic and professional master's degree for PTs intending to pursue postgraduate studies. The proposed model shows the processes for upskilling DTPs to degree level. The admission and training system is described in four (4) main sections, namely; admission criteria for DTPs, assessment of evidence of prior learning and training needs analysis, training and assessment and Master's level training.

### **7.3.1 Admission Criteria**

The process begins with a DTP wishing to upgrade to a degree in Physiotherapy, the assumption is that the candidate would first contact the university to identify eligibility and admission requirements for the BSc (Honours) programme. Most importantly, the process reaffirms the need to recognise the prior learning of DTPs intending to upgrade to first degree as also reported in the current model. The proposed system acknowledges both class-based and experiential learning. In the case of DTPs, intending students would then be required to submit evidence of prior learning such as diploma certificates and portfolio of past and recent clinical experience indicating courses covered in diploma programmes and a detailed description of relevant work experience respectively. Although the proposed system uses recognition of prior learning as the basis of conceptualisation, it goes beyond just recognizing prior learning and experience as it emphasises careful assessment of evidence prior to recognising prior learning. Thus, advocates what Frick, Bitzer and Leibowitz (2007) term assessment and recognition of prior learning, which emphasizes the central role of assessment in the process of recognising prior learning. In this study, the recurring theme identified in interviews with employers and the UWC graduates was the need for careful assessment of the extent to which theoretical and professional modules were covered in the diploma programmes which inevitably led to the call for more theoretical content and clinical practice in the current UWC BSc (Honours) model.

In an attempt to address the need for a more careful assessment process as recommended by key stakeholders in the current study, the researcher recommends a rigorous evaluation of the evidence of prior learning as discussed in the following section. It is assumed that the process would facilitate identification of the knowledge gap between Physiotherapy diploma and degree programmes and thus, leads to the designing of a more responsive educational programme for DTPs.

### **7.3.2 Assessment of Evidence of Prior Learning and Training Needs Analysis**

In light of the findings of the current study which highlighted the need to identify the learning needs of DTPs, this researcher recommends a more careful assessment of prior qualifications, both academic and experiential knowledge. The assumption is that a careful assessment of prior learning would facilitate the necessary identification of the knowledge gap that requires bridging in DTPs. Assessment entails a careful look at prior learning by examining the written portfolios of the candidates and make academic judgements as to what is visible and invisible knowledge. Frick, Bitzer and Leibowitz (2007) posit that assessment forms an integral part of the process whereby prior learning is considered and acknowledged. This position is in tandem with the South African Qualifications Authority (SAQA) assessment and recognition of prior learning policy (2004) which demands stringent assessment. Individual's competencies are assessed according to prescribed outcomes and standards with focus on the future development of specific knowledge and skills (Frick, Bitzer & Leibowitz, 2007). Secondly, standards must be set by establishing criterion against which experiential learning is assessed to determine whether it is adequate for university education purposes (Van Rooy, 2002). Furthermore, assessment would facilitate scaffolding from diploma level knowledge to degree status. In a way, universities have to have some understanding of the candidates' experiential knowledge as experiential knowledge is crafted in context and therefore not as conceptually defined as classroom-based or knowledge that is crafted in academic programmes. In the current model, it appears prior learning is used for credit award but reveal nothing about the nature of this knowledge as BSc (Honours) transcripts do not show the number of credits awarded for prior knowledge and skills.

Thus, the researcher argues that, program designers have to do the hard work of supporting DTPs to translate or rearticulate experiential knowledge to an academic qualification. This could be achieved by framing the BSc (Honours) as a UWC ARPL project. The curriculum for the BSc (Honours) programme would then be designed by looking at the theoretical modules covered in diploma programmes, then setting objectives for upscaling DTPs to degree status.

This study has revealed that the assessment of DTPs prior to admission to the bridging programme was instead based on trust. Arguably, the assumption was that time and tasks (time on the job) was the equivalent of a carefully designed clinical practice module. Often clinical practice modules are designed in consultation with professional bodies and in Physiotherapy, a minimum of 1000 hours of supervised clinical practice has to be completed by Baccalaureate students. Furthermore, the researcher suspects that the assumption that was being made was that clinical practice was given equal opportunity to all DTPs. Conversely, studies of apprenticeship and internship show that the quality of the exposure is very much dependent on the quality of the specialists in the institution. Similarly, the quality of the clinical experience of DTPs intending to upgrade to first degree would be highly dependent on the quality of their supervisors or medical staff in their respective workplaces, thus it would be ideal to have their clinical practice experiences documented and assessed accordingly to ascertain the competency levels of intending students in relevant areas of clinical practice. The clinical practice areas under assessment have to be relevant to the current Physiotherapy practice and in tandem with desired clinical competencies highlighted by the university or professional bodies such as WCPT. The researcher further argues that not all clinical practice experience that would be students may possess is relevant to today's Physiotherapy practice as some candidates may have graduated decades back and thus some of their clinical 'competencies' may be at variance with current Physiotherapy practice.

Therefore, the researcher proposes that the universities should have more coherent and consistent RPL pedagogic practice so that they can continue to offer these services to international students with greater understanding and knowledge.

As proposed earlier, the UWC special BSc (Honours) programme should be considered as an RPL project to ensure the visible (documented) and non-visible (undocumented) knowledge claimed by applicants are subjected to a form of assessment through the UWC RPL process and thus, enabling the university to identify the knowledge gap that requires bridging among DTPs seeking admission to the special BSc (Honours) degree programme.

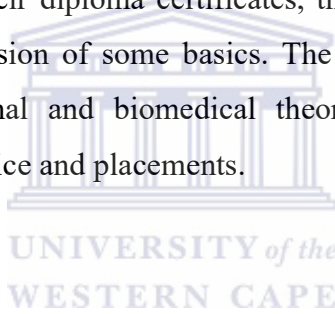
The assessment of modules covered in the diploma programmes would be done by comparing theoretical and professional practice modules which are in a way associated with the conventional definitions of the structures of knowledge as they have been situated in the UWC BSc (Honours) curriculum. This would entail comparing sets of theoretical modules offered in diploma programmes in Kenya, Malawi, Rwanda, Tanzania and Zambia against the four-year degree at UWC. The assessors' goal here would be to find the difference between theoretical modules offered in sending countries and the host institution and then highlighting the gap and because a BSc (Honours) in Physiotherapy is a professional degree, the standards or qualification frameworks set by professional bodies such as WCPT should also be considered.

### **7.3.3 Programmes Implementation and Assessment**

The results of the current study demonstrate that although students had a fulfilling learning experience at UWC, the programme implementation theory lacked exposure to skills labs and clinical settings in form of clinical practice and placements for DTPs converting to BSc (Honours) degree. However, the PDs submitted that clinical placements were not planned for due to the fact that the university was not affiliated to any teaching hospital prior to 1995 but were hopeful that introducing clinical practice would be feasible following South Africa's attainment of democracy in 1994 and the subsequent changes that occurred in the higher education system. As Ralph (2012) argues, educational practices cannot be understood in isolation from developments in the larger political economy and the national qualification framework system.

It therefore follows that introducing clinical practice would be appropriate considering the changes that have taken place in the education sector since 1994.

Another recurring theme in the current study was the absence of core basic sciences in the BSc (Honours) programme model, the PDs as reported earlier, indicated that the ARI report which informed the development of the current BSc (Honours) model did not highlight the need for basic sciences among DTPs but rather community based rehabilitation and research. They however acknowledged the importance of adding basic sciences to the current BSc (Honours) programme model for DTPs. Given these findings, the proposed model emphasises the need for core theoretical content constituting biomedical and professional modules as highlighted by the participants in the current study. The researcher argues that Physiotherapy training has evolved over time since DTPs acquired their diploma certificates, thus it's crucial to bring them up to date with enough theory and revision of some basics. The researcher advocates that students should be exposed to professional and biomedical theoretical modules as well as skills development through clinical practice and placements.



#### **7.3.4 Masters-Level Training**

The need to introduce two streams at Master's level was another recurring theme in the current study. The study demonstrates that the current Master's model emphasises research and orthopedic manual therapy. Although the current model has been useful in developing participants' research skills and thus promoting Physiotherapy research in Africa, most participants, graduates and employers alike, preferred a model that fosters development of advanced Physiotherapy clinical skills in various areas of Physiotherapy practice. The proposed system therefore responds to the call for more advanced clinical skills and possible allowance for specialisation. It is evident as demonstrated in the findings of the current study that not all postgraduates in Physiotherapy work in academic institutions like universities, others head departments in hospitals. Thus, universities have to find a balance between academic and professional Master's degrees as the former emphasises research, while the latter prepares participants for more advanced practice and specialisation.



Most participants argued that introducing professional Master's degrees would empower participants with the necessary practical skills required for clinical practice at the level of specialist and the ability to mentor undergraduate students more effectively. While the researcher recognizes the fact that South Africa does not have a policy that allows for specialisation at Master's level in Physiotherapy, the researcher advocates the introduction of a robust master by coursework alongside the current masters by thesis model.

#### **7.4 RECOMMENDATIONS**

This study has demonstrated that DTPs from Kenya, Rwanda, Tanzania and Zambia have been seeking higher education opportunities in South Africa since 1996 when the first foreign diploma-trained student was admitted. The rationale behind the movement of DTPs from their respective countries to South Africa was to upgrade their credentials from diploma to first and second degrees respectively. The researcher set out to investigate the outcomes and impact of the said programmes and the findings of the study as reported in Chapters Four, Five and Six, compel the researcher to make the following recommendations:

##### **Recommendation 1:**

That the universities upgrading DTPs to degree status conduct periodic needs analyses to ascertain the training needs of DTPs intending to upgrade to degree status.

##### **Recommendation 2:**

That there is a careful assessment of academic and professional qualifications submitted by DTPs intending to upgrade to first degree status so as to ensure training needs of DTPs are identified and thus used as baseline information to inform development of modules and curricula.

**Recommendation 3:**

That the DTPs intending to upgrade to first degree status are assisted to document their prior clinical experiences and that assessors make appropriate academic judgement regarding the relevance and currency of experiences prior to awarding credit or allowing access to degree programmes. That the credits awarded for participants prior work experience is indicated on participants' BSc (Honours) transcript to help future employers ascertain number of credits awarded for prior experience.

**Recommendation 4:**

That there is exposure of students with prior learning to theoretical and professional knowledge as well as practical skills through lectures, tutorials and skill demonstration in the classroom and skills labs.

**Recommendation 5:**

That there is exposure and supervision of students with prior knowledge in the clinical area through clinical practice and placements to ensure graduates possess the necessary attributes (generic and specific) expected of a Physiotherapy graduate and prepare students for future employment or promotion as BSc (Honours) graduates.

**Recommendation 6:**

That a robust Master's by coursework and mini-thesis programme is developed to allow BSc (Honours) graduates wishing to pursue a master's by coursework to develop advanced skill sets for clinical practice at the level of specialist.

**Recommendation 7:**

That a 'special' education committee representative of African countries still training Physiotherapists at diploma-level be constituted by WCPT-A to discuss the future of diploma programmes in Physiotherapy in Africa and the possibility of gradually phasing out the said programme, especially as Physiotherapy education reforms across the globe. Further, we

recommend that WCPT-A crafts a carefully worded and clearly understood vision for Physiotherapy education and practice in Africa.

### **Recommendation 8:**

That the UWC special BSc (Honours) programme be considered an RPL project to ensure the visible (documented) and non-visible (undocumented) knowledge claimed by applicants are subjected to a form of assessment through the UWC RPL process and thus, enabling the university to identify the knowledge gap that requires bridging among DTPs seeking admission to the special BSc (Honours) degree programme.

## **7.5 CONCLUSIONS**

This thesis focused on evaluation of the outcomes and impact of postgraduate BSc (Honours) and Master's programmes in Physiotherapy for DTPs in SADC and East Africa. The focus was on understanding the programme and implementation theories using a theory-based evaluation approach by investigating the processes followed by a South African University in upgrading DTPs from diploma to BSc (Honours) and Master's degrees respectively.

The evaluation of educational conversion programmes will enable PDs to understand the outcomes and impact of the programmes. Secondly, evaluations would help identify training needs of DTPs and ultimately necessitate curriculum reviews in order that the programmes live to the expectation of bridging the knowledge gaps identified in DTPs and ultimately benefit the communities they serve.

The involvement of key stakeholders such as PDs, lecturers as curriculum implementers, graduates and employers can provide a wealth of information necessary to inform development and implementation of educational conversion programmes. The valuable information gathered from stakeholders such as desired theoretical and practical modules to be included in the curriculum will enrich existing conversion programmes and increase student and employer satisfaction. Stakeholder involvement will facilitate the production of a cadre that will be relevant both home and abroad. Finally, the use of an explorative and descriptive theory driven

approach will help identify loose links in the programme development and implementation process thereby providing the necessary baseline information for programme improvement.



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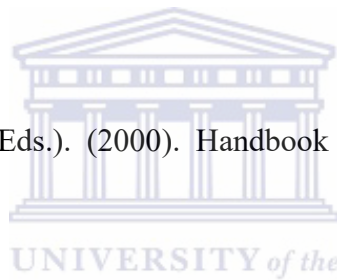


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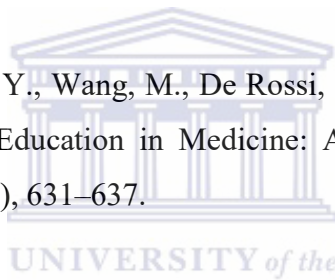
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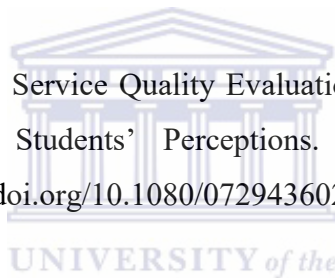
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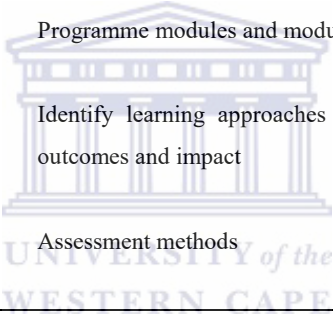
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## Appendices

### Appendix C:

#### Document Analysis checklist

<b>Documents to be selected</b>	<b>Data to be analyzed</b>
<p><b>Program records</b> African Rehabilitation Institute (ARI) Syllabus for Physiotherapy training in Africa, 1993</p>	<ul style="list-style-type: none"> <li>• Programme context: History, goals and objective</li> <li>• Training needs</li> <li>• Target groups</li> <li>• Entry qualifications</li> <li>• Recommended syllabus</li> <li>• Duration of programmes</li> </ul>
<p>UWC BSc (Honors) and Masters program module descriptors</p>	 <ul style="list-style-type: none"> <li>• Programme modules and module objectives</li> <li>• Identify learning approaches and mechanisms to ensure the achievement of outcomes and impact</li> <li>• Assessment methods</li> </ul>
<p><b>University graduates' records</b> CHS Annual reports</p>	<ul style="list-style-type: none"> <li>• Number of graduates per intake</li> </ul>

## **Appendix D**

### **Key Informants Interview guide**

- How would you describe the UWC honors/masters program for diploma holders?
- What needs resulted into the project? How were these needs identified?
- How did you hope to address the identified needs?
- What was the goal and objectives set out to address the needs?
- What was the environment like at that time?
- What inputs were planned for in terms of resources to ensure smooth running of the program?
- How was the curriculum developed? Was there a model curriculum used as a guide?
- How was the choice of modules arrived at? What informed the choice of modules/content of the curriculum?
- Do you think the curriculum was representative of the needs of the African continent?



## **Appendix E**

### **UWC alumni In-depth Interview guide**

Introduction:

#### **Demographics;**

Name:

Age:

Gender:

Nationality:

Occupation:

Year of graduation:

- Tertiary education background and work experience before commencement of honors and Masters' Program at UWC?
- Please tell me about your general education experiences at UWC?
- Registration process
- Environment at UWC
- Modules available at that time
  - How was the implementation of modules, where they delivered to your expectation?
  - Where the objectives realized?
  - What were the strengths and gaps of the teaching methods used? Teaching and learning experiences
  - Availability of facilities to aid smooth course implementation

How has your participation in the masters' program affected your clinical practice/knowledge/performance at work and the community you live in?

In what ways, if any has the program affected your career/professional development?

Is there anything else?

## **Appendix G**

### **Information sheet**

***Project Title:*** *Impact of a postgraduate physiotherapy master's programme on research and clinical practice in Africa*

*What is this study about?*

*This is a research project being conducted by Richard KUNDA and being supervised by Prof. Jose Frantz at the University of the Western Cape. The masters program under evaluation is the structured one, meant for Physiotherapists with diplomas. We are inviting you to participate in this research project because you were among the developers of the UWC Physiotherapy structured masters program, hence you have a wealth of knowledge on the context and inputs of the programme. The purpose of this research project is to explore and describe the context, inputs, outcomes and impact of the UWC postgraduate master's programme on research and clinical practice in Africa so as to identify positive aspects of the programme, as well as areas for further action and development by the programme management and individual teaching staff.*

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

*A face to face or telephone interview will be arranged by the researcher. A written consent for the interview will also be needed. The researcher will take some notes during the interviews. You will be asked an open-ended question such as; what needs resulted into the development of the structured masters program? What were the goals of the program? This will be followed by probing questions. The interview will not last longer than 45 minutes*

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

*We will do our best to keep your personal information confidential. To help protect your confidentiality, pseudonyms (false names) will be used instead of your real names and you will not be required to provide the name of your place of work or any other confidential detail. Secondly, all audio-taped interviews and transcripts of the interviews will be protected by the principal researcher using password-protected computer files and locked cabinet that cannot be accessed by others except for the research supervisor and an independent coder. The data will be kept for five years after the results of the project have been published before it will be*

*destroyed. Furthermore, no information provided by you will be made public without your consent. When we write a report or article about this research project, your identity will be protected to the maximum extent possible. The survey will be anonymous and you will not be required to provide your personal identity. Your name will not be included on the surveys and other collected data; instead, a code will be placed on the surveys and other collected data; through the use of identification key, the researcher will be able to link your survey to your identity. Please be assured that only the researcher will have access to the identification key.*

*What are the benefits of this research?*

*The findings of this research project may not directly benefit you but your feedback will be useful in providing information regarding the masters program context, goals and objectives. We also hope that, in the future, other people might benefit from this study through advancing knowledge about the effectiveness of physiotherapy education in Africa.*

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

*Your participation in this research is completely 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.*

*Is any assistance available if I am negatively affected by participating in this study?*

*[Explain what assistance you will provide for participants who are negatively affected, eg counselling, referral for care, etc.]*

*What if I have questions?*

*This research is being conducted by Richard Kunda at the University of the Western Cape. If you have any questions about the research study itself, please contact Richard Kunda on phone number; +27798122403 or email; [princer1@gmail.com](mailto:princer1@gmail.com)*

*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:*

*Prof. Jose Frantz  
Dean of Community and Health Science  
Faculty of Community and Health Sciences  
University of the Western Cape  
Private Bag X17, Belville 7535  
Email: [jfrantz@uwc.ac.za](mailto:jfrantz@uwc.ac.za)*

*This research has been approved by the University of the Western Cape's Senate Research Committee and Ethics Committee.*





**Appendix H**

**Consent form**

**Title of Research Project:** The impact of a postgraduate physiotherapy master’s programme on research and clinical practice in Africa

The study has been described to me in a language that I understand and I freely and voluntarily agree to participate. My questions about the study have been answered. I understand that my identity will not be disclosed and that I may withdraw from the study without giving a reason at any time and this will not negatively affect me in any way.

**Participant’s name**.....

**Participant’s signature**.....

**Witness**.....

**Date**.....

Should you have any questions regarding this study or wish to report any problems you have experienced related to the study, please contact the study coordinator:

The principal investigator

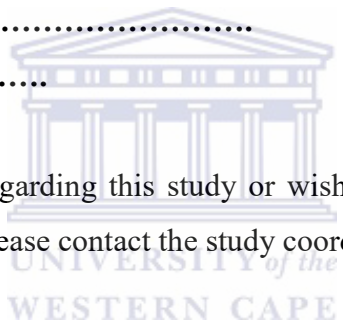
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## **Appendix I**

### **Interview guide for work-place supervisors**

Gender:

Nationality:

Designation:

Nature of business: Higher education or Clinical care

- What is the vision of your institution?
- What competencies do you look for in Postgraduates?
- In what ways are the UWC Physiotherapy Postgraduates contributing to the realisation of your vision?
- What is your comment on the quality of UWC Postgraduates?
- What value are the Postgraduates adding to your organization?

