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Performance development of sport scientists:

A Mindfulness-Acceptance-Commitment (MAC) approach

by

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DECLARATION

I, Rozanne Maré, declare that this dissertation is my original work except where I used or quoted another source, which has been acknowledged. I further declare that the work I am submitting has never been submitted before for another degree to any other university or tertiary institution for examination.

Signature: _____

Date: _____

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"I can do all things through Christ who strengthens me"

(Philippians 4:13)

I want to thank Jesus Christ for giving me the strength to complete this research study. I want to thank Prof. Lourens Human for the time and effort he put into this study, going over and beyond his obligation as a study leader. Without him this research study would not have been successful.

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ABSTRACT

This research study took place at the High Performance Centre (hpc) at the University of Pretoria (UP) in South Africa (SA). The sport psychologists/sports counselors at the hpc mainly deliver performance development services to the athletes. The sport psychology services at the hpc are conducted to the athletes via the Psychological Skills Training (PST) approach and Mindfulness-Acceptance-Commitment (MAC) approach. These two approaches are individualistic in nature and the aim of my study was to move away from a more traditional individualistic perspective to an ecological perspective that takes into consideration other role players such as sport scientists. This was achieved by developing a sport science specific MAC programme for the sport scientists, which was facilitated through experiential learning. The goal of the MAC programme was to explore the sport scientists' experiences with reference to what they discovered and how they applied their learning. Eight in depth, semi-structured interviews were conducted with four sport scientists at the hpc after their participation in the programme. Interpretive Phenomenological Analysis (IPA) was used to analyse the semi-structured interviews. The findings were mainly related to difficulties and advantages that the sport scientists experienced when they applied the MAC principles.

Key words: Psychological Skills Training (PST), Mindfulness-Acceptance-Commitment (MAC), Sport Scientists, High Performance Centre (hpc), Interpretive Phenomenological Analysis (IPA), Ecological Perspective.

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ABBREVIATIONS

Abbreviation	Chapter	Description
ACT	Chapter 1	Acceptance and Commitment Therapy
AIS	Chapter 1	Academic Information Services
BT	Chapter 3	Behaviour Therapy
CBT	Chapter 1	Cognitive Behavioural Therapy
CEO	Chapter 5	Chief Executive Officer
CT	Chapter 3	Cognitive Therapy
DBT	Chapter 4	Dialectic Behaviour Therapy
EL	Chapter 5	Experiential Learning
HP	Chapter 1	High Performance
hpc	Chapter 1	High Performance Centre
HPCSA	Chapter 1	Health Professions Council of South Africa
IPA	Chapter 5	Interpretive Phenomenological Analysis
ISR	Chapter 1	Institute of Sport Research
MA	Chapter 5	Master of Arts
MAC	Chapter 1	Mindfulness-Acceptance-Commitment
MBCT	Chapter 4	Mindfulness-Based Cognitive Therapy
MBSR	Chapter 4	Mindfulness-based Stress Reduction
MCS-SP	Chapter 1	Multi-level Classification System for Sport Psychology
MSPE	Chapter 4	Mindful Sport Performance Enhancement
PD	Chapter 1	Performance Development
Pdy	Chapter 1	Performance Dysfunction
PhD	Chapter 5	Doctor of Philosophy degree
PI	Chapter 1	Performance Impairment
PPCT	Chapter 2	Process, Person, Context and Time
PST	Chapter 1	Psychological Skills Training
PT	Chapter 1	Performance Termination
RFT	Chapter 4	Relational Frame Theory
SA	Chapter 1	South Africa
SS1	Chapter 1	Sport Scientist One
SS2	Chapter 7	Sport Scientist Two
SS3	Chapter 8	Sport Scientist Three
SS4	Chapter 1	Sport Scientist Four
SSMU	Chapter 1	Sports Science and Medical Unit
UP	Chapter 1	University of Pretoria
USA	Chapter 4	United States of America

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CHAPTER 1
BACKGROUND

Introduction

The purpose of this chapter is to provide an overview of the study by means of a brief outline of the research context, questions, goals and motivation. The context of this study involves the University of Pretoria (UP), TuksSport High School, TuksSport Academies and the High Performance Centre (hpc) [1], sport psychology services at the hpc and the sport psychology dilemma at the hpc. The research questions and goals are addressed according to primary and secondary research questions and goals. The motivation of this study is addressed according to organizational and research motivation. The chapter ends by giving an outline of the structure of the research.

1.1 CONTEXT

1.1.1 University of Pretoria (UP)

The University of Pretoria (UP) was established in 1908 and is one of the leading research universities in South Africa (SA), and one of the largest in the country. The University has seven campuses, while central administration is situated at the Hatfield Campus in Pretoria. The University operates on other sites, as well such as Steve Biko Academic Hospital and the High Performance Centre (hpc). The current research study was conducted at the hpc. UP offers their academic programmes mainly in Afrikaans and English. There are over 1 800 academic programmes on offer in nine faculties, as well as a business school. UP host more than 50 000 students and is one of the leading higher education institutions in the country. The vision of UP is to be an outstanding University that is focused on research. The UP wants to be recognized for having an impact and developing people, as well as making a difference nationally and internationally (University of Pretoria [UP], 2015b).

1.1.2 TuksSport High School

TuksSport Combined School was established in 2002 with a mere 27 learners. The sports campus of the University is home to TuksSport High School. There are currently 200 learners in TuksSport High

[1] The official abbreviation for the High Performance Centre is the “hpc” and not the “HPC.”

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School, ranging from Grade 8-12. TuksSport High School offers quality education to local and international high performance athletes and follows a flexible structure. The structure allows athletes to train at high volumes, but still creates a platform for academic development. The following sporting academies are catered for at the TuksSport High School: golf, gymnastics, swimming, cricket, tennis, triathlon, football, judo and athletics (University of Pretoria [UP], 2012).

1.1.3 TuksSport Academies

TuksSport accommodates several types of sport including more than 30 sport clubs and 10 sport academies. The main focus of TuksSport is on the more traditional sporting codes, namely athletics, cricket, football, golf, hockey, netball, rugby, squash, swimming and tennis. The less traditional sporting codes are offered on a secondary level, namely aikido, archery, badminton, basketball, canoeing, cheerleading, chess, cycling, dance, exploration, fencing, gymnastics, judo, karate, lifesaving and many more (University of Pretoria [UP], 2015b).

1.1.4 High Performance Centre (hpc)

The context of my research project is the hpc at the UP. The hpc was established in May 2002 and is situated at the LC de Villiers Sports Grounds of the UP (University of Pretoria [UP], 2015b). The hpc offers hospitality services, a Sports Science and Medical Unit (SSMU), as well as the TuksSport High School (see 1.1.2).

The hospitality services include three star accommodation for teams and individual athletes. There is also a restaurant that caters for breakfast, lunch and dinner to guests. The hospitality division also focuses on conferences and banqueting. Transportation also forms part of the hospitality division (University of Pretoria [UP], 2015b).

The professionals involved in the SSMU operate as a team and a multi-disciplinary approach is followed when athletes receive any treatment or rehabilitation. The professionals that form part of the SSMU are medical doctors, dieticians, physiotherapists, sport psychologists[2], biokineticists, sport scientists, strength and conditioning coaches and biomechanics professionals. The hpc also offers a

[2] The term sport psychologist is not an official Health Professions Council of South Africa (HPCSA) registration category. The term sport psychologist in the South-African context refers to a registered psychologist working in the sport context.

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sports science gym where biokineticists and strength and conditioning specialists can train athletes. The Institute for Sport Research (ISR), High Performance (HP) Division, is located at the hpc. The sport scientists and biokineticists that form part of the SSMU are part of the ISR. The ISR offers their services to students from the UP, the general public, national federations, elite athletes and TuksSport High School students (University of Pretoria [UP], 2015b). My research will focus on the sport scientists from the ISR that form part of the hpc SSMU.

1.1.5 Sport Psychology Services at the High Performance Centre (hpc)

The sport psychology services at the hpc are delivered to the athletes by means of the Multi-level Classification System for Sport Psychology (MCS-SP) that was developed by Gardner and Moore (2006). The MCS-SP is a model that differentiates athlete dilemmas into functional categories that indicate areas that need to be assessed for a comprehensive understanding of the athlete (Gardner & Moore, 2004b, 2006).

The model assists practitioners to conceptualize cases and to develop appropriate assessment and intervention strategies that are required. Categories within the taxonomy include Performance Termination (PT), Performance Impairment (PI) Performance Dysfunction (PDy) and Performance Development (PD) (Gardner & Moore, 2004b, 2006). Each of these categories has two sub-categories which I shall discuss below.

1.1.5.1 Performance Termination (PT)

1. Description: PT encompasses career termination either due to serious injury or to voluntary or involuntary career completion (Gardner & Moore, 2004b, 2006).

2. Categories: PT has two sub-categories, namely Performance Termination 1 (PT-1) and Performance Termination 2 (PT-2) (Gardner & Moore, 2004b, 2006).

   PT-1 refers to the expected termination of an athlete's career, or voluntary termination from the sport (e.g., planned retirement) (Gardner & Moore, 2004b, 2006). PT-2 refers to the unexpected

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termination of an athlete's career or involuntary termination from the sport) (e.g., serious injury) (Gardner & Moore, 2004b, 2006).

3. Intervention: The intervention required on the PT-level is a sports counselling intervention (Gardner & Moore, 2004b, 2006).

1.1.5.2 Performance Impairment (PI)

1. Description: This category includes the presence of clinical issues and emotional distress which will impair no less than one major domain of life such as family, social-interpersonal, recreational and educational (Gardner & Moore, 2004b, 2006).

2. Categories: The two subtypes in this category are Performance Impairment 1 (PI-1) and Performance Impairment 2 (PI-2) (Gardner & Moore, 2004b, 2006).

PI-1 refers to cases where clinical disorders impair the functioning and performance of the athletes (Gardner & Moore, 2004b, 2006). PI-2 refers to cases where behavioural dysregulation impair a major life domain (Gardner & Moore, 2004b, 2006).

3. Intervention: The intervention required on the PI-level is a sports counselling intervention (Gardner & Moore, 2004b, 2006).

1.1.5.3 Performance Dysfunction (PDy)

2. Description: The issues and intervention related to PDy are psychological barriers such as developmental, transitional, intrapersonal and interpersonal concerns (Gardner & Moore, 2004b, 2006).

3. Categories: The two subtypes in this category are Performance Dysfunction 1 (PDy-1) and Performance Dysfunction 2 (PDy-2) (Gardner & Moore, 2004b, 2006).

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PDy-1 refers to cases where external factors trigger psychological reactions (Gardner & Moore, 2004b, 2006). PDy-2 refers to cases where internal factors trigger psychological reactions (Gardner & Moore, 2004b, 2006).

4. Intervention: PDy's primary or secondary goal of intervention is concerned with the desire to improve athletic performance, and this intervention is a sports counselling intervention (Gardner & Moore, 2004b, 2006).

1.1.5.4 Performance Development (PD)

2. Description: The issues and intervention related to PD are most frequently thought of as relating to performance development in sport. These interventions focus on the promotion of the athletes' self-regulation. There is an absence of significant developmental, transitional, behavioural, interpersonal or intrapersonal psychological factors affecting performance (Gardner & Moore, 2004b, 2006).

3. Categories: The two subtypes in this category are Performance Development 1 (PD-1) and Performance Development 2 (PD-2) (Gardner & Moore, 2004b, 2006).

PD-1 refers to cases where self-regulatory skills are essential in the on-going development of physical skills (Gardner & Moore, 2004b, 2006). PD-2 refers to cases where physical skills have already been developed and self-regulatory skills are essential to attain optimal performance (Gardner & Moore, 2004b, 2006).

4. Intervention: The PD requires sport psychology interventions which are carried out by a professional psychologist (Gardner & Moore, 2004b, 2006).

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1.1.6 Sport Psychology Dilemma at the High Performance Centre (hpc)

Currently at the hpc the main role of the sport psychologists/sports counsellors is to deliver performance development services to the athletes. The sport psychology services at the hpc are conducted to the athletes via the Psychological Skills Training (PST) approach and Mindfulness-Acceptance-Commitment (MAC) approach (see Chapter 3 and 4). Both these approaches are individualistic in nature (see Chapter 2) (Gardner & Moore, 2004a, 2006, 2007; Jarvis, 2006).

There are many role players in the sport community, e.g. coaches, parents and the multi-disciplinary team which includes dieticians, doctors, sport scientists, physiotherapists, biokineticists and biomechanical analysts. These roll players are often neglected when it comes to delivering sport psychology services in order to develop the athletes work performance, as the focus is mostly on the athletes performance development as addressed above.

Sport scientists emphasised that they are in constant need of work performance development, as they have to acquire different roles which are necessary to excel in their jobs. They however stressed a lack of opportunities (York, Gastin, & Dawson, 2014).

In order to address this dilemma, I have decided to include sport scientists in this study as a means to focus on their work performance. The focus will be on the sport scientists in order for them to become acquainted with the sport psychology services, in particularly the MAC approach, so that they can use the principles within their own work domain. I developed a sport specific MAC programme as a means to educate sport scientists regarding performance development so that they can use it within their own work performance.

1.2 QUESTIONS

This study's focus is on creating a performance development experience for sport scientists through their participation in a MAC programme through a process of experiential learning. The study therefore focuses on two primary research questions, and each primary question is divided into three secondary questions. The questions are as follows:

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1.2.1 Primary Research Question 1

What did the sport scientists at the hpc experientially **discover** from their own performance development experience through their participation in the MAC programme? This question was divided into three secondary questions:

1. What did the sport scientists at the hpc experientially **discover** about **mindfulness** through their participation in the MAC programme?

2. What did the sport scientists at the hpc experientially **discover** about **acceptance** through their participation in the MAC programme?

3. What did the sport scientists at the hpc experientially **discover** about **commitment** through their participation in the MAC programme?

1.2.2 Primary Research Question 2

How did the sport scientists at the hpc **apply** their experiential knowledge to their work as sport scientists? This question was divided into three secondary questions:

1. How did the sport scientists at the hpc **apply** their experiential knowledge about **mindfulness** to their work as sport scientists?

2. How did the sport scientists at the hpc **apply** their experiential knowledge about **acceptance** to their work as sport scientists?

3. How did the sport scientists at the hpc **apply** their experiential knowledge about **commitment** to their work as sport scientists?

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1.3 GOALS

1.3.1 Primary Goals

The primary goal of this research project is: To develop and present a MAC programme to sport scientists at the hpc through a process of experiential learning, with the purpose of understanding (1) what the sport scientist experientially discovered about mindfulness, acceptance and commitment, and (2) how they applied mindfulness, acceptance and commitment to their work as sport scientists.

1.3.2 Secondary Goals

In order to achieve the aforementioned primary goals, the following secondary goals have been followed:

1. To situate this research project within an ecological framework, as it focuses on sport scientists as participants and not athletes (see Chapter 2).

2. To conduct an overview on the PST and MAC programmes in sport, as well as the research done on PST and MAC programmes in sport (see Chapter 3 & Chapter 4).

3. To develop and present a MAC programme to sport scientists working at the hpc.

4. To describe the research inquiry of this research project, with specific reference to the research context, selection criteria of participants, research design and methodological process that was followed, research quality and the research ethics (see Chapter 5).

5. To report the research findings of the sport scientists' experiences of the MAC programme (see Chapters 6 – 9).

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1.4 MOTIVATION

1.4.1 Organizational Motivation

The focus of the sport psychologists/counsellors at the hpc is to deliver performance development services to the athletes. However, the focus in this research will change from that of the athlete to the work performance of sport scientists. This can be contributed to a lack of research focusing on the sport scientist or other role players in the sport community.

Within the sport domain, work performance development focuses mainly on athletes and coaches, thus there is limited focus on other professionals within the sport domain such as sport scientists. There seems to be a shortcoming when it comes to work performance development opportunities for sport scientists. Literature also suggests that it is important for sport scientists to learn different roles so that they can develop the necessary skills to excel in their work and to contribute to sport development (York et al., 2014).

This gap of work performance development within the sport scientist's workplace, as well as the need for sport scientists to fit into different job roles serves as an organizational motivation for conducting this research study.

1.4.2 Research Motivation

The research motivation behind the study was to create a platform for sport scientists to become acquainted with the MAC approach as a means for work performance (see Chapter 4). Within the research of the MAC approach, it became apparent firstly, that athletes were the principal research participants in MAC programmes. Athletes that were included in these studies were from various sporting codes such as basketball, golf, baseball, soccer, hockey, track and field, water sport, martial arts, archery and dragon boating, thus excluding other role players such as sport scientists that form part of the sport community (Bernier, Thienot, Codron, & Fournier, 2009; De Petrillo, Kaufman, Glass, & Arnkoff, 2009; Gooding & Gardner, 2009; Hasker, 2010; Kaufman, Glass, & Arnkoff, 2009; Kee & Wang, 2008; Schwanhausser, 2009; Thompson, Kaufman, De Petrillo, Glass, & Arnkoff, 2011; Wolanin & Schwanhausser, 2010). This is also indicative of an individualistic perspective as sport scientists are not included in the MAC studies (see Chapter 2). Excluding role players in the sport community in the

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MAC studies, specifically sport scientists, serves as research motivation for conducting this research study where the primary focus will be on sport scientists.

Secondly, the lack of qualitative research on MAC was also a motivating factor, as previous research in the field of sport psychology has mainly been done using a quantitative methodology, thus leaving out qualitative methodology. The last factor led to the fact that limited MAC research has previously been done in SA. My study falls within the context of S.A. (see Chapter 4).

1.5 STRUCTURE

The structure of this study is:

Chapter 1 describes the background of the present study with specific reference to the research context, research questions and goals, and lastly the motivation for conducting this study

Chapter 2 describes the conceptual framework of this study. This chapter elaborates on the context, the origin and the theory of the ecological framework in sport. This chapter focuses on how the sport scientists are included in the sport community with regards to psychological service delivery as a means for work enhancement of sport scientists.

Chapter 3 describes one of the sport psychology programmes namely the PST approach. The chapter looks into the origin, theory, and therapy practices of Cognitive Behavioural Therapy (CBT), as well as the origin, theory, psychological practices, previous PST research and critique of PST. Research has mainly been done on PST and athletes (e.g. netball players, rugby players, hockey players, track athletes, dancers, cricket players and swimmers), but from my literature search through the Academic Information Services (AIS) of the UP, it appears that no research has been done on PST programme-based approaches with sport scientists. For the purpose of my study, I will use sport scientists as participants.

Chapter 4 describes the other sport psychology programme, namely the MAC approach. This chapter looks into the origin, theory, and practices of Mindfulness and Acceptance-Commitment Therapy (ACT), as well as the origin, theory, psychological practices, while critically reviewing previous research pertaining to the MAC approach to performance development in sport psychology. This chapter

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highlights the fact that participants in the MAC approach are mainly athletes who focus on their sport development. My study will focus on the work performance of sport scientists.

Chapter 5 describes the research inquiry of the present study. The chapter looks into the research context, the participants, the research design used in the study, what measures were taken to increase the quality of the study, as well as the ethical considerations pertaining to this study.

Chapters 6 to 9 present the findings of the research with regards to sport scientists one (SS1) to four (SS4), and more specific their experiences of the MAC programme. The findings of the chapters are divided into two broad categories, namely: discovering and application. These two categories are then further divided into mindfulness, acceptance and commitment.

Chapter 10 serves as a final discussion of the findings with the aim of addressing the two research questions. This is done in relation to the relevant literature. Limitations pertaining to this study and recommendations for further studies are explored.

Conclusion

After the presentation of this chapter, the reader should have a comprehensible understanding regarding the context of this study, as well as an outline of the significant background to this study. The reader should also have an indication of the research questions, goals and motivation for doing the research. Lastly, the structure for the different chapters was outlined.

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CHAPTER 2
ECOLOGICAL FRAMEWORK

Introduction

Based on the problem at the hpc that I described in Chapter 1, I shall use this chapter to present an overview of ecological approaches that can be employed in the sport context. I shall specifically focus on Bronfenbrenner's bio-ecological model that is concerned with the relationship that occurs between the process, person, context and time (PPCT) (Bronfenbrenner, 2005). Although I shall be portraying the entire bio-ecological model of Bronfenbrenner, it is only the aspect of "context" that is relevant to this study, as this will allow me to demonstrate how sport psychology services at the hpc can move from an individualistic approach to an ecological endeavour.

Firstly, this chapter will look into the position of sport psychology as a traditionally individualistic perspective (Hammond & Bateman, 2009). Secondly, the ecological framework will be discussed with specific reference to the origin of the ecological framework and the theory of the ecological framework. The theory of the ecological framework will include Bronfenbrenner's bio-ecological model that is concerned with the relationship that occurs between the PPCT (Bronfenbrenner, 2005). Lastly, the role of the ecological framework within sport psychology will be discussed.

2.1 SPORT PSYCHOLOGY

Over the past thirty years sport psychology services have mainly been applied to athletes via sport psychologists/sport counsellors. This perspective is labelled as an individualistic perspective and is the dominant conceptual framework in sport psychology (Gardner & Moore, 2004a, 2006, 2007; Jarvis, 2006). The position of the current sport psychology service delivery is illustrated in Figure 2.1 below.

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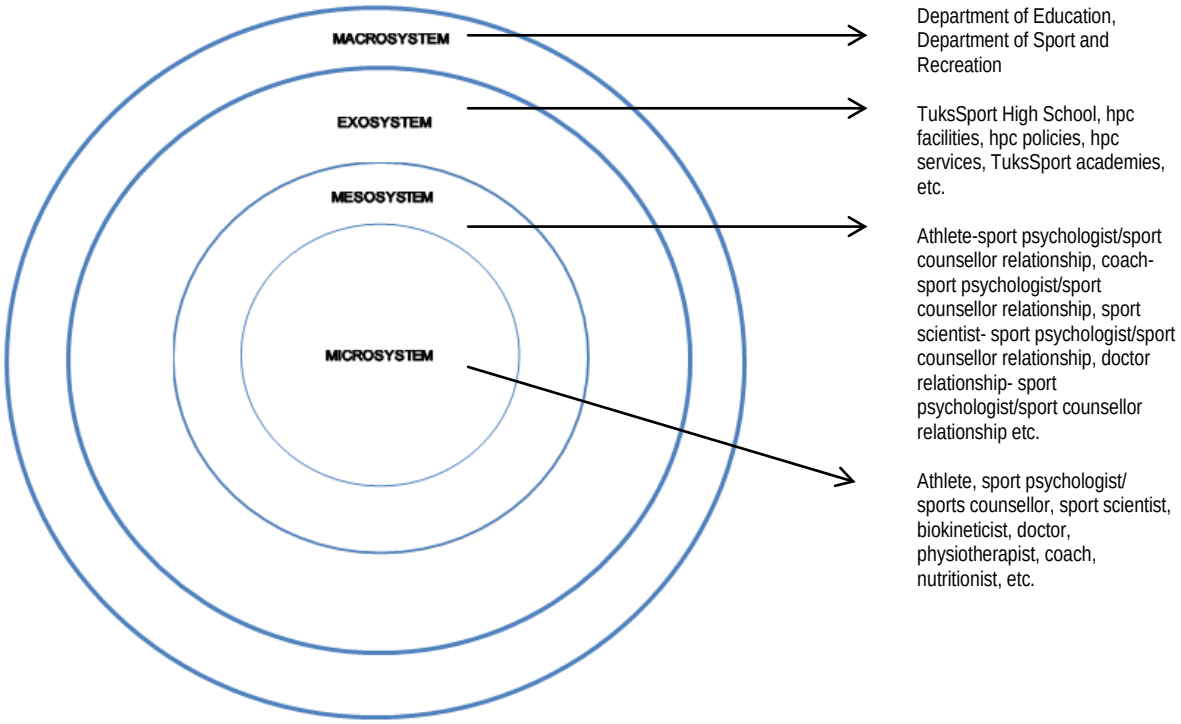

Figure 2.1 The four systems of the context (adapted from Krebs, 2009a).

Figure 2.1, conceptualized within the work of Bronfenbrenner (2005), illustrates that the primary resource of delivering sport psychology services is through sport psychologists/sport counsellors to athletes, thereby not including other role players (e.g. coaches, parents and the multi-disciplinary team which includes dieticians, doctors, sport scientists, physiotherapists, biokineticists and biomechanical analysts) in the sport community. The individualistic perspective holds the position that individual athletes are responsible for their performance development by obtaining an ideal performance state through their work with sport psychologists/sport counsellors (Hammond & Bateman, 2009).

2.2 ECOLOGICAL FRAMEWORK

The ecological perspective stands in contrast to the individualistic perspective. The ecological perspective aims to focus on the environment of the person and factors that play a role outside of the person, thus moving away from only focussing on the intrapersonal world of the person, thereby neglecting the interpersonal world and environment (Hammond & Bateman, 2009).

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2.2.1 Origin of the Ecological Framework

The term “ecology” originated in biology and was coined by E. Haeckel in 1866 (Tudge, Gray, & Hogan, 1997). Ecology is concerned with the interaction of an organism and its environment, which can be seen as inseparable unities (Tudge et al., 1997). From this notion came an interest in the interaction between a person and his/her environment, and so the ecological model came to light in the late nineteenth century through the work of C. Darwin. Darwin focused on how species adapt to environmental changes in order to survive (Tudge et al., 1997; Visser, 2007). Ecological models have been used in several disciplines such as geography, sociology, economics, anthropology and psychology. Within the field of psychology the ecological model has shown to be prominent in developmental and community psychology. The focus of the ecological model in developmental and community psychology is on the interaction that occurs between the person and his/her environment, as it is assumed that the outcome of behaviours can be assigned to the interaction that occurs between the person and the environment that he/she is subjected to (Sallis, Owen, & Fisher, 2008; Tudge et al., 1997; Visser, 2007).

The work of four main theorists in ecological psychology, namely R. Barker, E. Brunswik, J. Gibson and U. Bronfenbrenner made its mark about two decades ago in sport psychology (Araújo, 2009). The focus of the ecological model in sport psychology is on the relationship of the athlete to his/her environment or simply the environment (Araújo & Davids, 2009; Hammond & Bateman, 2009). A concise description of the position of each of the four main theorists will follow.

Brunswik’s ecological approach was based on the idea of the lens model. The lens model created a way of reflecting on the relationship that occurs between the environment and the behaviour of the person in the environment (Brunswik, 1952, 1956). A prominent notion that occurred from the lens model was that the ecological approach brought out and highlighted the feature of uncertainty of the person and his/her environment (Araújo & Davids, 2009).

Barker came to the notion that one could predict behaviour. He found that it was easier to predict behaviour from places than from people due to the fact that places showed to be more constant than people. From this idea that behaviour is not only fixed to a person, but rather that behaviour comes from places as well, Barker presented concepts and methods to make sense of the way in which places (environment) shape people’s social behaviours (Araújo & Davids, 2009).

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Gibson's ecological approach focused on the importance of the person and his/her environment and saw them as inseparable unities. Gibson studied perception, and a lot of his ideas were created from these influences. According to Gibson, perception can be described as the way in which a person sustains contact with his/her environment. Gibson was particularly interested in the role of the environment on the person, and he increased his focus on the environment by means of the theory of affordances. This theory is used as a means to explain the opportunities for action on the part of the person in the environment (Araújo & Davids, 2009; Tudge et al., 1997).

Bronfenbrenner referred to ecology as the interaction that occurs between the person and his/her context. He came to the notion that a person's development was not isolated from the environment, but rather that it was influenced by everything in the person's proximate environment. Bronfenbrenner proposed that the person and the environment have an effect on each other. He developed the bio-ecological model as a means to explore what role the environment plays in shaping a person's development through his/her life. Within the bio-ecological model he identified four important dimensions that are interdependent of each other, namely the PPCT perspective (Araújo & Davids, 2009; Krebs, 2009a, 2009b; Larsen, Alfermann, & Christensen, 2012; Owen, 2009; Visser, 2007). For the purpose of this study I am going to use the principles of Bronfenbrenner's ecological perspective.

Even though the four theorists discussed above developed their approaches in other fields than that of sport psychology, they all seek to recognise the athletes' behaviour with regards to the athletes' environment (Beek, 2009).

2.2.2 Theory of the Ecological Framework

Bronfenbrenner focused his work on developing an ecological framework that paid particular attention to the context (1979), and he later amended his original theory of the ecological model and developed it into the bio-ecological model that paid particular attention to processes and the role of a person in his/her environment (Bronfenbrenner, 1995, 1999; Larsen, 2013). The bio-ecological model is concerned with the relationship that occurs between the PPCT components. The PPCT model can be seen as the fundamental principle of Bronfenbrenner's theory, as it is based on the relationship that occurs between the four PPCT components (Hendriksen, 2010; Larsen, 2013; Santos, Domingues, & Conçalves, 2011). The four components will be discussed in more detail below.

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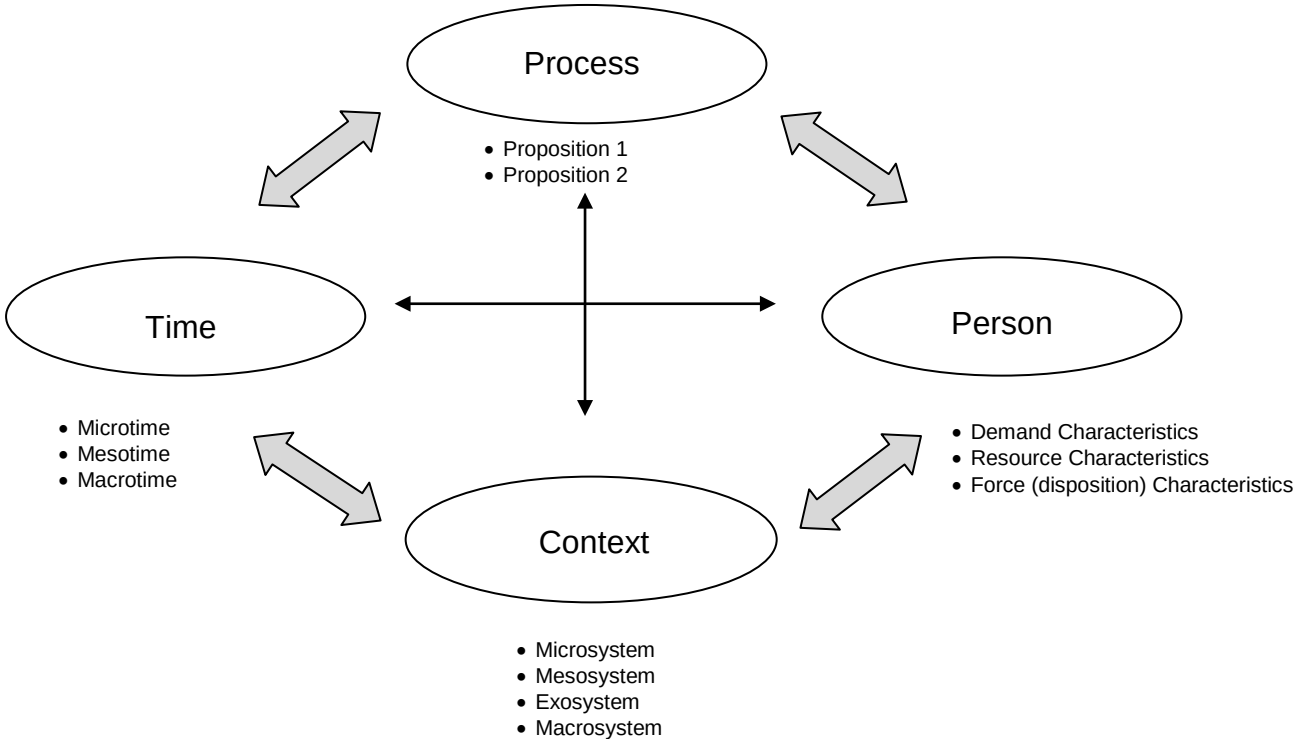

Figure 2.2 Illustration of the Process, Person, Context and Time (PPCT) model

2.2.2.1 Process within the Bio-ecological Model

Of the four components of the PPCT model, the process is seen as the core of the bio-ecological model. The process involves dynamic interactions between the person and the immediate environment. Bronfenbrenner (2005) labelled this interaction as proximal processes. Proximal processes appear in two dominant propositions, namely (1) Proposition 1 and (2) Proposition 2, which will be discussed below (Araújo, 2009; Bronfenbrenner, 1999; Hendriksen, 2010; Krebs, 2009a, 2009b; Larsen, 2013; Santos, Domingues, & Conçalves, 2011).

1. Proposition 1

Proposition 1 holds that in order for humans to develop, they need to interact with their immediate environment frequently over long periods of time so that development can be effective. This interaction that occurs between the person and his/her immediate environment is labelled as proximal processes. Proximal processes can be seen as the driving force of development, thus we can say that proximal

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processes play an invaluable role in development (Araújo, 2009; Bronfenbrenner, 1999; Hendriksen, 2010; Krebs, 2009a, 2009b; Larsen, 2013; Santos et al., 2011).

2. Proposition 2

Proposition 2 proposes that proximal processes that drive development function differently for each person due to the different characteristics that each person portrays and due to each individuals unique environment. We can thus conclude that proximal processes are the result of the person and the environment (Araújo, 2009; Krebs, 2009a; Larsen, 2013).

Proximal processes are thus useful when it comes to the performance development of athletes because athletes partake in training frequently over long periods of time as a means to increase their sporting abilities. Apart from activities (training) that need to continue for long periods of time, the activities complexity needs to increase so that the athlete doesn't reach a level of plateau (Araújo & Davids, 2009). Developmentally effective proximal processes require the interaction of athletes and their environment. It therefore includes all role players (e.g. coaches, parents, sport scientists) for performance development (Araújo & Davids, 2009). In this study sport scientists were included in broadening the performance development for their work performance.

Reviewing the section above, it is evident that the two propositions are interdependent of each other. Proposition 1's focus is on the person's development that is concerned with the interaction between the person and the environment. This takes place regularly over an extended period of time. Proposition 2 is concerned with the uniqueness of each person and the context he/she lives in, as this affects the nature of the proximal process.

2.2.2.2 Person within the Bio-ecological Model

The person in the PPCT model refers to how a person's characteristics can influence the environment and thus play a role in his/her own development. Bronfenbrenner (2005) identified three personal characteristics that play a role in the person's development, namely (1) demand characteristics, (2) resource characteristics, and (3) force characteristics. I will explain the three characteristics in more detail below.

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1. Demand Characteristics

Demand characteristics are responsible for the way that we form first impressions of people due to factors such as age, gender, complexion and physical features. These characteristics usually influence the person's interaction with his/her social environment because of the expectations that are formed with the first impressions. Demand characteristics can influence the way people are being accepted or rejected in their social environment due to first impressions, and this can also affect the operation of proximal processes (Araújo & Davids, 2009; Krebs, 2009a). For example, an athlete that is quite old can raise some reactions from his/her social environment, and this can affect whether he/she is being accepted or rejected within that environment. This outcome therefore affects the operation of proximal processes.

2. Resource Characteristics

Resource characteristics are not formed immediately on first impressions although they can be influenced by the demand characteristics. Resource characteristics are mainly associated with mental and emotional resources (e.g. past experiences, intellect and skills), as well as material resources (e.g. access to food, shelter and education). These resources affect the way the person engages in proximal processes due to liabilities and assets that the resources produce (Araújo & Davids, 2009; Krebs, 2009a). For example, liabilities for athletes can be a lack in performance experience, while assets can refer to the accessibility to coaches; both these liabilities and assets will influence the athletes' capability to engage in proximal processes.

3. Force Characteristics

Force characteristics or dispositions are related to differences in motivation, temperament and persistence. Dispositions can also be viewed as motivational forces that play a role in the onset of proximal processes within a specific developmental environment (Araújo & Davids, 2009; Krebs, 2009a). The dispositions can either be positive or negative, as they can either continue to sustain action, or they can delay or stop their occurrence. Bronfenbrenner (2005) refers to positive effects as "developmentally-generative" and the negative effects as "developmentally-disruptive".

Krebs (2009a) explains the two dispositions in a sport setting. He refers to the developmentally-generative disposition as the athlete's position to repeat a specific routine so that the athlete can

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improve his/her physical fitness, while developmentally-disruptive disposition refers to athlete's disagreement to repeat a specific routine so that the athlete can improve his/her physical fitness. These two dispositions can be experienced at the same time by the athlete in his/her sport context.

In summary, the three personal characteristics as discussed above can influence the proximal process. Demand characteristics are mainly concerned with physical features, age and gender, while resource characteristics deal with emotional and material resources. Lastly, force characteristics are associated with variations in a person's motivation, temperament and persistence.

2.2.2.3 Context within the Bio-ecological Model

The context refers to four ecological systems where development takes place, namely microsystem, mesosystem, exosystem and macrosystem, this is illustrated in figure 2.1. The bio-ecological model holds that human behaviour is influenced by these four systems that are firmly joined, as each one fits into a larger system and each one is interconnected with the other. If change occurs in one part of the ecological systems, it will automatically create a change in other parts of the ecological system, as they are interconnected (Bronfenbrenner, 2005; Bronfenbrenner & Morris, 2006; Tudge et al., 1997; Visser, 2007). The four systems of the context will be discussed in more detail below.

1. Microsystem as Context

The microsystem, which is the smallest and is seen as the most important, is the direct setting in which an individual lives. In this setting direct interaction with agents takes place. An individual is constantly shaped in the microsystem by the environment and direct interaction with agents (Araújo & Davids, 2009; Bronfenbrenner, 2005; Bronfenbrenner & Morris, 2006; Larsen, 2013; Santos et al., 2011; Visser, 2007). For example, athletes, peers, teachers, coaches, parents and the multi-disciplinary team which includes dieticians, doctors, physiotherapists, biokineticists and biomechanical analysts can be seen as the microsystem of the sport scientists at the hpc, as these role players are involved with the sport scientist.

2. Mesosystem as Context

Encircling the microsystem is the mesosystem. The mesosystem is where relations between microsystems take place, and it has an influence on individuals and on each other (Bronfenbrenner,

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2005; Bronfenbrenner & Morris, 2006; Krebs, 2009a; Visser, 2007). For example, the mesosystem for a sport scientists at the hpc could be the relationship between the sport scientist and the sport psychologist/sport counsellor or the relationship between the athlete and the sport scientist.

3. Exosystem as Context

The third system is the exosystem. The exosystem includes relations between microsystems in which an individual does not ordinarily have an active role, but which has an influence on the immediate context (Bronfenbrenner, 2005; Bronfenbrenner & Morris, 2006; Krebs, 2009a; Visser, 2007). An example of the exosystem of an hpc sport scientist could be the services rendered by the hpc such as transport, the gymnasium and the restaurant, or services that UP render such as training facilities. Sport scientists don't actively have a role in these services, but it still has an impact on them.

4. Macrosystem as Context

The last and biggest system is the macrosystem. The macrosystem includes certain values, traditions and laws of the culture in which individuals live. These societal factors have an impact on the individual's life (Bronfenbrenner, 2005; Bronfenbrenner & Morris, 2006; Visser, 2007). An example of a macrosystem of the sport scientists at the hpc could be the ISR, as their policies and decisions can influence the work that they provide.

To sum up the focus of the four systems, I will address each system. The microsystem represents the person in his/her direct environment, the mesosystem is concerned with the interactions between the microsystems, the exosystem is concerned with events that play an indirect role in the person's development and lastly, the macrosystem is concerned with the attributes of a big group that share in the same values and beliefs. The ecological perspective looks at these interactions ranging from the microsystem to the macrosystem that take place in the community and tries to understand individual and community functioning through the interactions that have an effect on each other (Bronfenbrenner, 2005; Bronfenbrenner & Morris, 2006; Visser, 2007).

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2.2.2.4 Time within the Bio-ecological Model

The final component of the PPCT model is time. Time can be classified into two criteria: The first refers to historical events that occur within a person's developing life, and the second refers to the timing of biological and social changes that relate to age, role expectations and opportunities that occur within a person's developing life. Time, as well as timing, are both significant in all components of the PPCT model, as these components are subjected to constancy and change (Krebs, 2009a). An example of the first criterion (historical events) in sport can be how the soccer world cup that was hosted in 2010 in South-Africa affected the sport competition for the South-African soccer players. The second criterion (timing) is, for example, the finishing of a sport person's career at a specific time. The dimension of time is classified into three successive levels, namely microtime, mesotime and macrotime, which will be discussed below.

1. Microtime as Time

Microtime refers to continuity versus discontinuity in proximal processes, in other words what is happening in a specific activity (Krebs, 2009a). An example in sport can be an athlete that spends the whole day practicing a specific technique to enhance his/her performance.

2. Mesotime as Time

Mesotime refers to the periodicity of these occurrences of proximal processes across time intervals, for example days and weeks, in other words the degree to which activities happen with some regularity (Krebs, 2009a). An example in sport can be an athlete that spends thirty eight days practicing a specific technique to enhance his/her performance.

3. Macrotime as Time

Macrotime refers to changing expectations and events in a greater period of time, both within and across cultures (Krebs, 2009a). An example in sport can be an athlete's entire sports career, from his/her entrance into sport until his/her retirement.

Reviewing this section, we can conclude that time plays an important role in a person's development. The three levels of time firstly include microtime that is concerned with what is taking place during a

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specific activity. Secondly, mesotime refers to how long processes take place in a person's environment, and lastly, macrotime focuses on altering prospects across cultures over a person's lifespan.

2.3 ECOLOGICAL FRAMEWORK AND SPORT PSYCHOLOGY

The ecological perspective includes other role players (e.g. coaches, parents and the multi-disciplinary team which includes dieticians, doctors, sport scientists, physiotherapists, biokineticists and biomechanical analysts) in the sport community to be part of the performance development process. From the ecological perspective, performance development can be seen as an ecological phenomenon and is critical towards the individualistic perspective that perceives performance development and an individualistic endeavour.

Due to the dilemma that it is only athletes at the hpc that receive performance development services from the sport psychologists/sport counsellors as indicated in figure 2.1, the ecological perspective changed the position of sport psychology service delivery. The change that takes place is from a more traditional individualistic perspective to a perspective that takes into consideration other role players within the hpc. Athletes, and more specifically athletes at the hpc, are primarily the clients that receive performance development services from the sport psychologists/sport counsellors, leaving out the other role players (e.g. coaches, parents and the multi-disciplinary team which includes dieticians, doctors, sport scientists, physiotherapists, biokineticists and biomechanical analysts) at the hpc.

From a sport psychology point of view, the individualistic perspective as shown in figure 2.1 focuses on the athlete's responsibility for performance development through the services of sport psychologists/sport counsellors. The ecological perspective includes other role players (e.g. coaches, parents and the multi-disciplinary team which includes dieticians, doctors, sport scientists, physiotherapists, biokineticists and biomechanical analysts) in order to develop their work performance through the services of sport psychologists/sport counsellors. The focus in this study is on the sport scientist's relationship with the sport psychologist/sport counsellor as a means to become acquainted with the sport psychology services so that sport scientists can use the principles within their own work domain and develop the necessary skills to excel in their work and to contribute to sport development.

The ecological approach acknowledges that the behaviour of the person in the microsystem can be affected by numerous influences (e.g. athlete, coaches, parents and the multi-disciplinary team which

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includes dieticians, doctors, sport scientists, physiotherapists, biokineticists and biomechanical analysts). Therefore, it is important for sport scientists to be educated, in order to be an influential factor in their work when it comes to performance development. The ecological perspective includes sport scientists' relationship with the sport psychologist/sport counsellor as a means for work performance development.

If sport scientists can become acquainted with the sport psychology services, so that they can use the principles within their own work domain as a means to work performance development, they will be able to create greater opportunities for themselves to expand on their performance development. This study focuses on moving away from the individualistic approach where it is only athletes that receive performance development from sport psychologists/sport counsellors to an approach that includes all role players, and more specifically the sport scientist at the hpc.

Conclusion

After the presentation of this chapter, the reader should have an understanding of sport psychology service delivery to athletes, and they should understand the ecological framework with specific reference to its origin and theory. Lastly, the reader should be familiar with the ecological framework in sport psychology and the reason selecting the ecological framework for this study.

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CHAPTER 3
PSYCHOLOGICAL SKILLS TRAINING IN SPORT

Introduction

The purpose of this chapter is to provide an overview of CBT and the PST approach to performance development in sport, as this is one of the approached presented to athletes at the hpc. I will discuss CBT due to the fact that PST originated from this second wave therapeutic approach (Hayes & Strosahl, 2004). PST has been the leading performance development approach for the last three decades and still takes centre stage in the sport context (Hasker, 2010). This chapter will look into the origin and theory of CBT. The chapter will also look into the origin, theory, psychological practices, previous research and critique of PST in sport.

3.1 COGNITIVE BEHAVIOUR THERAPY (CBT)

3.1.1 Origin of Cognitive Behaviour Therapy (CBT)

Two main influences serve as historical basis for CBT. The first influence is Behaviour Therapy (BT), which can be seen as the primary originator of CBT, while the second influence is Cognitive Therapy (CT).

3.1.1.1 Behaviour Therapy (BT)

BT was primarily developed by J. Wolpe in the 1950's and 1960's as a reaction against the dominating paradigm for psychotherapy known as psychodynamics, developed by S. Freud (Dobson, 2009; Hayes, 2004; Öst, 2008). Early behaviour therapists maintained the fact that psychology needed to be scientifically proven, which was significantly similar to the approaches that natural science used such as biology and physics. In this spirit, BT ignored assumptions about the unconscious, hidden and unobservable structures of the mind and rather employed principles from learning theory to modify behaviour and emotions (Hayes, 2004; Öst, 2008). Within therapy, emphasis was placed on noticeable problematic behaviour, and this was modified by more adaptive behaviour by means of conditioning, learning and reinforcement (Avis, Pauw, & Van der Spuy, 2004).

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3.1.1.2 Cognitive Therapy (CT)

Despite the success of BT, there was discontent regarding the limitations of a solely behavioural approach. Different ways were explored to incorporate a cognitive trend into psychology and therapy, and so CT was developed by A.T. Beck in the 1960's (Dobson, 2009; Öst, 2008; Wright, Basco, & Thase, 2006). CT is based on the cognitive model, arguing that dysfunctional cognitions and maladaptive information processing of events can negatively influence a person's emotions and behaviour. The main goal of CT is to modify a person's dysfunctional cognitions of live events with more functional (realistic) cognitions (Dobson, 2009; Wright et al., 2006).

3.1.1.3 Cognitive-Behaviour Therapy (CBT)

BT and CT grew together over the years and during the late 80's and early 90's of the previous century they influenced each other in such a way that the fusion is now most commonly known as CBT (Öst, 2008; Wright et al., 2006). Modern CBT is made up of BT which focuses on the significance of behavioural change to overcome mental health problems and CT which focuses on comprehending and modifying the thinking about events. The goal of CBT is to accomplish change; the most prominent indicators used for change are behaviour and cognitions (Dobson, 2009).

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3.1.2 Theory of Cognitive Behaviour Therapy (CBT)

The fundamental components of the cognitive behaviour model are illustrated in Figure 3.1 and will be discussed further in this section.

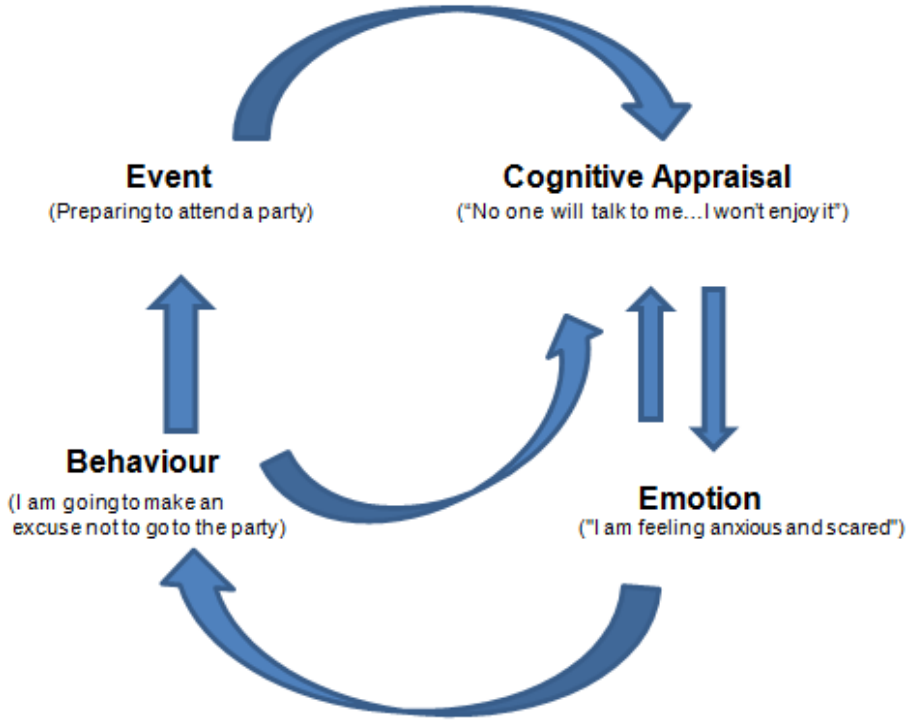

Figure 3.1 Basic Cognitive-Behavioral Model (Wright et al., 2006)

3.1.2.1 Events, Cognitions, Emotions and Behaviour in Therapy

CBT proposes that cognitions, emotions and behaviours are connected. The focal point is cognitive processing, the reason being that individuals value the significance of events in the world around and within them, and cognitions are often related with emotional reactions (Wright et al., 2006). Within CBT, there are three significant levels of cognition. The highest level of cognition is consciousness, a state of being aware and making logical decisions. The other two levels are automatic thoughts and schemas. Automatic thoughts lead to how a person makes sense of an event, and through this process schemas start to develop. Schemas are rules that influence how people will assign meaning to events (Hayes & Strosahl, 2004; Hayes, Strosahl, & Wilson, 1999; Kazantzis, Deane, Ronan, & L'Abate, 2005; Wright et al., 2006). Evidence suggests that a person's cognitions of a specific event can evoke certain emotions, and that can affect how the person will respond (behaviour) to the event (Hayes & Strosahl, 2004; Hayes et al., 1999; Kazantzis et al., 2005; Wright et al., 2006). For example, referring to Figure 3.1, it is evident that the individual's cognitive appraisal: "No one will talk to me … I won't enjoy it" was brought

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on by the event of preparing to attend the party. The thought of attending the party evoked the emotion of anxiousness and being scared, which resulted in a problematic behavioural response of him/her not attending the party. This example illustrates how cognitions, emotions and behaviours are connected, thus how an individual's cognition about a specific event will shape their emotions and behaviours.

3.1.2.2 Cognitive Monitoring and Modification in Therapy

CBT suggests that we can monitor and modify cognitive activity. Strategies to monitor and modify cognitions focus on the content of the cognitions and the assessment of cognitive results and not so much on the process of cognitions. Within CBT, individuals are urged to recognize and change problematic cognitive processes (Hayes & Strosahl, 2004; Hayes et al., 1999; Kazantzis et al., 2005; Wright et al., 2006). The individual in Figure 3.1 needs to realise that his/her cognitive appraisal "No one will talk to me … I won't enjoy it" can be seen as a problematic cognition, as it evoked emotions of anxiousness and being scared, which resulted in behaviour of not attending the party, and thus he/she needs to change the way he/she thinks about the event to a more desirable cognition. This can be done through processes such as rational thinking and problem solving. Therefore, we can conclude that in order to change unwanted behaviour, a person has to modify the cognitions related to the specific event that causes the unwanted behaviour (Hayes & Strosahl, 2004; Hayes et al., 1999; Kazantzis et al., 2005; Wright et al., 2006). Referring to Figure 3.1 we can thus assume that if the individual changes his/her undesirable cognitions: "No one will talk to me … I won't enjoy it" to more desirable cognitions such as "I am going to enjoy the party … It is going to be fun", it will have an impact on the emotions. For example, instead of being anxious or scared the person might be joyful and excited, and that in turn will have a direct correlation to a more desirable behaviour, which will be to attend the party. Some methods used in therapy to recognize and identify automatic thoughts are: recognizing mood shifts, psycho-education, guided discovery, thought recording, imagery exercise, role-play exercises and the use of checklists. Methods that are used in therapy to modify and replace automatic thoughts include: Socratic questioning, thought change records, cognitive rehearsal, coping cards, reattribution, generating rational alternatives, identifying cognitive errors, examining the evidence and de-catastrophizing. Usually these two phases are dealt with as an entity and not independently in order to develop functional (realistic) cognitions (Wright et al., 2006).

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3.1.2.3 Events, Cognitions, Emotions, Behaviour and Change

CBT deals with the interaction of cognitions, emotions, behaviours and the environment in which the individual operates. In order for an individual to behave in a desirable way, changes have to occur in problematic cognitions and behaviours. This approach is based on the values of cause and effect and problem and solution. In essence CBT makes the assumption that desired cognitions will lead to desired emotions, which in turn will lead to desired behaviour (Hayes & Strosahl, 2004; Hayes et al., 1999; Kazantzis et al., 2005; Wright et al., 2006). Referring to Figure 3.1 CBT concludes that if changes occurred within the problematic cognition of: "No one will talk to me … I won't enjoy it", it would have changed the problematic emotion of being anxious and scared to a more desirable emotion of being joyful an excited. This desirable change that occurred within the emotion will in turn change the problematic behaviour of avoiding the party to a desirable behavioural response of the person attending the party. CBT affirms that desired behaviour change is mainly a result of changes in an individual's cognitive processes (Dobson, 2009). However, CBT also believes that behaviour can have an enormous influence on cognitions and emotions, and that changing a person's behaviour is an effective means of changing cognitions and emotions (Hayes & Strosahl, 2004; Hayes et al., 1999; Kazantzis et al., 2005; Wright et al., 2006). Behavioural techniques are used in accordance with cognitive techniques in order to encourage adaptive behaviour. Techniques used in therapy include: behavioural activation, activity scheduling, activity assessment, graded task assignments, behavioural rehearsal and problem solving (Dobson, 2009).

3.2 PSYCHOLOGICAL SKILLS TRAINING (PST) IN SPORT

3.2.1 Origin of Psychological Skills Training (PST) in Sport

The underlying principles of PST stem from CBT. In order to formulate an understanding of the theoretical foundations of PST, I am going to discuss where PST originated from within the broader scope of BT. BT can be grouped into three waves which will be discussed in order to understand the origin of PST (Öst, 2008; Hayes, 2004).

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3.2.1.1 First Wave Behaviourism

Early behaviour therapists believed that theories should evolve from scientific (positivistic) principles. It was in this time that first wave BT started its development. Researchers began to apply the ideas of several experimental behaviourists such as I. Pavlov, J. B. Watson and B. F. Skinner who contributed to the development of BT (Avis et al., 2004; Hayes, 2004; Wright et al., 2006).

The first wave of BT was in objection against the clinical principles that were used as therapeutic interventions such as psychodynamics. The objections of this approach were supported by two of the major streams within BT, namely neo-behaviourism and behaviour analysis. As a result of the objections, BT ignored assumptions about unconscious, hidden and unobservable structures of the mind and employed principles from the learning theory to modify behaviour and emotions (Hayes, 2004; Öst, 2008). The emphasis of therapy was to substitute noticeable problematic behaviours with adaptive behaviours through a process of conditioning, learning and reinforcement (Avis et al., 2004).

3.2.1.2 Second Wave Behaviourism

Second wave behaviourism was set off by CT. BT and CT fused together to form the most prevalent second wave therapeutic approach with the largest evidence base known as CBT (Öst, 2008; Wright et al., 2006). During the first wave much emphasis was placed on observable behaviour, while during the second wave the therapist had to deal with cognitions and emotions in a more direct way, and so emphasis was placed on how cognitions effected emotions and ultimately behaviour (Hayes, 2004). The focus in therapy was to change problem behaviour by changing the cognitions that cause and perpetuate them. Some themes of the first wave behaviour therapy were carried over to the second such as the didactic and simplistic approaches that focused on the value of cause and effect and problem and solution (Hayes, 2004; Hofmann & Asmundson, 2008; Wright et al., 2006).

The underlying principles of PST originated from the second wave BT with specific reference to cognitive-behavioural theory and practice (Hayes & Strosahl, 2004). PST has been the leading performance development approach in sport psychology and was developed by Meichenbaum (1977) more than three decades ago. PST focuses on eliminating negative internal experiences (cognitions, emotions) of athletes through mental skills and/or changing negative internal experiences (cognitions, emotions) of athletes to positive internal experiences (cognitions, emotions) through mental skills, as

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these hinder athletes in obtaining an ideal performance state (Bernier et al., 2009; Gardner & Moore, 2004a; Hayes & Strosahl, 2004; Moore, 2009).

3.2.1.3 Third Wave Behaviourism

BT has experienced two waves and is currently advancing into the third wave. The third wave of BT discarded the approaches of the first and second wave where emphasis was placed exclusively on behaviour and/or cognitions that were problematic. As an alternative the third wave focuses on the setting where behaviour occurs and aims to alter the function of behaviour rather than the problematic behaviour itself (Dobson, 2009; Hayes, 2004; Hofmann & Asmundson, 2008; Öst, 2008). A unique trait of the third wave therapies is the amount of focus that is placed on contextual and experiential change strategies and the use of concepts such as acceptance, defusion, mindfulness, relationship, values, emotional deepening and contact with the present moment (Hayes, 2004; Hofmann & Asmundson, 2008; Öst, 2008). The third wave group of therapies is mostly associated with ACT (Dobson, 2009). I will explain ACT in Chapter 4, as it relates specifically to the origin of the Mindfulness- Acceptance-Commitment (MAC) approach.

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3.2.2 Theory of Psychological Skills Training (PST) in Sport

The fundamental components of PST are illustrated in Figure 3.2 and will be discussed further in this section

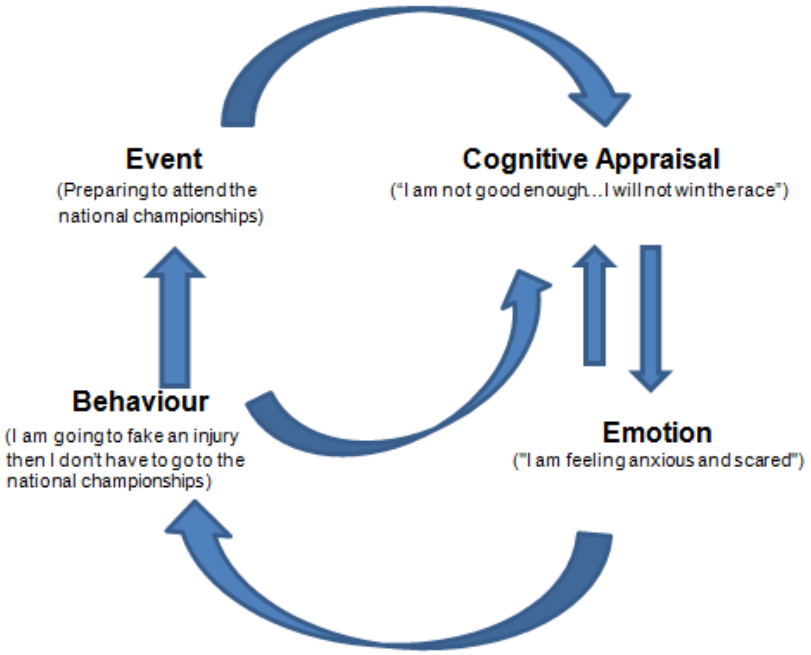

Figure 3.2 Basic PST Model (Wright et al., 2006)

3.2.2.1 Events, Cognitions, Emotions and Behaviour in Sport

The role of cognitions, emotions and behaviours plays an enormous role within PST. The principles of PST assume that in order for an athlete to reach optimal performance, the athlete has to be free from distractions caused by internal experiences (cognitions, emotions), external stimuli or bodily sensations. If distractions are present, it will hinder an athlete's abilities to reach a state of flow. Evidence suggests that the way an athlete's cognitions are built around a specific event can affect the athlete's performance within that event (Andersen, 2000; Wann, 1997; Weinberg & Gould, 2003). For example, referring to Figure 3.2 it is evident that the athlete's cognitive appraisal: "I am not good enough … I will not win the race" was brought on by the event of preparing to attend the national championships. The thought of attending the national championships evoked internal experiences (emotions) of anxiousness and being scared which resulted in a problematic behavioural response of him/her not attending national championships. It is evident that distractions within the athlete's internal experiences (cognitions, emotions) and external stimuli led to him/her not achieving optimal performance.

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3.2.2.2 Cognitive Monitoring and Modification in Sport

Within PST athletes are urged to recognize and change distractions that occur within their cognitive processes. PST believes that if athletes change, avoid or control negative cognitions, they will be able to reach optimal performance. The way athletes can address and change distractions is by means of cognitive monitoring and modification (Andersen, 2000; Wann, 1997; Weinberg & Gould, 2003). The athlete in Figure 3.2's cognitive appraisal: "I am not good enough … I will not win the race" can be seen as a problematic cognition, as it resulted in unwanted behaviour of the athlete not attending the national championships and thus not reaching optimal performance. As a result of this, PST suggests that the athlete needs to change the way he/she thinks about the event to a more desirable cognition. This can be achieved by applying mental skills[3] as a means to monitor and modify distracting cognitions (Andersen, 2000; Wann, 1997; Weinberg & Gould, 2003). Referring to Figure 3.2 PST assumes that if the athlete changes his/her problematic cognition: "I am not good enough … I will not win the race" to a more desirable cognition such as "I am on top of my game … I can run a personal best", it will have a direct correlation to a more desirable behaviour such as attending the national championships, thus reaching optimal performance.

3.2.2.3 Event, Cognitions, Emotions, Behaviour and Change in Sport

In order for an athlete to reach optimal performance, the athlete has to be free from distractions caused by internal experiences (cognitions, emotions), external stimuli or bodily sensations. PST assumes that for an athlete to reach optimal performance, the athlete has to be free from distractions caused by cognitions, emotions, behaviour and the environment. In order for the athlete to perform optimally, changes have to occur in problematic cognitions, emotions and behaviours so that they can function in the absence of distractions (Andersen, 2000; Wann, 1997; Weinberg & Gould, 2003). Referring to Figure 3.2 PST assumes that if distractions were eliminated within the problematic cognition of "I am not good enough … I will not win the race", it would have changed the problematic emotion of being anxious and scared to a more desirable emotion such as being alert or energetic. As a result of the emotion that is free from distractions, it will in turn change the problematic behaviour of not attending the national championships to a desirable behavioural response of the person attending the national championships, thus achieving optimal performance. PST affirms that desired behaviour change is

[3] Mental skills refer to techniques such as goal setting, imagery, arousal control, routines, self-talk, motivation, concentration and self-confidence. Mental skills are employed to eliminate the distractions through the process of avoiding, controlling or changing the distractions (Gardner & Moore, 2006, 2007; Weinberg & Gould, 2003).

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mainly a result of distractions that have been changed, controlled or avoided in an athlete's cognitive processes (Andersen, 2000; Wann, 1997; Weinberg & Gould, 2003).

3.2.2.4 Critique against Psychological Skills Training (PST) in sport

PST studies focus mainly on athletes within different sport fields, for example rugby players, netball players, hockey players, athletes, soccer players, dancers, cricket players and swimmers (Edwards & Edwards, 2012; Edwards & Steyn, 2008; Grobbelaar & Eloff, 2011; Jooste, Steyn, & Van Den Berg, 2014; Kruger, 2010; Pieterse & Potgieter, 2006). This can be used as critique against PST because it leaves out a majority of important role players within the sport community. Gould (2002), a renowned sport psychologist, did address this shortcoming by appealing that sport psychology researchers expand their knowledge to other domains. Edwards and Steyn (2008) also suggested in their study that PST interventions should not only be used on athletes, but rather include the athletes' parents, school principals and sport coaches. The implementation of PST approaches focuses mainly on the athlete to obtain an optimal state of mind through their work with the sport psychologist/sport counsellor. This is labelled as an individualistic perspective, as the focus on all other important role players within the athletes' environment is being excluded (see Chapter 2) (Hammond & Bateman, 2009). Horn, Gilbert, Gilbert and Lewis (2011) found in their research study that if coaches would have participated in the PST programme-based approach on a regular basis, they would have become familiar with the PST principles, and as a result transfer their knowledge to their athletes during practice or competition.

The main aim of PST is to create an optimal state of mind (Orlick, 1998). In order for athletes to maintain an optimal state of mind, athletes need to control, change or suppress their internal experiences (cognitions, emotions and bodily sensations). The first critique against this notion of PST is that an optimal state of mind cannot be experienced all the time; Ravizza (2005) noticed in his work that an optimal state of mind is only achieved for a short time within the athletes' performance. The second part of the critique is on the counterproductive effect that control has on the athletes' performance. Gardner and Moore (2006) suggest in their research that the control of internal experiences may in fact have a counterproductive outcome on the athlete's performance. For example, an athlete may need to change his/her negative internal experiences into positive internal experiences. This process might inadvertently trigger an athlete to focus more on his/her negative internal experiences. Controlling, changing or suppressing negative internal experiences therefore unintentionally promotes negativity rather than reducing it.

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Generally PST programme-based approaches have not been developed as each programme is adapted to address the specific physical and psychological demands of individuals or groups who will receive the programme (Bertollo, Saltarelli, & Robazza, 2009; Edwards & Steyn, 2008; Jooste et al., 2014). This is evident within the study of Pieterse and Potgieter (2006), where middle-distance athletes preferred a programme which included mental skills such as relaxation, self-talk, goal setting, imagery and concentration, while in Grobbelaar's (2007) study, netball coaches preferred a programme which included mental skills such as goal setting, self-confidence and concentration skills. The critique against PST programme-based approaches is that the outcome of a single PST programme cannot be generalized, thus it can lead to uncertainty as to which mental skills should form part of a PST programme and what their effectiveness will be for specific individuals or groups.

PST focuses mostly on athletes' weaknesses. The role of the sport psychologist/sport counsellor is to fix athletes weaknesses by means of introducing mental skills in order for athletes to reach optimal performance (Gordon & Gucciardi, 2011). Focusing only on athletes' weaknesses can be used as critique against PST, as this ignores the athletes' strengths on which no focus is placed. Gordon and Gucciardi (2011) encourage sport psychologists/ sport counsellors to focus on athletes strengths in order for athletes to achieve optimal performance. Another point of critique lies in the fact that when PST is delivered, it is mostly delivered over a short period of time to fix athletes weaknesses. This can be problematic, as some athletes might require a long term intervention. Horn et al. (2011) found that long term interventions can give athletes the opportunity to become more acquainted with PST skills, and it can also improve their effectiveness.

3.2.3 Practices of Psychological Skills Training (PST) in Sport

PST that has been researched within the South African context has centred its attention on several PST skills (mental skills), for example: goal setting, imagery/mental rehearsal, self-talk, relaxation techniques, concentration training, fear control, self-confidence, activation/arousal control, motivation, freedom from worry, routines, relaxation techniques, stress reactions and peaking under pressure. The PST skills that overshadowed most of the studies are: goal setting, imagery, arousal control, routines and concentration (Andrew, Grobbelaar, & Potgieter, 2007; Edwards & Edwards, 2007; Edwards & Edwards, 2012; Edwards & Steyn, 2008; Grobbelaar, 2007; Grobbelaar & Eloff, 2011; Kruger, 2010; Kruger, Potgieter, Malan, & Steyn, 2010; Pieterse & Potgieter, 2006; Van den Heever, Grobbelaar, & Potgieter, 2007). As a result of the consistency of these PST skills being used in these studies, I will give a concise discussion of these PST skills in the section below.

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3.2.3.1 Goal Setting in Sport

Setting goals in sport is useful, as it creates the pathway to reach optimal performance in the absence of distractions. Athletes use goal setting to set specific targets and to work around distractions that will stand in the way of them reaching their goal. Goal setting is used by athletes to achieve a specific result or task (Gardner & Moore, 2007). Goal setting can be describe in terms of (1) time, (2) content, and (3) context.

1. Time: Time is used to distinguish between short term and long term goals. Short term goals refer to goals that have to be reached in a short amount of time and long term goals refer to goals that have to be reached in the near future. If the athlete identifies the time frame of the goal, it will keep the athlete focused and thus eliminates the distractions (Andersen, 2000; Cox 1994; Horn, 2008; Mellalieu & Hanton, 2009; Moran, 2004; Singer, Hausenblas, & Janelle, 2001; Taylor & Wilson, 2005; Wann, 1997; Weinberg & Gould, 2003).

2. Content: The content of the goals will determine whether they are outcome goals or process goals. Process goals focus mainly on the process that an athlete has to follow to reach optimal performance. Process goals can assist the athlete in that he/she can set goals around his/her physical abilities, technical planning and psychological preparation. This will eliminate distractions such as not being prepared, injuries and time constraints. Outcome goals focus mainly on the end result of an event. Outcome goals will assist the athlete to be motivated and driven and thus minimize distractions such as laziness and procrastination (Andersen, 2000; Cox 1994; Horn, 2008; Mellalieu & Hanton, 2009; Moran, 2004; Singer et al., 2001; Taylor & Wilson, 2005; Wann, 1997; Weinberg & Gould, 2003).

3. Context: Context is used to distinguish between individual or team goals and training or competition goals. Goals have to be set for each context in order to eliminate distractions that may hinder performance within each of these settings (Andersen, 2000; Cox 1994; Horn, 2008; Mellalieu & Hanton, 2009; Moran, 2004; Singer et al., 2001; Taylor & Wilson, 2005; Wann, 1997; Weinberg & Gould, 2003).

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3.2.3.2 Imagery in Sport

Imagery is the ability to create or recreate a specific event that is free from distractions in the athlete's mind. For imagery to be as realistic as possible, it is important for the athlete to utilize all his/her senses when he/she is creating or recreating an event. The athlete can benefit by creating or recreating an event that is free from distractions because it can assist the athlete to learn new skills or refine current skills, to mentally plan or rehearse a competition before hand, to recall mistakes, to control emotions, especially negative emotions, to enhance self-confidence, to increase attention and concentration and to help solve anticipated problems or difficult situations. Through creating these pictures where little or no distractions are present the athlete can reach optimal performance. Imagery can take on two different forms, namely (1) internal imagery, and (2) external imagery (Andersen, 2000; Cox 1994; Horn, 2008; Mellalieu & Hanton, 2009; Moran, 2004; Singer et al., 2001; Taylor & Wilson, 2005; Wann, 1997; Weinberg & Gould, 2003).

1. Internal imagery: Internal imagery is when an athlete will create an event in his/her mind and see it from a first persons view, in other words experience the picture from his/her own perspective (Andersen, 2000; Cox 1994; Horn, 2008; Mellalieu & Hanton, 2009; Moran, 2004; Singer et al., 2001; Taylor & Wilson, 2005; Wann, 1997; Weinberg & Gould, 2003).

2. External imagery: External imagery is when an athlete will create an event in his/her mind and see it from a third persons view, in other words experience the picture as an onlooker,as he/she observes himself/herself from outside his/her body. Imagery is used in such a way that there is little or no discomfort so that the athlete can function in a positive manner (Andersen, 2000; Cox 1994; Horn, 2008; Mellalieu & Hanton, 2009; Moran, 2004; Singer et al., 2001; Taylor & Wilson, 2005; Wann, 1997; Weinberg & Gould, 2003).

3.2.3.3 Arousal Control in Sport

Arousal refers to the level of activity in the athlete's mind and body. Due to the fact that sport performance includes qualities such as behavioural reactions, cognitive processes and social processes, it is important that the athlete's arousal level for each of these qualities is at an optimal level as arousal levels will indicate how prepared the athlete's mind and body is for the competition at hand (Cox 1994; Jarvis, 2006; Moran, 2004; Singer et al., 2001; Wann, 1997; Weinberg & Gould, 2003).

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If an athlete experiences distractions, and it leads to either over or under arousal, there are several techniques that are used to control these arousal levels. For example, if an athlete's arousal levels are too high, they can make use of muscle relaxation techniques, meditation and deep breathing to lower their arousal levels. When an athlete's arousal levels are too low they can increase them by taking legal drugs, doing light exercises and listening to upbeat music. It is important for athletes to become aware of their optimal level of arousal, as this will help the athlete to control or minimize distractions that are associated with arousal levels so that they can reach optimal performance (Cox 1994; Jarvis, 2006; Moran, 2004; Singer et al., 2001; Wann, 1997; Weinberg & Gould, 2003).

3.2.3.4 Routines in Sport

Pre-performance routines are repetitive behavioural and/or cognitive patterns that are followed before, during and after a competition. Routines are mainly used in competitions and training situations. It is important that an athlete's routine stays the same and does not change before every competition as a routine provides some confidence due to the fact that the athlete has done this several times before (Hardy, Jones, & Gould, 1996; Taylor & Wilson, 2005).

Routines assist the athletes to be free from distractions, as it gives an athlete some kind of control over the environment and thus makes it easier for the athlete to maintain focus and to avoid unwanted distractions. Pre-performance routines are unique to each individual. Some ways of minimizing distractions are simple such as listening to music before a competition, while others may be more detailed such as following a sequence of activities. This also gives the athlete security of the familiar under unfamiliar circumstances (Hardy et al., 1996; Taylor & Wilson, 2005).

3.2.3.5 Concentration in Sport

Concentration refers to the ability of the athlete to concentrate on relevant information and ignore distractions/irrelevant information which will stand in the way of him/her to achieve optimal performance. Therefore, concentration is a skill employed by athletes to assist them to perform in the absence of distractions in order to achieve optimal performance (Cox 1994; Mellalieu & Hanton, 2009; Weinberg & Gould, 2003). Concentration can fall into different dimensions, namely the (1) direction and (2) width of concentration.

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1. Direction of concentration: This is mainly where an athlete directs his/her energy. It can either be internal when the athlete's concentration is on internal aspects such as cognitions, emotions and breathing, or it can be external when the athlete's concentration is on external aspects such as the things around him/her (Cox 1994; Mellalieu & Hanton, 2009; Weinberg & Gould, 2003).

2. Width of concentration: This refers to the number of things the athlete has to concentrate on. It can either be broad concentration which means the athlete needs to concentrate on a lot of different stimuli, or it can be narrow concentration which means the athlete needs to concentrate on one or two stimuli (Cox 1994; Mellalieu & Hanton, 2009; Weinberg & Gould, 2003).

3.2.4 Research on Psychological Skills Training (PST) in Sport

PST is usually delivered by means of two approaches. The first approach is a skills-based approach which refers to how single PST skills are used and how they can help athletes to perform optimally. The second approach is a programme-based approach which refers to a package that is used to teach athletes different techniques and methods in order to develop psychological skills to assist in their own individual needs during sport participations. The skill-based approach that focuses on the delivery of PST skills was developed by Meichenbaum (1977) more than three decades ago. The origin of the programme-based approach in sport stems back to Suinn (1986). The programme-based approach is usually followed in a specific time period and can include three phases: the Educational Phase, where the athlete learns the importance of PST and how it can assist in performance; the Acquisition Phase, where athletes learn how to use PST skills and implement it in training; and the Practice Phase, where athletes use PST during competition and training (Gill, 2000; Horn, 2008). Over the last three decades research has been done on PST and athletes (e.g. netball players, rugby players, hockey players, track athletes, dancers, cricket players and swimmers), but from my literature search through the AIS of the UP, it appears that no research has been done on PST programme-based approaches with sport scientists. For the purpose of my study, I initially narrowed down my literature review, focusing on PST programme-based approaches in the South African context. Due to the limited research on PST programme-based approaches in the South African context, I expanded my search including any PST skills-based approaches that have been done within the South African context. Eleven research studies were found and will be discussed below in terms of their context, methodology, participants, approach and findings.

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3.2.4.1 Research Context

My focus was to review PST studies within the South African context, and as a result eleven studies were examined that fall within the South African context (Andrew et al, 2007; Edwards & Edwards, 2007; Edwards & Edwards, 2012; Edwards & Steyn, 2008; Grobbelaar, 2007; Grobbelaar & Eloff, 2011; Jooste et al., 2014; Kruger, 2010; Kruger, et al., 2010; Pieterse & Potgieter, 2006; Van den Heever, et al., 2007).

3.2.4.2 Research Methodology

The primary methodological approach which has been followed in eight of the eleven research studies was quantitative in nature (Andrew, et al., 2007; Grobbelaar, 2007; Grobbelaar & Eloff, 2011; Jooste et al., 2014; Kruger, 2010; Kruger et al., 2010; Pieterse & Potgieter, 2006; Van den Heever et al., 2007), while three studies used a mixed method approach (Edwards & Edwards, 2007; Edwards & Edwards, 2012; Edwards & Steyn, 2008). Based on my literature search through the AIS at the UP, it seems that to date there has been no published studies of a qualitative nature on PST within the South African context and more specifically with sport scientists.

3.2.4.3 Research Participants

The research participants studied were mostly athletes from different sport disciplines such as male rugby players (Andrew et al., 2007; Edwards & Edwards, 2007; Edwards & Edwards, 2012; Kruger et al., 2010), female provincial netball players (Grobbelaar, 2007; Grobbelaar & Eloff, 2011), female university hockey players (Kruger, 2010), male and female distant track athletes (Pieterse & Potgieter, 2006), male soccer players (Jooste et al., 2014), and the last study reviewed used a combination of athletes, dancers, gym members, cricket players, swimmers and included sport psychologists (Edwards & Steyn, 2008). The participants in these studies were mainly athletes, with limited focus on other role players in the sport community such as sport scientists. Chapter 2 addresses this dilemma where an individualistic perspective shows to be dominant, as athletes are the main focus, with limited focus on other role players in the sport community (see 2.1) (Gardner & Moore, 2004a, 2006, 2007; Jarvis, 2006). Due to this dilemma an ecological perspective is introduced to include other role player within the sport community. Referring to Bronfenbrenner's four systems of the ecological context, the athlete is in the smallest context, namely the microsystem. In order to move to an ecological standpoint interaction needs to take place. The mesosystem is where relationships between athletes and other

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role players within the sport community take place (see 2.2.2.3) (Visser, 2007). The purpose of this study is to create an ecological perspective so that all role players within the sport community are involved in the athletes' performance development from a psychological standpoint, and not only the sport psychologists/counsellors.

3.2.4.4 Research Approach

Four of the eleven studies that were reviewed focused on PST programme-based approach (Edwards & Edwards, 2007; Edwards & Edwards, 2012; Edwards & Steyn, 2008; Pieterse & Potgieter, 2006), while seven studies focused on PST skills–based approach in general (Andrew et al., 2007; Grobbelaar, 2007; Grobbelaar & Eloff, 2011; Jooste et al., 2014; Kruger, 2010; Kruger et al., 2010; Van den Heever et al., 2007).

3.2.4.5 Research Findings

The research findings will be discussed in terms of positive results, mixed results and negative results.

1. Positive Results: Mental skills consisting of imagery, arousal control, stress management, motivation, concentration and self-talk were effective in enhancing performance (Edwards & Edwards, 2012; Edwards & Edwards, 2007; Pieterse & Potgieter, 2006). A large portion of players had been previously exposed to mental skills and perceived it as very important for performance (Van den Heever et al., 2007).

2. Mixed Results: After the implementation of a PST programme-based approach no significant quantitative differences were found in the experimental and control group, but qualitative content showed that the PST programme-based approach improved psychological skills and psychological wellbeing (Edwards & Steyn, 2008). Athletes in different playing positions within team sport showed different statistical values in mental skills (Grobbelaar & Eloff, 2011; Grobbelaar, 2007). Top ranked players/successful groups showed better results than lower ranked players/less successful groups in sport psychological variables (Andrew et al., 2007; Kruger, 2010; Kruger et al., 2010).

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3. Negative Results: One research study could not confirm that athletes in different playing positions within team sports showed different statistical values in mental skills (Jooste et al., 2014).

3.2.5 Critique against Psychological Skills Training (PST) Research in Sport

This section will be discussed with a focus on the research context, methodology, participants and approach.

1. Context: Limited research has been conducted within the South African context. It is therefore unclear whether PST programme-based or skills-based approach would be effective in performance development of sport scientists in general and more specifically within South Africa.

2. Methodology: The majority of the research studies were done from a quantitative methodological approach, and a few from a mixed methodology approach. Therefore, limited research has been done using qualitative methodologies; the main goal of the research studies is to test how effective mental skills are, rather than to focus on how the participants experienced the programme.

3. Participants: The participants used in the studies were: rugby players, track athletes, dancers, gym members, a cricket player, swimmers, sport psychologists, netball players, coaches, soccer players and hockey players. Based on my literature search, it seems that there has been no published research using sport scientists as participants. Therefore, there is limited knowledge regarding PST approaches with sport scientists.

4. Approach: Only four of the studies used a PST programme-based approach. Therefore, there are limited studies focusing on PST programme-based approaches in the South African context. The research studies did not indicate whether a PST programme-based approach or PST skills-based approach was more successful in enhancing performance. Therefore, research is needed to make the comparison.

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Conclusion

After the presentation of this chapter, the reader should have a comprehensible understanding regarding CBT with specific reference to its origin and theory, as well as the PST with reference to its origin, theory, critique and practices. The reader should also have an indication of the research done with the PST, focusing on the context, methodology, participants, approach, findings and critique against PST.

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CHAPTER 4
MINDFULNESS-ACCEPTANCE-COMMITMENT (MAC) IN SPORT

Introduction

The purpose of this chapter is to provide an overview of ACT, as well as the MAC approach to performance development in sport. I shall discuss mindfulness and ACT due to the fact that the MAC approach has its origins in the phenomenon of Mindfulness, as well as ACT. The MAC approach is an alternative approach to PST regarding performance development in sport psychology and has emerged over the past decade. This chapter will look into the origin and theory of Mindfulness and ACT, as well as the origin, theory and psychological practices of the MAC approach. Previous research pertaining to the MAC approach to performance development in sport psychology will be critically reviewed, and the limitations of the MAC approach will be addressed.

4.1 MINDFULNESS

4.1.1 Origin of Mindfulness

4.1.1.1 Origin in Eastern Philosophy

Mindfulness, as a state of moment to moment awareness, stems from Eastern religion and philosophy beliefs and has been in use for over 2500 years in Buddhist practices, although mindfulness is still relatively new to Western psychology. Buddhism initiated in Northern India and mindfulness takes center stage in meditation practices within Buddhism. Mindfulness is not only used in meditation practices, but can rather be seen as a way-of-living. The meditation practices in Eastern religion can be seen as a guideline of how individuals can apply mindfulness in their daily lives. This tradition is now moving to the Western culture and is being employed by many psychologists for therapeutic purposes (Brown & Ryan, 2003; Davis, 2012; Kabat-Zinn, 2003; Williams & Kabat-Zinn, 2011).

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4.1.1.2 Origin in Western Psychology

Mindfulness has made its mark in the modern era and is being incorporated into the field of Western Psychology. When referring to therapeutic interventions, mindfulness is part of Mindfulness-based Stress Reduction (MBSR), Mindfulness-Based Cognitive Therapy (MBCT), Dialectic Behavior Therapy (DBT) and ACT. Mindfulness is specifically used in these therapeutic interventions to treat pain, stress, anxiety, depression, substance abuse and eating disorders. These treatments are grounded in the third wave behavioral therapy, as discussed in Chapter 3. During the therapeutic interventions mindfulness is used as a way to promote the development of non-judging awareness of bodily sensations, internal experiences (cognitions and emotions) and external stimuli (Davis, 2012; Gardner & Moore, 2004a; Hasker, 2010; Kabat-Zinn, 2003; Kaufman et., 2009; Schwanhausser, 2009; Segal, Williams, & Teasdale, 2002; Williams & Kabat-Zinn, 2011).

4.1.2 Theory of Mindfulness

Mindfulness has been defined as “paying attention in a particular way; on purpose, in the present and non-judgementally” (Kabat-Zinn, 1994, p 4). When people’s minds and bodies are in the same place at the same time, it can be concluded that they are mindful (Gardner & Moore, 2006).

Mindfulness makes use of meditation to assist people to become aware of their bodily sensations, internal experiences and external stimuli in a non-judgmental way (Brown & Ryan, 2003; Davis, 2012; Kabat-Zinn, 1994). The aim of meditation within Buddhist spiritual practices and Eastern philosophical traditions is to pay attention to a particular object. Mindfulness meditation in Western Psychology aims to pay attention to the awareness of bodily sensations, internal experiences and external stimuli without the need to judge, change or control the experience (Lutz, Slagter, Dunne, & Davidson, 2008).

Bishop, Lau, Shapiro, Carlson, and Alexander (2004) proposed mindfulness as a state of consciousness involving two important components, namely (1) mindful attention and (2) mindful awareness of experiences in the present moment. On the one hand, mindful awareness is the ability to become aware and notice bodily sensations, internal experiences and external stimuli as natural occurrences. By being mindfully aware, the athlete does not need to change or control these natural occurrences, but rather accepts them without judging them. On the other hand, mindful attention is the ability to pay attention to a specific task without letting bodily sensations, internal experiences and/or

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external stimuli influence people's ability to keep full attention (Davis, 2012; Gardner & Moore, 2004a, 2006, 2007).

By being mindful an individual becomes aware of bodily sensations, internal experiences and external stimuli, but does not judge whether these conditions are positive (good) or negative (bad). Instead of the individual trying to control, change or reduce bodily sensations, internal experiences and external stimuli, they view them as natural occurrences within human life. Mindfulness can be seen as an alternative approach to control-based approaches in therapy (Hasker, 2010).

4.2 ACCEPTANCE-COMMITMENT THERAPY (ACT)

4.2.1 Origin of Acceptance-Commitment Therapy (ACT)

ACT is grounded in the third wave behavioral therapy. ACT was developed by S. Hayes in 1986. ACT is developed within a pragmatic philosophy known as functional contextualism. ACT is different from traditional CBT in that its focus is not on controlling and changing bodily sensations, internal experiences and external stimuli, but rather noticing and accepting them. (Harris, 2006; Hayes & Strosahl, 2004; Öst, 2008).

Acceptance based approaches are specifically used in therapeutic interventions to treat conditions such as depression, stress, psychosis, pain, substance abuse and eating disorders. During the therapeutic interventions, ACT assumes that human language creates psychological suffering, as language becomes enmeshed with real events; as a result of this the language and/or events are responded to as equivalent. ACT incorporates the Relational Frame Theory (RFT) to increase the understanding of the role that language and cognition plays. RFT makes the assumption that language and cognitions are based on relational frames, and that this can have an effect on the way that an individual will act in a specific scenario. The ACT approach includes acceptance and mindfulness-based interventions to assist people to develop a fresh relationship with complicated bodily sensations, internal experiences and external stimuli, and in doing so they enhance their psychological health (Gardner & Moore, 2010; Harris, 2006; Hasker, 2010; Hayes, Luoma, Bond, Masuda, & Lillis, 2006; Hayes et al., 1999; Hofmann & Asmundson, 2008; Kaufman et al., 2009).

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4.2.2 Theory of Acceptance-Commitment Therapy (ACT)

ACT aims to promote the acceptance of unwanted bodily sensations, internal experiences and external stimuli, and therefore discourages avoidance strategies. Avoidance strategies refer to reluctant actions as a means to eliminate any experience of negative or discomforting bodily sensations, internal experiences and external stimuli. Research suggests that individuals, who display high levels of avoidance strategies, are more prone to use strategies to control, eliminate or change unwanted experiences, and this usually results in a counterproductive outcome (Hasker, 2010; Hayes et al., 2006; Hofmann & Asmundson, 2008).

ACT also aims to find strategies in order to encourage high-quality living conditions by means of psychological flexibility (Hayes et al., 2006; Hofmann & Asmundson, 2008). Psychological flexibility refers to the ability to stay placate in different contents, accept experiences in its pure form, be conscious in the present moment, live a valued driven life and be committed to follow ones values. By means of psychological flexibility, an individual has the ability to live a valued driven life and can prevail over psychological obstacles through defusion and acceptance and can handle daily obstacles immediately (Hasker, 2010; Hayes et al., 2006; Hofmann & Asmundson, 2008).

To summarize, we can conclude that ACT aims to assist individuals to experience human life while encountering unpleasant bodily sensations, internal experiences and external stimuli by means of accepting them as natural occurrences (Hayes, 2004; Hayes & Strosahl, 2004).

4.3 MINDFULNESS-ACCEPTANCE-COMMITMENT (MAC) IN SPORT

4.3.1 Origin of Mindfulness-Acceptance-Commitment (MAC) in Sport

In response to the effectiveness of the PST approach not being supported by ongoing research, the MAC approach to performance development originated and was developed by F. Gardner and Z. Moore, two clinical sport psychologists from the United States of America (USA)(Gardner & Moore, 2004a, 2004b; 2006). With their training and knowledge in clinical psychology they developed a new approach to sport psychology, namely the MAC approach to performance development, in which they applied clinical models from clinical psychology to the sport context so that athletes can achieve optimal performance. The MAC-based approach to performance development is an incorporation and adjustment from the clinical models of ACT (Hayes, Strosahl, & Wilson, 1999) and MBCT (Segal,

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Williams, & Teasdale, 2002) for use with an athletic population. This integrated approach is based on the assumption that focus of attention on performance-related cues will lead to enhanced performance, regardless of bodily sensations, internal experiences and external stimuli (Gardner & Moore, 2004a, 2006, 2007; Moore, 2009)

Gardner and Moore (2004a, 2006, 2007, 2010) combined and incorporated some elements of mindfulness and acceptance-commitment interventions to develop a sport specific intervention, namely the MAC approach for performance development.

The first published version of the MAC was structured into an eight session format which was divided into five distinct intervention phases, namely (Gardner & Moore, 2004a):

1. Psycho-educational Phase
2. Mindfulness Phase
3. Values Identification and Commitment Phase
4. Acceptance Phase
5. Integration and Practice Phase

This MAC programme revealed different outcomes for participants who were introduced to the modules. Empirical data suggested that the differences were based on the absence or presence of subclinical psychological barriers. This MAC programme was fixed in its eight session format and did not leave space for flexibility. From these concerns, it was decided to modify the fixed eight MAC programme to a flexible seven module programme. The modified seven module MAC programmes' structure is still the same as the eight session programme, but it is more flexible in the sense that it can be adjusted to the subclinical psychological barriers of the clients. The modified seven module MAC programme was published in 2007, and empirical evidence support the effectiveness of the seven module MAC programme for performance development in athletes (Gardner & Moore, 2004a, 2006, 2007; Kaufman et al., 2009; Moore, 2009; Wolanin, 2004). The seven module MAC programme is a step-by-step programme with seven modules, namely:

1. Preparing the Client with Psycho-education
2. Introducing Mindfulness and Cognitive Defusion
3. Introducing Values and Value Driven Behaviour
4. Introducing Acceptance

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5. Introducing Commitment
6. Skill Consolidation and Poise: Combining Mindfulness, Acceptance and Commitment
7. Maintaining and Enhancing Mindfulness, Acceptance and Commitment

The MAC programme that was presented in this research study was adapted to be presented as a one-day experiential learning workshop.

4.3.2 Theory of Mindfulness-Acceptance-Commitment (MAC) in Sport

The MAC approach proposes that an athlete can reach optimal performance in the presence of discomfort. This approach stands in contrast to the PST approach which proposes that an athlete has to be without discomfort to reach optimal performance. The MAC approach enhances the ability of the athlete to function in the service of performance values, despite discomforts which may be brought on by bodily sensations, internal experiences and external stimuli so that they can reach peak performance (Hasker 2010; Schwanhausser, 2009). The MAC approach allows the athlete's skills and abilities to emerge automatically in the presence of discomforts, either from bodily sensations, internal experiences and external experiences, with their minds being focused on the task at hand. The goal with the MAC approach to performance development is for the athletes to practice (1) mindful attention (2) through non judging acceptance of discomforts, either from bodily sensations, internal experiences and external stimuli and (3) to commitment to their values. These are the 3 main components that make up the MAC approach and are being introduced in the form of a step-by-step programme (Gardner & Moore, 2004a, 2006, 2007).

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The fundamental components of Mindfulness-Acceptance-Commitment are illustrated in Figure 4.1 and will be discussed in more detail below.

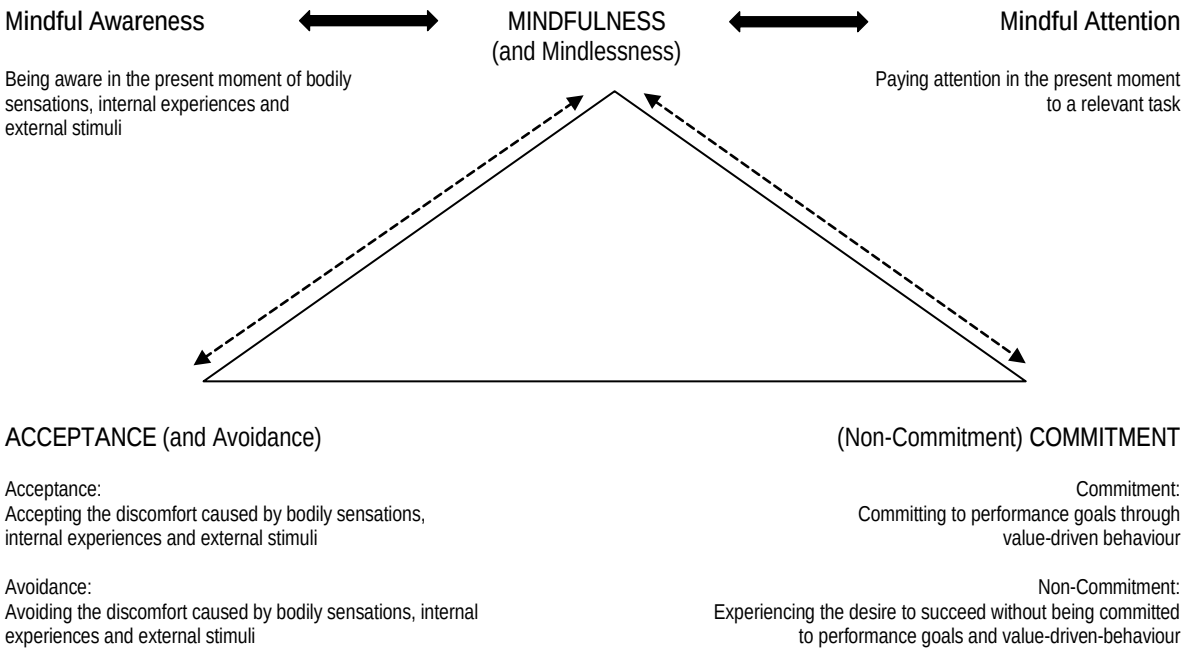

Figure 4.1 The Mindfulness-Acceptance-Commitment (MAC) Approach

4.3.3 Practices of Mindfulness-Acceptance-Commitment (MAC) in Sport

4.3.3.1 Mindfulness versus Mindlessness

1. Mindfulness

Mindfulness has been defined as “paying attention in a particular way; on purpose, in the present and non-judgementally” (Kabat-Zinn, 1994, p 4). Mindfulness as a state of consciousness involves two important components, namely mindful attention and mindful awareness of experiences in the present moment. Mindful awareness refers to the ability of the athlete to become aware of and notice bodily sensations, internal experiences and external stimuli as natural occurrences without the need to change or control them, but rather accept them without judgment. Mindful attention refers to the ability of the athlete to pay attention to a specific task without letting discomforts such as bodily sensations, internal distractors or external distractors influence his/her ability to keep their full attention. The aforesaid occurs when an athlete’s mind and body are in the same place at the same time, and this is indicative that the athlete is mindful. Mindfulness is being portrayed as a flexible state of mind in which

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an athlete actively pays attention to the present moment and notices new things in a non-judgmental manner (Belna, 2008; Bernier et al., 2009; Brown & Ryan, 2003; De Petrillo, Kaufman, Glass, & Arnkoff, 2009; Gardner & Moore, 2004a, 2006, 2007; Gooding & Gardner, 2009; Kabat-Zinn, 2003).

2. Mindlessness

Mindlessness is the opposite of mindfulness. Mindlessness is when an athlete's body and mind are not in the same place at the same time. Mindlessness can be seen as a normal state, but may be detrimental to the athlete's performance. When certain behaviors become a habit, the athlete is more prone to be mindless because he/she goes through the same routine without paying attention or being aware of what is happening in the present moment (Gardner & Moore, 2006).

4.3.3.2 Acceptance versus Avoidance

When athletes are mindfully aware of bodily sensations, internal experiences and external stimuli, they can address it by either avoiding or accepting this awareness (Hayes et al., 2006). Accepting this awareness means that the athlete does not dwell on bodily sensations, internal experiences and external stimuli, but rather recognizes it without any bias. Avoidance means that the athlete would try to stay away from bodily sensations, internal experiences and external stimuli by either changing or controlling them.

1. Acceptance

Acceptance is a moment by moment process whereby athletes become aware of bodily sensations, internal experiences and external stimuli and accept the discomforts in a non-judgmental manner. Bodily sensations, internal experiences and external stimuli will always be present, as these factors are natural occurring events in every human beings life. If athletes learn to accept these discomforts, they will come to the realization that there is no need to control, reduce, eliminate or reject any of these discomforts. This does not mean that athletes need to accept unwanted life circumstances, rather that they need to be willing to experience discomforts in the service of pursuing their performance related values that are personally meaningful to them (Fletcher & Hayes, 2005; Gardner & Moore, 2004a, 2006, 2007, 2010; Hayes et al., 2006; Hayes & Strosahl, 2004).

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2. Avoidance

Avoidance is the process whereby athletes try to control or reduce bodily sensations, internal experiences and external stimuli. The action of avoidance can either be quite obvious, for example an athlete may avoid a certain exercise due to a dislike or previous negative experiences, or it can be a less obvious action also known as subtle avoidance strategies. However, the main reason for these actions is short term comfort. Short term comfort occurs when athletes experience some kind of relief for a while from personal discomfort. These patterns of behaviour often interfere with the development of necessary skills, e.g. practice and preparation and actual competitive performance. Long held avoidance strategies can be very difficult to break, so if an athlete continues with this behaviour it can be detrimental to their sport. This stands in contrast to acceptance, as acceptance leads to long term benefit, in other words what is best for the athlete's career and life in the future (Gardner & Moore, 2004a, 2007, 2010; Hasker, 2010; Schwanhausser, 2009).

4.3.3.3 Commitment versus Non-Commitment

1. Commitment

Commitment increases athletes' mindful-attention. When athletes choose to act in the service of their values, it enables them to practice mindful-attention (paying attention to the task at hand). In sport, athletes' bodies will constantly be pushed to the limit. When athletes are mindful and choose to accept these discomforts in the service of their values, it can be seen as commitment (Gardner & Moore, 2004a, 2007, 2010).

When athletes have reached a point where they can perform to their full ability while still experiencing discomforts from bodily sensations, internal experiences and external stimuli and fully commit to what is important, i.e. to reach optimal performance, that is called poise. By accepting challenges and full commitment through the use of values, athletes open the door to reach success and optimal performance (Gardner & Moore, 2004a, 2007, 2010).

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2. Non-Commitment

It is proposed that non-commitment is basically a desire to reach a specific goal, but usually is not supported by action in order to reach the goal. Many individuals want to perform better in different scenarios, but are not committed to do so. There are, however, less people who are actually committed to doing the things necessary to perform better. It is imperative for athletes to be motivated, as it creates a pathway to success. However, motivation cannot stand independently to reach optimal performance; commitment needs to be present, as it transforms motivation into action (Gardner & Moore, 2004a, 2006).

4.3.4 Limitations of Mindfulness-Acceptance-Commitment (MAC) in Sport

MAC studies focus mainly on athletes within different sport fields, for example swimming, running (long distance and track and field) basketball, baseball, lacrosse, soccer, golf, archery, taekwondo, Malay martial arts, tenpin bowling, rugby, dragon boating, diving, volleyball and hockey (Bernier et al., 2009; De Petrillo et al., 2009; Gooding & Gardner, 2009; Hasker, 2010; Kaufman et al., 2009; Kee & Wang, 2008; Schwanhausser, 2009; Thompson et al., 2011; Wolanin & Schwanhausser, 2010). This can be seen as a limitation in the research within the MAC approach, as it includes no other important role players (e.g. coaches, parents and the multi-disciplinary team which includes dieticians, doctors, sport scientists, physiotherapists, biokineticists and biomechanical analysts) as participants within the sport community. In their research Gardner and Moore (2012) concluded that sport psychology researchers expand their research by utilizing multiple sports and larger sample sizes. From this notion, it is clear that the MAC approach embodies an individualistic perspective, as the focus on other important role players within the athletes' environment is being excluded (see Chapter 2). My study will employ an ecological perspective on the sport community by including sport scientists as participants.

The MAC interventions used in the research studies all followed different programmes. The programmes included an adapted MAC programme (Bernier et al., 2009) seven module MAC programme (Hasker, 2010; Schwanhausser, 2009; Wolanin & Schwanhausser, 2010) and programmes based on mindfulness training (De Petrillo et al., 2009; Gooding & Gardner, 2009; Kaufman et al., 2009; Kee & Wang, 2008; Thompson et al., 2011). The majority of the studies focus on mindfulness training in order to enhance the athletes' performance. This can be seen as a limitation, as acceptance and commitment that form part of the MAC approach are being excluded in some of the studies. This can lead to confusion, as athletes and coaches may be under the impression that certain components of the

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MAC approach (i.e. mindfulness, acceptance and commitment) are more responsible for performance development, and this may lead to uncertainty regarding the MAC approach's effectiveness.

Gardner and Moore (2012) recognized that athletes have to adhere to training programmes which limit the time that researchers can spend with athletes. This shortcoming can lead to some uncertainty as to how many (total hours and number of sessions) MAC sessions are required to see performance outcomes. This is also relevant within the current study, as sport scientists also had to adhere to their working programmes. This meant that I had to modify the MAC programme so that it could fit in with the sport scientists' schedules. This is explained in detail in Chapter 5. Gardner and Moore (2012) also found that the skill of maintaining mindful attention can become a habit, meaning that it requires minimal effort to reach and maintain a state of being mindful. However, research findings cannot confirm how much mindfulness practice is needed to ensure that mindfulness becomes a skill where little effort is needed.

4.3.5 Research on Mindfulness-Acceptance-Commitment (MAC) in Sport

As the MAC approach to performance development has recently been developed and is still in its infancy, it seems as if there is limited, but growing research in this field. In this section, I shall give a brief overview of the research that has been done on the MAC approach by referring to the context, methodology, participants, approach and findings.

4.3.5.1 Research Context

Research on the MAC approach has been done in several countries, namely the USA (De Petrillo et al., 2009; Gooding & Gardner, 2009; Hasker, 2010; Kaufman et al., 2009; Schwanhausser, 2009; Thompson et al., 2011; Wolanin & Schwanhausser, 2010), Europe (France)(Bernier et al., 2009), as well as Asia (Singapore)(Kee & Wang, 2008). South Africa is therefore a unique platform where MAC can be researched.

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4.3.5.2 Research Methodology

The primary methodological approach which has been followed in most of the MAC research studies has been a quantitative methodology (De Petrillo et al., 2009; Gooding & Gardner, 2009; Hasker, 2010; Kaufman et al., 2009; Kee & Wang, 2008; Thompson et al., 2011; Wolanin & Schwanhausser, 2010). One study employed a qualitative methodology (Schwanhausser, 2009), while another study used a mixed method approach (Bernier et al., 2009).

Quantitative research has been the dominant research approach in sport psychology over the years, which has created a call for a more diverse way of conducting research. From the late 1990's and early 2000's there has been a great demand for qualitative research in sport psychology such as narrative research (Smith & Sparkes, 2009) and phenomenological research (Eklund, Jeffery, Dobersek & Cho, 2011). Qualitative research is slowly making its mark in the field of sport psychology, and my research study will fall within the qualitative research approach to focus on athletes' subjective experience as a way of collecting data. My study will thus aid in the development of more qualitative research, and the MAC is a useful tool to promote personal growth within the athletes, as well as aid in their performance development.

4.3.5.3 Research Participants

Participants in research on the MAC approach have been collegiate athletes (Gooding & Gardner, 2009; Hasker, 2010; Kee & Wang, 2008; Wolanin & Schwanhausser, 2010), recreational athletes (De Petrillo et al., 2009; Kaufman et al., 2009; Thompson et al., 2011) and elite athletes (Bernier et al., 2009; Schwanhausser, 2009). With reference to gender, only one study used females exclusively (Wolanin & Schwanhausser, 2010), two studies used males exclusively (Gooding & Gardner, 2009; Schwanhausser, 2009), and the rest of the MAC studies included participants from both genders (Bernier et al., 2009; De Petrillo et al., 2009; Hasker, 2010; Kaufman et al., 2009; Kee & Wang, 2008; Thompson et al., 2011).

Thus, the participants in the above mentioned studies are mainly athletes, with no focus on other role players (e.g., coaches, parents, sport scientists) in the sport community. This can be seen as a limitation in the research, as MAC employs an individualistic perspective. The current research study will address this limitation by employing an ecological perspective on the sport community, as it uses sport scientists as research participants. This is addressed in Chapter 2. The current study will also

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focus mainly on females, as the demographic ratio showed to be overwhelming female sport scientists at the hpc, and they all adhered to the inclusion criteria of my selection criteria (see Chapter 5).

4.3.5.4 Research Approach

Research on the MAC approach to performance development has been done within psychology in general, and sport psychology specifically (Bernier et al., 2009; De Petrillo et al., 2009; Gooding & Gardner, 2009; Hasker, 2010; Kaufman et al., 2009; Kee & Wang, 2008; Thompson et al., 2011; Schwanhausser, 2009; Wolanin & Schwanhausser, 2010).

This study is done from the discipline of sport psychology. It will therefore contribute to growing research on the MAC approach in the field of sport psychology.

4.3.5.5 Research Findings

The research findings will be discussed in terms of positive results, mixed results and negative results.

1. Positive Results: Most of the studies reviewed concluded that the MAC approach was an effective building block for performance development (Bernier et al., 2009; Gooding & Gardner, 2009; Kee & Wang, 2008; Thompson et al., 2011; Schwanhausser, 2009; Wolanin & Schwanhausser, 2010).

2. Mixed Results: Two studies reviewed concluded that the MAC approach may not be an effective building block for performance development. The two studies used Mindful Sport Performance Enhancement (MSPE) to increase mindfulness in order to enhance performance. In both the studies MSPE had an effect on mindfulness, but did not enhance athletic performances (De Petrillo et al., 2009; Kaufman et al., 2009).

3. Negative Results: One study indicated that when a MAC group was compared to a mental training group, there were no significant increases in athletic performance. Therefore, this questions the applicability and utility of a MAC programme (Hasker, 2010).

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4.4 PERFORMANCE DEVELOPMENT FOR SPORT SCIENTISTS: A MINDFULNESS-ACCEPTANCE-COMMITMENT (MAC) APPROACH

I will use the more modern MAC approach with the sport scientists for my research study instead of the PST approach. The reason for using the MAC approach is because my research study forms part of a bigger research project, namely "Performance development in sport: A Mindful-Acceptance-Commitment (MAC) Approach", and the fundamentals of the MAC approach are more appealing to me than that of the PST approach. PST, with its philosophy to perform without discomfort, seems almost impossible to achieve. I find that performing with discomfort is more easily attainable and by accepting certain things in life is much more beneficial than ignoring or changing them, as this can cause a counterproductive outcome.

The MAC programme in my research is used as a guide to teach sport scientists to live a life that contains the components of mindfulness, acceptance and commitment, and it teaches them to apply this to the athletes that they work with. Being able to apply the MAC principles to athletes enhances the athlete-sport scientist relationship. This can be seen as a movement away from the individualistic perspective where the main focus is on the athlete-sport psychologist/sport counsellor relationship, and therefore this study embodies an ecological perspective that includes more role players within the sport community.

The MAC approach makes use of values; values are not always present in the sport environment that we are exposed to, especially if one looks at the use of performance development drugs, cheating and match fixing. However, values as opposed to mental skills as presented by PST seem more easily attainable, as values form part of a person's behavioral decisions. Living a valued life will enhance the likelihood that a person's goals will be attained. Mental skills are guidelines that tell people what to do and how to do it, whereby values become a lifestyle that a person lives by. I find this principle more appealing.

The MAC approach is like a practical manual which can be followed in everyday life and specifically in a sport scientist's life who works with athletes on a regular basis. As the MAC approach is not fixed to sport, but can be transferred to many areas in a person's life, I have chosen the MAC approach for my research study.

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Conclusion

After the presentation of this chapter the reader should have a comprehensible understanding regarding Mindfulness, ACT and MAC with specific reference to their origin and theory, as well as the practices of MAC. The reader should also have a precise indication of the research done with the MAC, as well as limitations and critique against MAC. Lastly, the reader should be familiar with the reasons for selecting MAC as the core of this study.

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CHAPTER 5
RESEARCH INQUIRY

Introduction

The purpose of this chapter is to provide an overview of the methodology that was used in this study. This research is situated within a qualitative research paradigm with relativist ontology, an emic epistemology and an Interpretive Phenomenological Analysis (IPA) methodology. This chapter will look into the research context and information regarding the participants. The Experiential Learning (EL) process of David Kolb (Kolb, 1984; Law, Ireland, & Hussain, 2007) was used as research design. IPA is the method of data analysis for this study and will also be discussed. Thereafter, factors that contribute to the quality of the research along with ethical guidelines will be discussed.

4.5 CONTEXT

4.5.1 Research Context

The research context of my project was the hpc at the UP. The hpc is Southern Africa's first elite one-stop sports facility. The ISR is situated at the hpc. The ISR is staffed with highly qualified sport scientists and biokineticists. The ISR offers specialist sport specific testing, strength and conditioning, monitoring, programming and sport specific rehabilitation. These services are provided to the TuksSport High School students, UP students, the general public, national federations and elite athletes (University of Pretoria [UP], 2015a). The ISR is where the research participants were selected, where the research programme was facilitated and where the interviews took place. The hpc was seen as an appropriate venue, as the participants were accustomed to the settings. Written consent was granted by Mr. T. Sutcliffe, the Chief Executive Officer (CEO) of hpc, Dr. M. Human, the resident sport psychologist of the hpc and the late Prof. E. Krüger, the director of ISR (See Appendix A).

4.5.2 Academic Context

The academic context of my study was the Department of Psychology at the UP. My research project was executed within the requirements as stipulated by the Postgraduate Research and Ethics Committee of the Faculty of Humanities at the UP.

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4.6 PARTICIPANTS

This section addresses the way I went about selecting the participants for my study with specific reference to (1) the sampling method I used and (2) the sample criteria I included. This process was based on the principles of IPA which focuses on the personal experiences each participant within the particular sample group draws from the event (Smith & Osborn, 2003, 2007)

4.6.1 Sampling Method

Researchers using IPA usually make an effort to keep the research group small and homogenous by means of purposive sampling. It is suggested in IPA that the sample size is between three and six participants, as the main concern is quality and not quantity (Smith, Flowers, & Larken, 2009). If the sample group is small and homogeneous, the researcher obtains rich information which will enable him/her to conduct an in-depth study on the phenomenon of interest. I have used purposive sampling for my study, as this method allows the researcher to form his/her own opinion when selecting participants based on the goals of the research study (Babbie, 2005; Onwuegbuzie & Leech, 2007; Whitley, 2002).

At the time of the selection process of my study, Mr. L. Perry was the head of the sport scientists of the ISR at the hpc. He assisted me when the selection for participants for my study was done, as he was familiar with the sport scientist residing at the hpc. Accordingly, the participants that met the selection criteria (see 5.2.2) of my project were invited to participate in the study.

4.6.2 Sampling Criteria

When selecting participants, IPA suggests that the researcher tries to select a rather homogeneous sample (Smith et al., 2009). The participants for my study were selected on the following four criteria:

1. The participants must be qualified sport scientists.
2. The participants must be employed by the ISR as sport scientists.
3. The participants needed to be competent in English.
4. The participants needed to be female.

Although IPA suggests that participants “represent” a perspective rather than a population, I decided to include only females in my study (Smith et al., 2009). The reason for this was that my sample size was

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small. I could therefore be more selective about choosing my participants as a means to increase the homogeneity of my study. During the selection phase of my study, the ratio between the male sport scientists and female sport scientists at the hpc was 1:3. This indicates that the majority of sport scientists at the ISR at the hpc are females which led to the decision of selecting females as a means to make the group as uniform as possible.

4.6.3 Research Participants

The head (during my research study) of the sport scientists of the ISR at the hpc (Mr. L. Perry) and I approached specific participants that adhered to the selection requirements (5.2.2.), whereby they were asked to participate in my study on a voluntary basis. The research participants that agreed to participate all adhered to the selection requirements.

The sport scientists demographic information was as follows: All four participants were Caucasian. Two of the participants' nationality was South-African, one was Zimbabwean and one was Northern Irish. The participants had been employed by the ISR and had been working as sport scientists for an average of three years (R = 1.5-5 years). The average age of the sport scientists was twenty eight years (R = 26-31 years). The participants were involved in the following sport codes: Athletics, tennis, swimming and cricket.

4.7 DESIGN

4.7.1 Experiential Learning (EL)

The EL process was used as the design for this study. It is assumed that learning and experience goes hand in hand, as they are directly linked to each other. Therefore, it is important to use learning in conjunction with experience in order for participants to gain knowledge and new skills (Beard & Wilsons, 2013). Kolb defined learning as "the process whereby knowledge is created through the transformation of experience" (Kolb, 1984, p. 38). EL attempted to use its principles in the USA as a means to move away from formal learning where teachers present information in a didactic manner, to a more experience-based approach where students learn from experience by doing (Lewis & Williams, 1994). Learning by means of experience can be applied to individuals or within a group setting and shows to increase participants' commitment to the information and helps them to think more critically. The experience alone is not adequate enough for transformation, thus reflection and debriefing of the

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experience is of vital importance to increase the usefulness of EL. If reflection does not take place, the participant cannot learn from the experience. The knowledge gained through this process is not fixed to the academic setting, but can be transferred into real-world situations (Bower, 2013; Dees & Hall, 2012; Healy & Jenkins, 2000; Law et al., 2007).

Kolb (1984) identified four important stages that need to occur so that new knowledge and skills can be attained. The four stages are (1) concrete experience where the participant gets totally involved with the new experience, (2) reflective observation where the participant reflects and makes sense of the experience, (3) abstract conceptualization where the participant forms concepts that relate to his/her observations and (4) active experimentation where participants use what they have discovered to make decisions and solve problems. This four stage model works on two levels. The first level is the way in which participants understand and take in new information by means of the concrete experience and abstract conceptualization. The second level is the way in which participants transform information by means of reflective observation and active experimentation (Beard & Wilson, 2013; Groves, Bowd, & Smith, 2010; Healy & Jenkins, 2000; Kolb, 1984; Lewis & Williams, 1994; Turesky & Gallaghar, 2011). The design of this study is derived from Kolb's four stage model which is illustrated below in figure 5.1. The four stages of the current study are (1) creating the experience, (2) reflecting on the experience, (3) discovering from the experience and (4) applying the experience. The four stages and their implementation will be discussed in more detail below.

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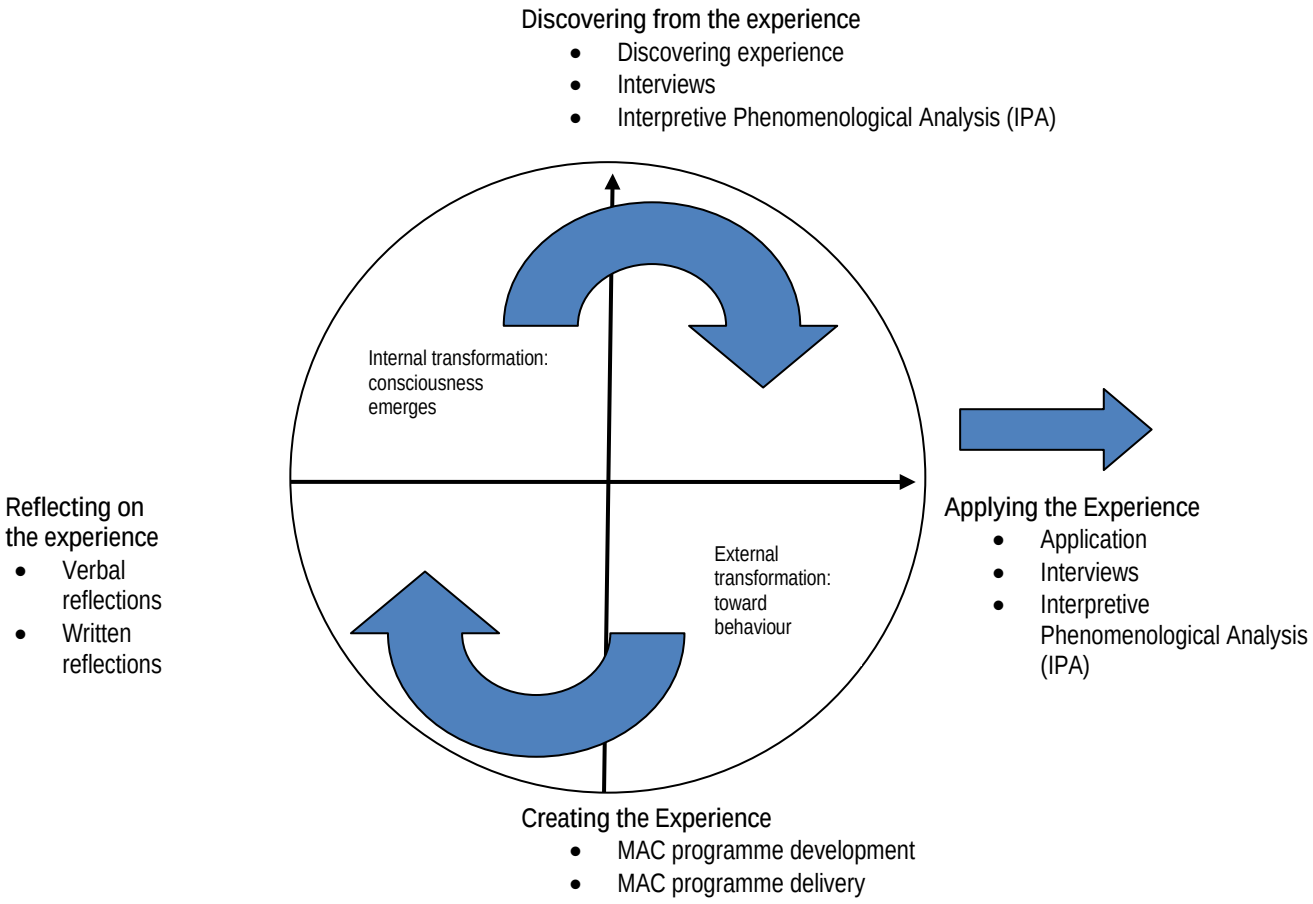

Figure 5.1 The learning wheel (adapted from Law et al., 2007)

Beard and Wilsons (2013) define experience as an action that links the participant with the new information. An experience is formed when participants engage actively without being biased to the new information. The way in which participants perceive new experiences are unique to them due to a variety of factors such as previous knowledge, emotions, personal needs and previous experiences. Experiences assist the participants to make sense of the new information according to their own personal experiences (Beard & Wilson, 2013; Groves, Bowd, & Smith, 2010; Healy & Jenkins, 2000; Kolb, 1984).

The presentation of the MAC programme was used to provide a performance development experience for the participants in this study. Below is an explanation of how the programme was (1) developed and (2) delivered according to the principles of EL in order to create an experience for the participants.

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5.3.2 Creating the Experience

5.3.2.1 Programme Development

I followed the guidelines of F. Gardner and Z. Moore's MAC programme and adapted it to be more sport science specific by means of including suitable activities, pictures, diagrams, figures, videos and descriptions (Gardner & Moore, 2004a, 2007). I also incorporated reflection questions and activities that aided the participants to be personally involved so that an experience could be created. The programme consisted of four phases. Below is a table that provides information on the four phases, along with the outline of each phase on how they were presented.

Table 1.1

Programme Development

Programme Phase	Phase Outline
Phase 1 Introduction: Sport psychology context in South Africa	MCS-SP Holistic view in Sport Psychology
Phase 2 Mindfulness Phase 3 Acceptance Phase 4 Commitment	Outcome Ice breaker Activities Theory Reflection Application

Phase one introduced the context of sport psychology in South Africa with specific reference to the MCS-SP and the two main approaches to performance development, namely PST and MAC. Phase 2, Phase 3 and Phase 4 focused on the three concepts of MAC individually (mindfulness, acceptance and commitment), which entailed a specific structure that was outlined as follows: outcomes, icebreaker, activities, theory, reflection and application. I will explain the different aspects of the outline briefly below.

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1. Outcomes: The outcomes section introduced the participants to the content of the phase and to what they could expect to discover, apply and transfer after the completion of the phase.
2. Icebreaker: The icebreaker section introduced activities experientially so that participants can become more familiar with each other and become engaged with the programme.
3. Activities: Activities were used to gain experiential knowledge of the phase.
4. Theory: The theory section served as theoretical knowledge of the phase through a process of EL, as well as using didactic instruction.
5. Reflection: During the reflection session, which is a written section, the participants reflect on their experiential knowledge that they gained through the process of experiential learning, as well as the theoretical knowledge that they gained through didactic instruction.
6. Application: This section was also a written section, where participants reflect on how they anticipate applying their experiential and theoretical knowledge as a sport scientist.

5.3.2.2 Programme Presentation

The programme was presented in one of the boardrooms of the hpc during the course of a whole day (eight hours), which is shorter than the original MAC programme suggests. The reason for the shorter version was due to time limitations and tight schedules that the sport scientists had to adhere to. This provided me with limited time to present the MAC programme.

I was the only presenter of the MAC programme that was presented to the four sport scientists. In the programme delivery I fulfilled the role of the facilitator of the MAC programme (5.5.4). The sport scientists were provided with a printed copy of the MAC workbook on which they could write and then take along with them after the workshop. I facilitated the workshop with additional sources such as a PowerPoint presentation that was based on the MAC workbook. The MAC workbook incorporated the principles of EL such as reflection and activities, so that the sport scientist could be personally involved in the discovering event.

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5.3.3 Reflecting on the Experience

One very important step of EL is for reflection to take place, so that participants can learn from their own experiences. For reflection to take place, participants need to take a step back and review what they have experienced, either verbally or in a written format. If reflection does not take place, it would not be possible to learn from the experience, as participants will continue to experience the world with the same cognitions and emotions. Reflection can take place either in the situation where the event took place or away from the event (Groves, Bowd, & Smith, 2010; Kolb, 1984; Law et al., 2007; Lewis & Williams, 1994).

Throughout the MAC programme, participants were given the opportunity to verbally reflect on their experiences of what they discovered, and then after the completion of each phase, there was space in the back of the manuals where participants could reflect on their discovering experience in a written format. Both the verbal and written reflections took place where the MAC programme was presented. The participants were encouraged to keep a diary to reflect on their experiences after the MAC programme took place; this written reflection took place away from where the MAC programme was presented. The reflection stage encouraged the participants to think about what they had discovered, and then how they could possibly use it in future with their work and life.

With the consent of the participants, I made copies of their written reflections, and they emailed their diary entries to me on a regular basis so that I could set up semi-structured interviews that were based on their reflections.

5.3.4 Discovering from the Experience

Turesky and Gallagher (2011) propose that the core of learning refers to how participants process and reflect on an experience and the meaning they draw from it. This stage of EL focuses on the meaning that participants draw from the experience. For participants to form meanings, they first need to make sense of the experience. How the participants make sense of their experience will be influenced by factors such as the participant's beliefs, values, culture and assumptions. Participants create meaning when they form new concepts according to how they have interpreted the experiences (Groves et al., 2010; Kolb, 1984).

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In order to incorporate this phase in my study, I created an opportunity for the sport scientists to express the meaning that they created from their subjective experience of their participation in the MAC programme. This was done by means of a semi-structured interview. The method that was used to create meaning from the interviews was IPA which I will discuss in more detail below.

5.3.4.1 Interpretive Phenomenological Analysis (IPA)

IPA is a qualitative approach that aims to try and understand the unique contextual interpretations of people's subjective experiences of a phenomenon. The research material is predominantly gathered through semi-structured interviews between the researcher and the participants. The outcome of the study allows for the researcher to know more about people's interpretations of their subjective experiences of a phenomenon (Finlay, 2009; Ponterotto, 2005; Smith et al., 2009; Smith & Osborn, 2003, Wojnar & Swanson, 2007).

Semi-structured interviews were conducted with the sport scientists one week after the presentation of the MAC programme. The reason for these interviews was to discover more about the meaning that the sport scientists created of the MAC programme, and to gather data. The interviews took place at the hpc, as the sport scientists were familiar with the setting. It was easily accessible and made them feel comfortable. This is in line with the requirements of IPA which suggests that the setting needs to be familiar. Each sport scientists' interview was approximately one hour long, as IPA suggests that the interview lasts approximately forty five to ninety minutes (Smith et al., 2009). The sport scientists scheduled their appointments and were seen individually as suggested by the IPA. I distributed the semi-structured interview schedule a few days in advance to the actual interviews. The reason for this was so that the sport scientists had an idea of what they could expect so that they could be more comfortable with the process; this is supported by IPA, as it suggests that it is common to inform participants regarding the topics that will be addressed. It also gave them time to think about their experiences so that they could give a thorough description of their experiences (Smith et al., 2009). During the interviews, I used an audio recorder to record the interviews, as this increases the transcription accuracy and protects the participants' identities (Smith et al., 2009; Smith & Osborn, 2008).

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5.3.5 Applying the Experience

The final phase involves how the participants apply what they have discovered. Bower (2013) proposed that EL is the connection between what the participants have learned, and how they apply it to new challenges. Participants use what they have discovered through the process of reflection and evaluation of the experience to engage in new challenges. In this phase, the participants are actively involved to experiment with what they have discovered (Kolb, 1984; Law et al., 2007; Lewis & Williams, 1994).

The sport scientists in this study were actively involved to apply what they have discovered, as they applied what they have discovered to their profession and to athletes at the hpc. Semi-structured interviews were conducted approximately three months after the MAC programme to explore how the participants applied what they had discovered from the MAC programme.

Each sport scientist was thus involved in more than one interview, as multiple interviews can make it easier to write up the findings and help with the consistency of the research (the first interview was to gather data on what the participants had discovered from the experience, and a second interview was to gather data on the application of the experience) (Flowers, 2008). The facilitation of the interviews was done according to the principles of IPA as described in 5.3.4.1. Interpretive Phenomenology was further used as the research position to analyse the *Discovering from the Experience* phase and the *Applying the Experience* phase by means of (1) transcribing the interviews and (2) analysing the transcriptions. These concepts will be described in more detail below.

5.3.5.1 Transcribing the Interviews

The data that was gathered from the interviews in the *Discovering from the Experience* phase and the *Applying the Experience* phase was transcribed in order to become familiar with what the sport scientists had discovered, and how they had applied what they had learnt. The audio recordings of the interviews were used when I transcribed the interviews. I transcribed all the material (all the words that were spoken by me and the sport scientists) personally, as this gave me the opportunity to familiarise myself with the research material (Smith & Osborn, 2003; Wojnar & Swanson, 2007).

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5.3.5.2 Analysing the Transcriptions

The material that was produced through the semi-structured interviews and then transcribed was analysed by means of the IPA approach. I analysed one interview at a time in detail before I moved on to the next interview. The steps of IPA that were followed in this study will be described below (Smith & Osborn, 2008):

1.	Themes	The first step is to read the transcripts a few times so that the researcher can become familiar with the text. IPA also suggests at first that the material is read while listening to the audio recordings. Then notes need to be made on what was interesting or significant. The notes must include similarities, differences, echoes, amplifications and contradictions made in the text (Smith et al., 2009; Smith & Osborn, 2008).
2.	Connect	This step involves rereading the text to narrow down and make connections between emergent themes. After rereading the text it needs to be written down in order to try and make sense of the connections between the themes. Some themes may cluster together, and some may emerge as super-ordinate concepts (Smith & Osborn, 2008).
3.	Cases	Each participant's material is analysed separately. It is important to look for emerging new issues, as well as accounts that are similar and different between the participants. In this way the researcher respects convergences and divergences in the data. Once all the texts have been analysed, the researcher should finalise the super-ordinate themes and write them down. The data then needs to be prioritized and reduced (Smith & Osborn, 2008).
4.	Writing up	The last step in the IPA method of analysis is to write up the final statements of the participant's experiences. The themes are then translated into a narrative account (Smith & Osborn, 2008).

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5.4 QUALITY

I included a few methods to enhance the quality of my study which will be described in more detail below.

5.4.1 Journal

I recorded my views and understandings of the research process on a regular basis as this forms part of interpretative phenomenology (Finlay, 2009). I kept record of my own personal experiences, perceptions and interpretations about the research topics (Häggman-Laitila, 1999).

5.4.2 Supervision

To enhance the quality of my study, I was involved in supervision for my research project on a regular basis. During the supervision with my research supervisor (Prof. L.H. Human), my work was discussed with the aim to enhance the quality of my research (Hart & Crawford-Wright, 1999; Jones, Evans, & Mullen, 2007).

5.4.3 Peer supervision

To further enhance the quality of my study, I was part of a peer review group that consisted of two students enrolled for a Doctor of Philosophy degree (PhD) and three students enrolled for a Master of Arts (MA) (Counselling Psychology) degree. The review group had meetings on a regular basis to discuss literature and to review and critique each other's work (Hames, 2007; Hart & Crawford-Wright, 1999; Jones et al., 2007).

5.5 ETHICAL CONSIDERATIONS

There are some ethical considerations that were considered for this research project, and they will be discussed below.

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5.5.1 Permission

Permission to conduct the research was obtained from the Postgraduate and Ethics Committees in the Faculty of Humanities at the UP. Permission was also obtained from the hpc, as well as the ISR to conduct the research (See Appendix A).

5.5.2 Consent

Smith et al., (2009) highlight the importance of gaining consent (with regards to the data collection and the outcomes of the analysis) from participants that take part in a qualitative study, particularly IPA. In order to gain consent from participants, I conveyed all the necessary information concerning the research study to potential participants. They were given the choice to participate in the study voluntarily and free from coercion. I also made it clear to the participants that they could withdraw their participation at any point and without any negative consequences. The participants that indicated that they wanted to participate in the research were competent to give consent, and they signed the consent form (O'Donohue & Ferguson, 2003; Thomas & Hersen, 2011) (See Appendix B).

5.5.3 Privacy

I carefully considered the ethical aspects of the research study in accordance with the participants' right to privacy. The right to privacy entails that (1) the participants' anonymity is being protected, (2) they have the right to disclose information that they wish to and (3) the participants have the right to confidentiality. I will discuss these three principles in more detail below.

5.5.3.1 Anonymity

Smith et al., (2009) suggest that anonymity is one of the only things that qualitative researchers can offer to their participants. In order for me to protect the participants' confidentiality, I did not record their identities. I rather used code names as identifiers. To adhere to the ethical practices, I explained to the participants their right to anonymity in the research information document that I gave to them before the study commenced (Whitley, 2002) (See Appendix B).

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5.5.3.2 Disclosure

Participants had the right to keep particular information about themselves concealed and were not compelled in any way to reveal everything about themselves. I respected the sport scientists' right to disclosure throughout the research study. I explained this to them in the research information document that I gave to them before the study commenced (Thomas & Hersen, 2011; Whitley, 2002) (See Appendix B).

5.5.3.3 Confidentiality

The research participants had the right to privacy which I safeguarded by keeping the information provided by the participant in strict confidence. I respected the sport scientists' confidentially and used their code names within my supervision sessions and my diary entries. I also explained their right to confidentiality in the research information document and also highlighted that if the participants wished to withdraw from the research project, both the audio recordings and transcriptions would be destroyed. I gave this to them before the study commenced (Thomas & Hersen, 2011; Whitley, 2002) (See Appendix B).

5.5.4 Roles

Within my study, I had to fulfil more than one role. This is known as dual roles. Dual role relationships are explained as relationships where there are two or more clear-cut kinds of relationships with the same person (Hart & Crawford-Wright, 1999). The roles that I fulfilled were firstly, being the facilitator of the MAC-programme and secondly, also being the researcher who did the semi-structured interviews, transcriptions and analysis of the research material. The two roles I took on were linked to each other and not distinct from each other. To consider the ethical aspects of the dual roles and to eliminate any confusion the participants might experience regarding the dual roles, I explained it to the participants verbally, and I also addressed it in my research information and consent form (Finlay, 2009; Giorgi & Giorgi, 2003; Wojnar & Swanson, 2007) (See Appendix B).

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5.5.5 Support

Smith et al., (2009) suggest that the researcher advised the participants to obtain proper support if the participants may find interviews to be stressful or upsetting. Although this research study falls within a psycho-education process and not within the ambit of psychological counselling, I made provision for the participants who wished to explore their performance development experience individually to do this via the resident sport psychologist at the hpc (Dr. M. Human). This was offered to them free of charge (Chew-Graham, May, & Perry, 2002).

5.5.6 Storage

This study's research material will be stored for at least 15 years in the Department of Psychology at the UP for archival purposes.

5.6 PERSONAL REFLECTION

Reflecting on the research process, I can definitely say that there were times that I felt out of depth and unsure about what I was doing, but with the assistance of my supervisor, I could find support and carry out my research.

With regards to the presentation of the MAC workshop, I found it quite useful to make use of EL. I found this principle of discovering to be very interactive as participants engaged in discussions, and they showed high levels of interest by asking questions throughout the workshop. The participants seemed to enjoy the video clips and activities very much. This experience made me reflect on how beneficial EL can be in the way we teach psycho-educational topics to the athletes at the hpc.

One area in particular that I found challenging was to carry out the interviews. It was difficult for me to carry out the interviews, as I did not have any formal training or background regarding how to do interviews. I obtained my BSocSci (Hons)(Psychology) degree from UP in 2006 and during this time we were introduced to IPA. I did study the IPA process on conducting semi-structured interviews, but carrying out the interviews was very different from studying the principles. I was put at ease by the idea that with the semi-structured interview there is less structure, and thus the researcher and participant can engage in a discussion where questions can be modified (Smith & Osborn, 2003). This experience made me reflect on the way I can probe for information and be open to listen to the athletes' (at the

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hpc) experiences when I have to conduct sessions with them. It also made me reflect on how experience can enhance ones confidence in practice.

During the interviews, I was constantly aware of how I should ask the questions and what I should and should not do; I guess this will become less apparent the more comfortable one gets with the process. This made me reflect on the role that counsellors take on in sessions: They need to be self-aware, but also pay attention to the client at the same time. This will be relevant when I have to conduct sessions with athletes at the hpc in future.

Another area of concern was whether I had gained enough rich information to conduct a valuable study. During the interviews, it felt as though I could not get enough information from the participants, and that created some anxiety as to whether I would have enough data to work with. This concern was disregarded once I started with the process of transcribing the material, as it became apparent that I indeed had enough data to work with. I reflected on how my cognitions and emotions can influence the way I work with athletes during my work as a counsellor at the hpc. This highlighted how important it is to discuss cognitions and emotions with the supervisor in order to find support.

Conclusion

After the presentation of this chapter, the reader should have a comprehensible understanding regarding the research inquiry with specific reference to the context, the participants, the research design, research quality, ethical considerations and my personal reflection.

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CHAPTER 6
RESULTS
(Sport Scientist 1)

Introduction

The purpose of this chapter is to provide an overview of SS1's experience after attending the MAC programme. Her experiences will be discussed pertaining to mindfulness, acceptance and commitment with reference to what she discovered and how she applied it. In this chapter, the findings will be discussed with the purpose of addressing the research questions of this study (see Chapter 1).

6.1 MINDFULNESS

Mindfulness can assist in enhancing sport performance by (i) being in the here-and-now and (ii) focusing on the task (mindful attention), while (iii) transcending the awareness (mindful awareness) of discomforts caused by bodily sensations (bodily discomforts), internal experiences (internal discomforts (thoughts and feelings)) and external stimuli (external discomforts).

6.1.1 Discovering mindfulness (Phase 3)

6.1.1.1 *Discovering the **nature** of mindfulness*

SS1 became aware that the nature of mindfulness entails focussing on the task while being aware of, for example, external discomforts in the form of noises. She states (the indented sections are in each case the exact transcribed words of SS1. Where applicable, the transcribed text has been altered slightly to improve either readability or grammaticality, or both):

> It was easy in the beginning to focus when we were instructed to focus on something, but as soon as there were other things, like sounds or noises, then I started concentrating more on those than on what I was supposed to be focusing on. But then to know … they can be around, but I don't have to focus on them, I can still focus on the task at hand.

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6.1.1.2 *Discovering the **nature** of mindlessness*

SS1 employed the activity of driving a motor vehicle to illustrate her understanding of mindfulness and mindlessness. She states:

> I've just been aware of it lately that I would get to certain points, then I think how did I get here, or did I drive past that or I can't even remember. I do make a point of it to think about what I am doing, to make sure that I did notice cars that were behind me or I did notice the cars in front of me and not just drive.

6.1.2 Applying mindfulness (Phase 4)

6.1.2.1 *The **advantages** of applying mindfulness*

SS1 became aware that applying mindfulness had advantages in her daily sport science activities, as well as in her administrative duties.

The advantage of focussing on sport science activities: SS1 is of the opinion that applying mindfulness can assist her in being more focussed while practicing sport science with clients. She states:

> It's [to be mindful] important because we play a role in athletes and clients daily functioning through the sessions we have with them. So, to be focused on doing things correctly, doing techniques correctly, also listening to when they say this exercise may make them uncomfortable, you can redirect it and focus on what they are really there for.

SS1 also views the application of mindfulness as being to the advantage of her clients, as it can assist her moving from a "general working stance" to a more "focused working stance". She states:

> Previously I would let them do their exercise and ask them is it 'okay', or is it easy or not easy. Now I say to them do you feel it working at the specific place. In that way, I could also get better feedback.

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SS1 also experienced the advantage of applying mindfulness when working with groups. She also moved from a "general working stance" to a more "focused working stance", and she is of the opinion that it has yielded better results. She states:

> Previously, it had been more chaos. I would have demonstrated it and then irritate the group because they either didn't stick to the exercises or they cheated with the exercises. Now it's a lot more structured. I do get better results from sessions just because I give them things to focus on while doing an exercise by making them aware of what they are doing.

The advantage of focussing on administrative duties: SS1 came to the realization that applying mindfulness had an advantage, as it assisted her to be more focused on her administrative duties, which had the effect of completing administrative duties in advance. She states:

> I actually got the things done, like admin that was supposed to be done. I did exceptionally well. I managed to get ahead with my admin that allowed me to write peoples programs in the beginning of the week that I'm seeing on the Friday. So I had a lot more time to focus on what was needed to be done than to write it 10 minutes before they come.

6.1.2.2 *The **difficulties** in applying mindfulness*

SS1 also found it difficult to apply mindfulness in her work context, with specific reference to the aspects of time and clients.

The difficulty in relation to time while applying mindfulness: SS1 indicates that initially she found applying mindfulness difficult, but as time progressed, it became easier. She states:

> In the beginning it was very difficult to shift focus, or not to focus on certain things and really concentrate on what needed to be done. I found it easier in the last two months to actually get more focused on what needed to be done and how I am going to achieve it.

The difficulty in relation to various clients while applying mindfulness: SS1 became aware that she had difficulty in applying mindfulness to her various clients. She states:

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> It happened a lot, not more, when having to focus on different kinds of patients after different evaluations and how to focus on only achieving what I wanted to achieve out of that session.

SS1 then gives examples of the various types of clients that she has to work with. Shifting between them makes applying mindfulness difficult. She states:

> I have a 4 year old kid that's there because his muscle tone is undefined and he's a cello player. For him to not concentrate on the other million things around; the TV that's up in the lab, or the people walking in and out, or the colourful balls … it was difficult for him.
>
> Then for a person that is absolutely focused on their sport and they want to achieve. So they know why they must do these exercises. People that have direction in their lives like athletes that want to get back into the sporting environment; they need rehab, they need to get the sessions to be effective. Those people are normally the ones that benefit and it's a lot easier to transfer to them because they want to know more; they want to know how they can do the exercises better, or how they can benefit more.
>
> Then I get the elderly patients that can't even remember the exercise given to them 10 seconds before, so to then try and transfer it to them is horrible.

Besides the various clients such as children, athletes and elderly people, SS1 also experienced applying mindfulness when working with individuals easier as when working with groups. She states:

> It was just a lot easier with individuals because you can actually transfer it to them. In a group setting you don't always have the time to get to it. If there's a group of 20 of them, and 19 of them are really focused, and one is wondering off and not really putting thought into what he's doing, you don't have the time in a 45 min session to really get that guy back on track, so you'll rather just carry on with the others, or maybe try to get to that person afterwards.

6.2 ACCEPTANCE

Acceptance can assist in enhancing sport performance through accepting discomforts caused by bodily sensations (bodily discomforts), internal experiences (internal discomforts (thoughts and feelings)) and external stimuli (external discomforts) in a non-judgemental way.

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6.2.1 Discovering acceptance (Phase 3)

6.2.1.1 *Discovering the **nature** of acceptance*

SS1 discovered that despite having internal experiences, for example her emotions, she was able to accept them as part of the human condition. She did not need to deny them, nor fight them, nor did she have to react to them. She states:

> I do have emotions, but they don't have to play a role in my decision making. I can accept them and I can also decide not to react to them in a situation.

SS1 also realized that just as with internal experiences, external stimuli were part of life that she needed to accept. She did not need to deny their existence, or fight them, but needed to accept them, which would allow her to focus on the task. She states:

> I think to realize that it's okay for external distractions to be around, but to just keep on concentrating on what actually needs to be, what the goal is or what my task is what I'm busy doing.

6.2.1.2 *Discovering the **nature** of avoidance*

SS1 discovered that she has a tendency to focus on her negative thinking; what she has to do, otherwise she won't get things done. This contributes to her avoiding the task and also causes her to worry a lot. She states:

> I find it a lot in my work that when I'm thinking negatively, I think what I must not do, otherwise I won't get things done. I actually struggle to stick with what I have to do, then I worry too much.

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6.2.2 Applying acceptance (Phase 4)

6.2.2.1 *The **advantages** of applying acceptance*

SS1 realized that practicing acceptance had the advantage of allowing her to move on when things did not go according to plan. In the past, she remained hostage of her original plan when it did not work out, but applying acceptance allows her to move on to Plan B. She states:

> Previously, I would just get ticked off because they cancel, and then I'm not in the mood to do anything else because my mind wasn't set on doing anything else in that time. I'm supposed to see a patient, so I've written them a program and then they don't pitch, so you sit around waiting for the first 20 minutes for them to come, and then they eventually don't come; by the time you phone them there's half an hour left … When that happens, I try to immediately go to plan B to either start working on my masters, getting programs done, or follow up the clients.

6.2.2.2 *The **difficulties** in applying acceptance*

SS1 explained that she experienced difficulty in applying acceptance in relation to time and clients.

The difficulty in relation to time while applying acceptance: SS1 indicated that due to limited time she was not always able to transfer acceptance during her sport science sessions. She states:

> It's very difficult to play the psychological part from this side on, just because our time is so constrained, and normally they pitch up late and you normally have clients after that, you got an hour, do you really try to focus on getting them, motivating them all the time or do you try to at least get through the program so that they know what to do.

The difficulty in relation to various clients while applying acceptance: SS1 also found it difficult to apply acceptance, especially with athletes that had a negative attitude towards sport science sessions. However, she discovered that she had to have a different approach with different clients to deal with these difficulties. She states:

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> I think groups went better. Having cricket academy boys who were moaning because they had to get up. I just didn't give them the choice to really be negative about it because I went hard on them in a session so they kind of had to deal with it. This won't change; I have this session every morning at 07:00 so they are going to have to deal with it. So I think in a group setting having the harder approach towards them, and I think individuals more softening up, trying to motivate them.

6.3 COMMITMENT

Commitment can assist in enhancing sport performance by means of (i) performance goals and (ii) value-driven behaviour in pursuit of the performance goals, thereby transcending the awareness (mindful awareness) of discomforts caused by bodily sensations (bodily discomforts), internal experiences (internal discomforts (thoughts and feelings)) and external stimuli (external discomforts).

6.3.1 Discovering commitment (Phase 3)

6.3.1.1 *Discovering the **nature** of commitment*

SS1 discovered that by being committed through value-driven behaviour, she would be able to enhance her work performance, despite the absence of incentives. However, she believes that being committed can result in self-fulfilment, and it can create a legacy when she one day maybe moves on to another work setting. She states:

> When I think about commitment, most people would say that they are committed. I think that by being committed through my values, I shall actually be able to achieve more in my work. Through being value-driven, I shall get more out and be able to do more than what is required of me. Not that we get remunerated or we get extra hours work time money, but I suppose it's self-fulfilling to know that if I one day leave the work place that they would say: 'Everyone can be replaced, but she left a mark or she did do her best here'.

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6.3.1.2 *Discovering the **nature** of motivation*

SS1 discovered that within her work as a sport scientist, she was not committed to follow her value of willingness. She displayed her motivation to go to the evaluation, but this action was not supported by her values in order to give 100%. She states:

> It happened a few times, especially when I had to do something, but the willingness behind it was not really there. I wouldn't really be thinking about what I need to do in the evaluation to make it 100%.

SS1 discovered that when she saw clients, many of them only came for rehabilitation due to their parents or coaches motivation, not their own commitment. She states:

> When I do my clients assessments, I find out the reason why they are here for rehabilitation. I try to find out what is driving them, is it their coach that wants them to get back in training or is it their parents. Many parents phone, and they will ask for more sessions and what their kids can do; then I know it's not really the kids willingness to be here or wanting to be here.

SS1 realized that some of her clients are motivated to get better, perhaps only due to external motivation; she used the example of "the doctor". She states:

> But when they are kind of nowhere, and they are just doing rehabilitation to get it done because they will make comments like the doctor said I had to do rehabilitation. Some of them were supposed to start rehabilitation six months ago and only show up for rehabilitation thereafter.

SS1 discovered that some clients don't understand the principle of commitment, as they don't have a clear goal of what they want to achieve in her session. The clients are motivated by external factors, for example a doctor. She states:

> Some clients don't understand commitment because they really don't know why they come to sessions or they forget why they came. They are normally just there because the doctor said if you don't exercise your heart is going to stop.

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6.3.2 Applying commitment (Phase 4)

6.3.2.1 *The advantages of applying commitment*

SS1 mentioned that she realized that being committed had advantages that pertained to having goals, as well as her work-life situation.

The advantage of being committed through goals: SS1 mentions that as a sport scientist she has certain targets (goals) to achieve, or else she could get into trouble at work. However, by being committed to the value of hard work, she was able to continue with other tasks if patients did not pitch for their sessions. This had the benefit of achieving more in her work setting. She states:

> I knew I had to make certain targets. You can slack down at work, but then you won't make the targets, and the manager is going to be on your case, and you might get fired. Values kept me going even in the days when I didn't have clients or one of them cancelled. I still saw the positive out of it; I could do other work or I do masters or I go and see doctors, which I didn't get time to do when I had patients or sessions. So just to do whatever I could. If I accept my values to work harder and be more committed then I actually achieve more than I wanted to achieve, or actually see results even being better or getting more out of sessions.

The advantage of commitment on work-life realities: Being committed has also helped her in having a more balanced outlook on the interplay between her work-life situations. Commitment to the value of hard work has assisted her in completing her work during work hours, thereby allowing her not to take work home. She states:

> I will switch on when I'm at work and when I leave at 16:00, I don't think about work. I try and get my work done. Knowing I've got those patients tomorrow, I know their programs have been written, I have phoned to confirm whether they are coming. Everything that I should have done was done the day before. So when I go home, I'm completely switched off of work and that doesn't drain me, so the next morning when I get up it's my new working day.

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6.3.2.2 *The **difficulties** in applying commitment*

SS1 experienced some difficulties in applying commitment with specific reference to time, clients and work-life situation.

The difficulty in relation to time while applying commitment: SS1 states that at times when she had long working days, or when she was extremely busy, then she would find it difficult to be committed. She states:

> Just now and again it would get difficult when it was a rough or busy week. So for instance, when I got up every morning at 06:30 then later on in the week, I would feel more tired and not so energised towards the patients, which is unfair towards them because I should give everyone my 200. So when it's busy and long hours then normally my commitment takes a little bit of a downfall closer to the end of the week.

The difficulty in relation to various clients while applying commitment: SS1 states that she experienced difficulty in being committed when she worked with clients that were not committed. She states:

> In some I did see a change, but that's also people that could have been easily influenced or they just needed a good talk and then other people they just stay stubborn. So you see them week after week, and they are still stuck on Program 1. They don't really make progress, but those ones you stop at some stage because you can't put any more energy into them if you are not achieving anything.

On the other hand, she was able to retain her commitment with clients who themselves were committed. She also gave examples of various client groupings that she experienced as being more committed. She states:

> To transfer commitment was easier in population and age groups that were either in their late school ages, and normally my sporting populations, or someone that was good in sports way back who has been struggling a long way just to get back to normal. It was easier to transfer to them that they were able to do all functional things that were taken away from them like the

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> normal more basic things, like walking or getting in and out of a chair, like those people you really get committed to let them live a normal life.

The difficulty in relation to work-life realities while applying commitment: SS1 states that it was easier to apply commitment to her personal life than to her professional life. In the latter, she is of the opinion that it had a positive effect, while in the former she experiences some difficulties in being committed because of different age groups and different clients. Knowing how to transfer commitment to clients was difficult due to time constraints. She states:

> I would say in general it was easier applying it to my personal life than in my work. It was difficult transferring it to patients seeing that they were different populations, different age groups, they had different reasons why they came to us. So I think that's why the difficult part is transferring it to them. Some worked and others didn't, but in my personal life it had a complete positive effect. So I think the information is very relevant, I'm just not always too sure because we have certain things to achieve in an hour. It is difficult to apply that, as well or to transfer as well in that time. If you had a session before where you could teach them about all these things and then start doing rehab, I think that might have played a role.

Conclusion

This chapter explored how SS1 made sense of mindfulness, acceptance and commitment with regards to the experiential learning that took place during the MAC programme. The aim was to address the research questions of this study with reference to what SS1 discovered, and how she has applied her experiential learning.

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CHAPTER 7
RESULTS
(Sport Scientist 2)

Introduction

The purpose of this chapter is to provide an overview of SS2's experience after attending the MAC programme. Her experiences will be discussed pertaining to mindfulness, acceptance and commitment with reference to what she discovered and how she applied it. In this chapter, the findings will be discussed with the purpose of addressing the research questions of this study (see Chapter 1).

7.1 MINDFULNESS

Mindfulness can assist in enhancing sport performance by (i) being in the here-and-now, and (ii) focusing on the task (mindful attention), while (iii) transcending the awareness (mindful awareness) of discomforts caused by bodily sensations (bodily discomforts), internal experiences (internal discomforts (thoughts and feelings)) and external stimuli (external discomforts).

7.1.1 Discovering mindfulness (Phase 3)

7.1.1.1 Discovering the nature of mindfulness

SS2 addressed the three aspects of mindfulness (see 7.1) through the following two quotations. The first quotation relates to getting athletes to "be in the exercise" (here-and-now) while focussing on a specific task (mindful attention). She states (the indented sections are in each case the exact transcribed words of SS2. Where applicable, the transcribed text has been altered to improve either readability or grammaticality or both):

> In a gym situation, asking them [athletes] when they were stretching, or when they were doing an exercise, on which exact muscle they were focusing on … I think that made them be in the exercise because they were focusing on a specific muscle. That got them in to the zone. I think about mindfulness as being in the zone.

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The second quotation focuses on SS2 perceiving herself as being aware of her environment (mindful awareness). She states:

> I think I am quite a mindful person. I'm aware of things going on around me in my environment. So I feel like I am quite mindful, but it [MAC programme] just made me more aware of it [being mindful] again.

*7.1.1.2 Discovering the **nature** of mindlessness*

SS2 became aware that the nature of mindlessness was present in her life, as she was not in the here and now because she was not focusing on one task at a time, but rather jumped between tasks. She states:

> And usually I will go and look for something, and then I'll find something else and then start carrying on with that.

7.1.2 Applying mindfulness (Phase 4)

*7.1.2.1 The **advantages** of applying mindfulness*

SS2 became aware that applying mindfulness had advantages, as it assisted her to focus on details, as well as to complete one task at a time.

The advantage of focusing on details: SS2 became aware that when she applied mindfulness through being task focused, she was able to focus on detail and that increased her performance as a sport scientist, as well as the performance of her athletes. She states:

> As a sport scientist, that's pretty much a big part of my job; the small details in an athlete's performance. When you do it [sport science work] every day you can start missing out on those details. If you are able to bring yourself back and be task focused, then I think you will perform better in what you're doing … so you will do your job better so that they [athletes] will perform better.

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The advantage of focusing on one task at a time: SS1 indicates that applying mindfulness had an advantage, as it assisted her to complete one task before starting a new task, and as a result she became more efficient in her work. She used administrative duties as an example. She states:

> I've definitely tried to do one task at a time; whether it's e-mails or it's working with a kid in the gym. I've tried to do a whole thing finished before I move on to the next thing. I have also done this with administrative activities because when X is away, and I'm doing his part of his job. It has helped me get things done … Just being able to sit down and stay with one thing, it just made me get it done quicker, for sure. It did make me more efficient.

*7.1.2.2 The **difficulties** in applying mindfulness*

SS2 found it difficult to apply mindfulness in several aspects of her work context, giving reference to tiredness, specific work contexts, routine, supervision and working with various clients.

The difficulty in relation to tiredness while applying mindfulness: SS2 indicates that she found applying mindfulness difficult when internal experiences in the form of tiredness were present. She states:

> I can easily be distracted, like if I'm tired … other factors affected how task focused I am … I couldn't apply it to absolutely everything I did, but it was more the tiredness feeling, so absorb with yourself and feeling the tiredness.

The difficulty in relation to context while applying mindfulness: SS2 became aware that she had difficulty in applying mindfulness in relation to her work contexts. SS2 experienced applying mindfulness in the gym easier than when working on the tennis court. She states:

> With individuals mainly in the gym, I find it easier to implement than on the court; in a gym surrounding than on a tennis court. On the court there are other people around, they try to catch a ball and move around a cone. There are more things to focus on. Yes I find it easier to implement mindfulness in the gym.

The difficulty in relation to routine while applying mindfulness: SS2 came to the realization that she had difficulty in applying mindfulness when she got into a routine at work. She states:

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> It made me think of the gym, which is another area of my job where I probably need to be more task focused. I just get into that routine that when my athletes know what they are doing already I tend to lose focus on the task … so it highlighted one area that I can improve in.

The difficulty in relation to supervision while applying mindfulness: SS2 indicates that she had difficulty in applying mindfulness when she was in charge of supervision for the sport scientist students. She states:

> We have a whole lot of students who we are training [as sport scientists]; the honour students. We usually only have one staff member supervising, so then you can't get absorbed in the one thing. So there are areas that it's (MAC programme] useful and areas that it's [MAC programme] difficult.

The difficulty in relation to various clients while applying mindfulness: SS2 became aware that she had difficulty in applying mindfulness to her various clients. She gives examples of various clients such as individuals and groups, and how time in group settings makes applying mindfulness difficult. She states:

> I did see individuals and that was much easier to apply. I felt it being more of a personalised session, so when I'm explaining my drill, I can afford to beef it up with some of this [MAC programme]. But in a group session I tend to just want to get through the activities with not as much explanation of it [MAC programme] mainly because of time. So definitely the implementation with individuals was fine, but in a group I struggled to assess whether they were actually doing it [MAC programme].

7.2 ACCEPTANCE

Acceptance can assist in enhancing sport performance through accepting discomforts caused by bodily sensations (bodily discomforts), internal experiences (internal discomforts (thoughts and feelings)) and external stimuli (external discomforts) in a non-judgemental way.

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7.2.1 Discovering acceptance (Phase 3)

*7.2.1.1 Discovering the **nature** of acceptance*

SS2 discovered that despite having internal experiences, for example experiencing an emotion, she was able to become aware of them and accept them as part of the human condition. She states:

> I think I went quite basic, the same as with mindfulness. The general idea I had of it [acceptance] was that when you feel an emotion acknowledge it, but don't allow your behaviour to be affected by it. That's what I've implemented.

*7.2.1.2 Discovering the **nature** of avoidance*

SS2 discovered that avoidance was related to administrative duties, recovery and external stimuli such as the weather.

The nature of avoidance in relation to administrative duties: SS2 discovered that she did not accept internal experiences, for example her emotions, when it came to administrative duties, as it affected her work. She acknowledges that she needs to become mindful of this in order to get her work done. She states:

> I think about administrative work, keeping registers and writing reports. I think I tend to put those off because I don't like doing them. It's an emotional thing that I'm feeling. I'm tired, I don't feel like doing it. So if I was more task focused and mindful of everything else I had to do, then I would probably get it done sooner.

The nature of avoidance in relation to recovery: SS2 discovered that she used recovery as an avoidance strategy to miss sessions. She states:

> Sometimes, if my players have been on a tournament, we need to do recovery strategies. But sometimes, it's not only me, it's probably a combination of the coaches, the players and myself, we use recovery as an excuse not to have a session. You have just been away for a long time, and you need to catch up on work, then you will give them the recovery session as a free session.

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The nature of avoidance in relation to the weather: SS2 discovered when she had to do sessions, she will use avoidance in relation to external stimuli, for example the weather. She states:

> I think there are a lot of factors that can lead to avoidance, the weather for example; if it's hot outside, you might start thinking about changing your session to avoid the unpleasant weather.

7.2.2 Applying acceptance (Phase 4)

7.2.2.1 The advantages of applying acceptance

SS2 explained the advantages of applying acceptance in relation to training sessions, as well as teaching acceptance through physical activities.

The advantage of applying acceptance in training sessions: SS2 realized that if she could apply the principles of acceptance in her training sessions to her athletes, then it could be advantageous to them in competitions, as the athletes deal with a lot of distractions that they need to accept. She states:

> I work with tennis players so I think it's [acceptance] a big thing for them and their performance. Within my role as a sport scientist, I'm going to try and bring that [acceptance] into my sessions so that they start to use it [acceptance]. In so many matches that they play, they come off and tell you something distracted them, or put them off, or something made the match harder. I think if I implement acceptance to what they feel during my strength and conditioning sessions, then hopefully they will transfer it to their matches.

The advantage of teaching acceptance through physical activities: SS2 described how she used physical activities, for example skipping ropes, as a way to teach the principles of acceptance; she specifically created the experience of accepting bodily sensations with this activity. She states:

> The skipping ropes I have are quite heavy so when it hits them [tennis players], it hurts. I tried to let them skip as fast as they can because I knew it was going to hit them. They then needed to carry on as quickly as they can without stopping. So the stinging is still happening, and they need to accept it, to just keep moving and not get angry with the rope. It definitely improved the way they did my activity.

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*7.2.2.2 The **difficulties** in applying acceptance*

SS2 explained that she experienced difficulty in applying acceptance in relation to tiredness and pressure.

The difficulty in relation to tiredness while applying acceptance: SS2 felt that internal experiences, for example tiredness, made it difficult to apply acceptance in her work. SS2 indicated that acceptance is part of the human condition that never ends, and thus it's difficult to apply it. She states:

> Doing acceptance is the most difficult part. When it's the end of the year, it's a lot harder to do acceptance than when you are fresh, or when things are going well. So when you are feeling down, or when things are tough, or when you are really busy, then I think the emotions can carry on longer because you never actually stop to do the acceptance part that wraps it up and move on.

The difficulty in relation to pressure while applying acceptance: SS2 perceived applying acceptance to her athletes differently with regards to high pressure situations versus no pressure situations. She states:

> It's easier leading into a tournament for them [tennis players] to use acceptance because they have a goal that they have to perform. If they are able to identify the emotion, or what's going, then sometimes it is easier for them to accept quicker because they have time restraints. So a bit of pressure maybe? But then I find when there is no tournament coming up, and it just looks like there's training ahead, then sometimes it's more difficult to get them to accept and move on, they get into that rut almost.

7.3 COMMITMENT

Commitment can assist in enhancing sport performance by means of (i) performance goals and (ii) value-driven behaviour in pursuit of the performance goals, thereby transcending the awareness (mindful awareness) of discomforts caused by bodily sensations (bodily discomforts), internal experiences (internal discomforts (thoughts and feelings)) and external stimuli (external discomforts).

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7.3.1 Discovering commitment (Phase 3)

7.3.1.1 Discovering the nature of commitment

SS2 discovered that if she wanted to achieve her goals she needed to be committed through the use of her values rather than just setting goals. She states:

> I found this part very useful. Identifying values can be a way to commit to a goal. So using values to commit, I found useful, rather than just setting goals. That's the end target, but there's a whole big space before you get to the target.

SS2 also discovered being committed through value-driven behaviour enhanced her work performance. She states:

> I've been motivated to do this job well so that I'm acknowledged and considered to carry on with it [sport science job] when it comes to deciding what's going to happen. That has helped being committed to my work. I guess my competitive edge has made me committed to what I'm doing so that I do it well.

7.3.1.2 Discovering the nature of motivation

SS2 discovered that her athletes did not show the principle of commitment, but were motivated to set goals, but no action took place in order for them to reach their goals. She states:

> For teenage boys to actually start thinking do they even have values, some of them are not so sure. It seems like it's easier for them to just set goals, but I think they probably forgot about it in two months. If I'll ask them today do you remember, I don't think they will remember, anyone will.

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7.3.2 Applying commitment (Phase 4)

7.3.2.1 The advantages of applying commitment

SS2 reported that being committed had advantages pertaining to goals and values, value-driven behaviour, and values related to responsibility and equality.

The advantage of having goals and values: Being able to discover the difference between goal setting and being committed through values was beneficial for SS2. She mentions that applying values are advantageous, as it assists with reaching goals, and it is something that she can apply to her everyday life. She states:

> So understanding the difference between values and goals was a big thing for me because I never actually thought of values as a way of reaching goals. A lot of times that I have done goal setting, I have put in steps, but they're actual activities that are going to help me reach that goal. This is not the same as reaching that goal through values. So I found that very useful. What I did do is to implement steps or have a plan, like a five year plan or five month plan to get there. I think sometimes the steps are very time orientated, whereas values you can implement every day.

The advantage of value-driven behaviour: SS2 expresses that being committed through value-driven behaviour had advantages for her in her work as a sport scientist, and she also feels that if she applies it to her athletes, they can enhance their performance. She states:

> I think in my professional life, I act on values quite a lot without knowing; around the office and making decisions for work. I think I can teach my athletes to do that from a sport science perspective to help them with their performance. Personally, I think I don't do too badly at that [acting according to values], but I know that my athletes definitely act on emotions because they are young; they are still teenagers and that's to be expected I guess.

The advantage of the value of responsibility: SS2 mentions that being able to use values as a means to stay committed with regards to several responsibilities was advantageous for her. She states:

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> I'm playing hockey, and it's the beginning of the season, but I also have a whole lot of work commitments compared to some of the other girls in my team. I've been doing a lot of training on my own outside of the hockey sessions because I'm a senior player, and I don't want people think that I'm not keeping up. So my values have motivated me to train myself, which is not always easy on top of what we do at hockey.

The advantage of the value of equality: SS2 describes in this account the advantage of using the value of equality as a means to stay committed with regards to the athletes that she sees. She states:

> I had to go back to my values and think that I can't pick and choose who I work with. I have to be humble so that whoever comes my way and needs my help, I have to help them no matter who they are or what their ideas are.

*7.3.2.2 The **difficulties** in applying commitment*

SS2 experienced some difficulties in applying commitment with specific reference to time, emotions and the values of clients.

The difficulty in relation to time when applying commitment: SS1 states that if there was more time to process internal experiences then applying commitment would have been easier, but due to constant internal experiences, she finds the principle of commitment difficult to apply. She states:

> I think it's quite difficult to avoid acting on emotions all the time because emotions are instant, so sometimes you don't always have it [acting on values] in your mind to go back to your values. So if you have a bit more time to think about it [acting on values] then you can do that.

The difficulty in relation to emotions when applying commitment: SS2 describes how she found it difficult to apply commitment in her work, as internal experiences such as emotions would affect the way she works with athletes. She states:

> If a child is late for gym, or the coach walks in and says this guy was useless on the court today, then I have a self-focused approach to them. So it's more of an emotional reaction to the athlete as opposed to a task focussed approach. I should actually give them a clean slate even if they were useless on the court to start again at the new task in the gym.

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The difficulty in relation to values and clients: SS2 states that it was difficult for her to apply the principle of values to her athletes, as they found it difficult to use values as a means to commit. She states:

> I asked them to write down their own values, and they had to tell the group. I think they picked the values that they thought I would like. I don't think they put much thought into it. So something I struggled with how you get them to like buy into this process. It seems like it's easier for them to just set a goal that doesn't require any emotion or behavioural aspect to it. Because it feels like it's out there and they will work towards it. So in terms of implementation I thought that was difficult.

Conclusion

This chapter explored how SS2 made sense of mindfulness, acceptance and commitment with regards to the experiential learning that took place during the MAC programme. The aim was to address the research questions of this study with reference to what SS2 discovered, and how she has applied her experiential learning.

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CHAPTER 8
RESULTS
(Sport Scientist 3)

Introduction

The purpose of this chapter is to provide an overview of SS3's experience after attending the MAC programme. Her experiences will be discussed pertaining to mindfulness, acceptance and commitment with reference to what she discovered and how she applied it. In this chapter, the findings will be discussed with the purpose of addressing the research questions of this study (see Chapter 1).

8.1 MINDFULNESS

Mindfulness entails enhancing excellence in sport performance by (i) being in the here-and-now, and (ii) focusing on the task (mindful attention), thereby (iii) transcending the awareness (mindful awareness) of discomforts caused by bodily sensations (bodily discomforts), internal experiences (internal discomforts (thoughts and feelings)) and external stimuli (external discomforts).

8.1.1 Discovering mindfulness (Phase 3)

8.1.1.1 Discovering the nature of mindfulness

SS3 used the term autopilot to illustrate her understanding of mindfulness and mindlessness. She became aware that the nature of mindfulness entails her mind and body to be in the same place at the same time (being in the here-and-now). However, she realized that there are times that she is mindless, for example when things happen the way she wants them to. She states (the indented sections are in each case the exact transcribed words of SS3. Where applicable, the transcribed text has been altered to improve either readability or grammaticality, or both):

> Learning mindfulness was beneficial for me because I realised that I operate completely in autopilot, so I am mindful to a certain extent, and then when things happen the way I want them to happen, my mind starts to drift. My mind and body needs to be more in sync to be mindful.

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8.1.1.2 Discovering the nature of mindlessness

SS3 discovered that the swimmers displayed the principle of mindlessness, as they were not paying mindful attention to the activities that they were instructed to do. She states:

> I asked the swimmers whether they were thinking about what they were doing, and they replied that they were not, they were just doing the warm up. When they said that they were just doing the warm up, I knew they were not thinking about what they were doing.

8.1.2 Applying mindfulness (Phase 4)

8.1.2.1 The advantages of applying mindfulness

SS3 came to the realization that applying mindfulness had advantages in her daily sport science activities, as well as assisting her to focus on one task at time.

The advantage of focusing on sport science activities: SS3 views the application of mindfulness as being advantageous to the swimmers, as it assists them to move from not being able to focus on the task at hand (she use the example of warm up) to being able to apply mindful attention and awareness to the task. She states:

> During the warm up activities the swimmers repeat the same routine. So they go to the gym and do the warm up quite mindlessly. I taught them how to do it mindfully by trying to get them to focus on a certain body part at a time. For example, I will tell them to get their legs slightly higher, and then they will focus on that as opposed to something else. They then realised that they need to apply their whole mind to each activity.

The advantage of focusing on one task at a time: SS3 is of the opinion that if she focuses on one task at a time, it can assist her in her personal life and work as a sport scientist, as it will increase her efficiency. She states:

> It can benefit your own performance and focus on what you're doing. I think your efficiency will become a lot better because you can focus on one thing at a time. It can be very efficient for work and stuff.

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SS3 also discovered that if she was able to allow internal experiences such as thoughts and emotions to be present and still be mindful of her sessions, she was able to focus solely on the session. She states:

> When I had to do a session and things got really busy, and I had a lot of stuff on my mind, I would make sure that that I was mindful of the task at hand before I went into the session. I made sure I allowed emotions to come and go and focused on my breathing, and then I would be okay to go to the session. I've sort of took a time out to think about what I'm supposed to be doing.

*8.1.2.2 The **difficulties** in applying mindfulness*

SS3 found that applying mindfulness had difficulties in her work context, with specific reference to aspects of emotions, time, context and making mistakes.

The difficulty in relation to emotions while applying mindfulness: SS3 discovered that internal experiences such as emotions affected her ability to be mindful on the task at hand. She states:

> I think if I'm not mindful due to an emotion that I'm experiencing, then I don't focus on what's happening in the moment.

The difficulty in relation to time while applying mindfulness: SS3 found that the time that she had to complete her daily activities were limited, and as a result she would not be mindful of her current activity, as she would start to apply her mind to the next activity. She uses the example of strength and conditioning sessions. She states:

> I think there is so much that you have to do in a day, for example you have an hour to deal with kids in a strength and conditioning session, but then I will think of something else that I need to do when I'm done with the session.

The difficulty in relation to context while applying mindfulness: SS3 became aware that she had difficulty in applying mindfulness in relation to her work contexts. SS3 experiences applying mindfulness in sessions easier than when she was working in the laboratorium. She states:

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> In the lab I struggled to be mindful when people were talking. When I hear people talking and discussing stuff, I'm still not able to focus on my work. During a session and everything else I'm great; the only thing that I struggle with is when there's talking in the lab, and I need to do something else.

The difficulty in relation to making mistakes while applying mindfulness: SS3 became aware that when she made a mistake she focused her attention on the mistake and not on the task at hand. She states:

> It boils down to if I make a mistake. So when I made a mistake, I dwelled on that mistake and it affected everything else that came from that. So my whole attitude towards that specific task, as well as thinking about that mistake, wasn't task related; it was internally focused on what I messed up on.

8.2 ACCEPTANCE

Acceptance entails enhancing excellence in sport performance through accepting discomforts caused by bodily sensations (bodily discomforts), internal experiences (internal discomforts (thoughts and feelings)) and external stimuli (external discomforts) in a non-judgemental way.

8.2.1 Discovering acceptance (Phase 3)

8.2.1.1 Discovering the nature of acceptance

From previous experiences, SS3 noticed that she did not always accept her emotions. However, following the MAC workshop, SS3 discovered that despite having internal experiences, for example her thoughts and emotions, she was able to became aware of them and accept them in a non-judgemental way. She states:

> I identified the emotions linked with thoughts, and you become quite aware of it. I used to act very much on emotions. If you have a certain thought, you react emotionally to that thought, so I made sure that I was aware of the emotion and aware of the thought, allowing it to come and go and accept it.

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SS3 came to the realization that internal experiences were part of life that she needed to accept. She did not need to deny their existence, or fight them, but only needed to be aware of them and accept them in a non-judgemental manner. She states:

> I think over the last week or so, I've been very aware of how I react in certain situations, and it's a lot easier than I thought it would be. I just think I'm nervous or I'm angry now, I can't let this affect my work, I can be angry, and I don't have to stop it.

SS3 also realized that discomforts caused by internal experiences are part of the human condition, and if she was able to accept them in a non-judgemental way, it would allow her to work in any situations where discomforts are present. She states:

> I think you will be able to accept what's happening internally, and it will help you to work under circumstances that you can't really control. I mean that's human behaviour, human feelings, you can't really change those.

*8.2.1.2 Discovering the **nature** of avoidance*

SS3 discovered that the athletes that she works with did not apply acceptance in their sport, but rather used internal experiences such as tiredness as an avoidance strategy to miss gym sessions. She states:

> The kids [swimmers] would say they can't do the next day's gym session because they have to race in an age group gala. But the age group galas don't mean anything, it's just racing experience. I asked them why they didn't want to do the gym session, and they replied that they will be too tired for the age group gala the next day.

8.2.2 Applying acceptance (Phase 4)

*8.2.2.1 The **advantages** of applying acceptance*

SS3 explained the advantages of applying acceptance in relation to administrative duties, as well as sport science work.

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The advantage of applying acceptance to administrative duties: SS3 indicated that by applying acceptance to administrative duties, it increased the time she spent on tasks and made her more efficient. She states:

> The task will get done quicker and probably more efficiently because you won't be too rushed when you reach the end of your task list.

The advantage of applying acceptance to sport science work: SS3 also found that by accepting, for example emotions, it assisted her sport science work, as it increased her confidence and kept her calm. She states:

> So if you apply acceptance, you'll be able to be more self-confident and calmer in your work, and you will be able to do a lot more things without trying to control an emotion.

*8.2.2.2 The **difficulties** in applying acceptance*

SS3 explained that she experienced difficulty in applying acceptance in relation to uncertainty and sport science activities.

The difficulty in relation to uncertainty while applying acceptance: SS3 found that when she was unsure of certain tasks, she would avoid it by procrastinating. She states:

> The avoidance part is big in my reaction. I tend to avoid situations where I don't know how to do a task. I will put it towards the end of the list of things to do. So I avoid it by procrastination, so it's experiential avoidance.

SS3 also indicates that when she is unsure or feels incompetent of certain tasks, she would avoid them until she can gain more knowledge on the tasks. She states:

> When I feel slightly incapable, or not incapable, but incompetent, and that is only a perception because we are all equally qualified. So when I am unsure of something I tend to avoid it, then I put it off till later when I have more time to do research on that sort of thing.

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The difficulty in relation to sport science activities while applying acceptance: SS3 felt that internal experiences in her swimmers, for example incompetency, made it difficult for them to apply acceptance in the sport science activities, as they would avoid the activities. She states:

> When the swimmers find an exercise difficult, they will leave it and continue on to the next one, and I will tell them they can't do the next exercise. So, if they can't do a certain exercise, or if they feel incompetent in a certain exercise, they will do something else, or just fold their arms and look at me.

8.3 COMMITMENT

Commitment entails enhancing excellence in sport performance by means of (i) performance goals and (ii) value-driven behaviour in pursuit of the performance goals, thereby transcending the awareness (mindful awareness) of discomforts caused by bodily sensations (bodily discomforts), internal experiences (internal discomforts (thoughts and feelings)) and external stimuli (external discomforts).

8.3.1 Discovering commitment (Phase 3)

8.3.1.1 Discovering the nature of commitment

SS3 discovered that commitment required her to accept discomforts in the service of her values, as that would assist her to act in a purposeful manner. She states:

> I remember now commitment is when an athlete demonstrates the ability to accept behaviours and continue to perform to his best abilities. So accepting that I am very nervous, but not let the nervousness overtake, and that refers to poise and I would say mental toughness as well. So you will act in a purposeful manner when you have those values in mind and by accepting the emotions and feelings as normal human behaviour.

SS3 also discovered that by being committed through the use of values assisted her to accept internal experiences, for example tiredness, and that assisted her to achieve her goals. She states:

> So instead of acting on a situation emotionally, you look at your values. It's a lot like I said in the acceptance where I don't really want to get up in the morning because I'm tired. Then you

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think I'm too tired, maybe I should sleep a bit later, but then you think, no, I wanted to do this, this is my goal, and the values that I stick to are commitment. So that helped.

*8.3.1.2 Discovering the **nature** of motivation*

SS3 discovered the meaning of being motivated and committed. She found that the principle of motivation assisted her to support her athletes. She states:

> I learned the differences between commitment and motivation where it says commitment refers to the actions that athletes take, and motivation refers to the reasons why people or athletes do what they do. So I would say you can help an athlete if you realise the reason why they are actually doing something. You can also question whether or not they are actually committed because of the values they have.

8.3.2 Applying commitment (Phase 4)

*8.3.2.1 The **advantages** of applying commitment*

SS1 mentioned in the following two quotations that she realized that being committed had advantages that pertained to value-driven behaviour.

The advantage of value-driven behaviour: SS3 expresses that being committed through value-driven behaviour had advantages, for example she could apply it to her athletes so that they could become aware of the use of value-driven behaviour instead of emotion-driven behaviour in their performance. She states:

> I think to be able to know what values you hold dear or well so that you are able to achieve a goal instead of working on emotions or how you are feeling when things get bad. If you look at values, you can help an athlete as well. For example, if an athlete is throwing a tantrum because they didn't win, you can tell them it's an emotion they are experiencing, and they need to look at their values. So let them look at their persistence and all the values that they said they want to live by.

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SS3 gives an example of how she assisted an athlete to focus on value-driven behaviour instead of emotion-driven behaviour. She states:

> X likes to identify an emotion. I told her that her feeling of being uninterested is an emotion, and that she needs to work on her values because she told me that she needs dedication to get to where she wants to go. I told her she needs to have her values in place before she acts on this tiredness or uninterested emotions. So that also helped.

*8.3.2.2 Discovering the **difficulties** in applying commitment*

SS3 discovered that it's difficult to apply commitment and act on values when discomforts such as tiredness are present. She states:

> When they [swimmers] are tired, and they mess around, they can't always stick to their values. So just generally when people are tired, they don't think about acting on their values.

Conclusion

This chapter explored how SS3 made sense of mindfulness, acceptance and commitment with regards to the experiential learning that took place during the MAC programme. The aim was to address the research questions of this study with reference to what SS3 discovered, and how she has applied her experiential learning.

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CHAPTER 9
RESULTS
(Sport Scientist 4)

Introduction

The purpose of this chapter is to provide an overview of SS4's experience after attending the MAC programme. Her experiences will be discussed pertaining to mindfulness, acceptance and commitment with reference to what she discovered and how she applied it. In this chapter, the findings will be discussed with the purpose of addressing the research questions of this study (see Chapter 1).

9.1 MINDFULNESS

Mindfulness entails enhancing excellence in sport performance by (i) being in the here-and-now, (ii) focusing on the task (mindful attention), thereby (iii) transcending the awareness (mindful awareness) of discomforts caused by bodily sensations (bodily discomforts), internal experiences (internal discomforts (thoughts and feelings) and external stimuli (external discomforts).

9.1.1 Discovering mindfulness

9.1.1.1 Discovering the nature of mindfulness

SS4 addressed the nature of mindfulness in her work as a sport scientist through the following three quotations. The first quotation relates to SS4 focusing on a specific work task (mindful attention) while being aware of discomforts. She uses the example of taking as a way to be aware of internal experiences, but to stay focused on the task. She states (the indented sections are in each case the exact transcribed words of SS4. Where applicable, the transcribed text has been altered to improve either readability or grammaticality, or both):

> I have applied mindfulness in my work in various ways. In my own work, I constantly refocused my attention at the task at hand when necessary. I wrote a to-do list so that when I had time to sit at my desk for long periods, it allowed me to know exactly what I had time to do. If I found my mind wondering, I would take a few minutes break to readjust my focus.

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The second quotation refers to SS4's ability to be mindful in practical sessions and focus on the task at hand. She states:

> When I'm in my session, I think I'm very mindful towards what I'm doing and what I want to get out of it, and what the boys [cricket players] needs to get out of it.

The third quotation refers to SS4's ability to be mindful when she is doing testing. She states:

> When I'm doing testing and things like that, I find that I do get myself quite involved in that task at hand.

*9.1.1.2 Discovering the **nature** of mindlessness*

SS4 discovered that the nature of mindlessness was present in her life, as she was not in the here-and-now, and she was not focusing on one task at a time, but rather tried to do more than one task at a time. She states:

> I think from my point of view I tend to be going from one place to another, like I'm doing an awful lot of things at one time. Most of the time I'm trying to answer emails on my phone while walking to different places, so my mind is set on the emails but I'm also thinking where I'm supposed to be going.

SS4 uses an example of trying to do more than one thing at a time to illustrate her understanding of mindlessness. She states:

> An example is when there is something that I need to be listening to, in the back of my head I know the players are looking for me because I've booked them appointments. That's when I'm trying to listen, but also think about the appointments, so I try to do everything at once, and then maybe I'm not fully committed to what I was doing.

SS4 views mindlessness as not being in the here-and-now. She uses the example of trying to do more than one task at a time. She states:

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> Sometimes I can find myself being busy in terms of trying to please different departments and different people. I then tend to try and do all at one time.

9.1.2 Applying mindfulness

9.1.2.1 The advantages of applying mindfulness

SS4 realized that applying mindfulness had advantages in her daily sport science activities, and it also assisted her to focus on goals.

The advantage of focussing on sport science activities: SS4 discovered that she was able to focus and be completely mindful in physical sessions such as testing and conditioning sessions.

> I do think that I'm quite mindful during a physical session. So on the field in a conditioning session, I'm focused on the conditioning session, and if I'm doing testing I'm focused on that testing.

SS4 found that employing the activity of having a protocol as a means to apply mindfulness had showed to be advantageous in her sport science activities. She states:

> Going through the protocol and saying this is what you're [cricket players] doing, for example you're doing the test, that stops my mind wondering, and then I can focus on what I'm doing.

SS4 also views the application of mindfulness as being to the advantage of her athletes, as it assists them to become more focused on the activity that they are doing. She states:

> I tell them [cricket players] to listen extensively because they need to be the teacher so that they can teach. I find that they actually became more mindful because now they are using the same keywords that I use, like activation of the gluts. So for me they're task focused in that activity.

The advantage of focussing on goals: SS4 indicates that when she has clear goals of what she needs to do, it assists her to be completely mindful of the task at hand without letting discomforts affect her. She states:

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> Before the sessions my students and cricketers know what the plan is and what their goal is of that session. Having this in front of me and more structure allowed me to be completely involved in the session without thinking about other things.

SS4 also realized the advantage of giving goals to her athletes, as it assisted them to focus on the task at hand. She states:

> I'm not telling them [cricket players] that they need to beat everyone to win. I'm trying to use their own goals, giving them a personal goal that they have to maintain throughout. That keeps them task focused.

*9.1.2.2 The **difficulties** in applying mindfulness*

SS4 explained that she experienced difficulty in applying mindfulness in relation to emotions, thoughts, administrative duties and various clients.

The difficulty in relation to emotions while applying mindfulness: SS4 indicates that she found it difficult to be mindful and task focused when internal experiences such as her emotions were present. This difficulty specifically relates to her work, but not her personal life. She states:

> There may be times where I slip into being self-focused, perhaps if something has happened and tends to annoy me at work. If it's something personal that has happened at home or with friends then I tend to not let that annoy me. I have found that if there's something that happens at work, for instance a coach may say to me don't worry I've got the water, then I will feel bad about that, and I will think what are you talking about that's not my job. I might get annoyed about that sometimes and let that affect me.

The difficulty in relation to thoughts while applying mindfulness: SS4 indicates that she found applying mindfulness difficult when internal experiences in the form of thoughts were present. She states:

> So I think it's more watching out for myself because I am very self-critical of myself, so I'll wonder if I'm doing my work right and why perhaps they are not thinking that I'm doing it.

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The difficulty in relation to administrative duties while applying mindfulness: SS4 became aware that she had difficulty in applying mindfulness when she had to perform administrative duties. She states:

> I find that it's probably more the admin and the monotonous task that I do when I become more mindless.

The difficulty in relation to various clients while applying mindfulness: SS4 became aware that she had difficulty in applying mindfulness in a group session where there were many athletes. She indicates that it is difficult to keep a big group mindful of the session. She states:

> Sometimes I find it difficult to keep such a big group like my senior group focused when I have them for conditioning. I have between twenty five and thirty cricketers to keep task orientated all the time. Sometimes it just takes one guy to interrupt the session by saying something funny which influences some of the group, and then they lose focus. I have a good statement that tends to work that gets them to focus in the session, and then I can help them become mindful of the exercise and see the purpose. I did find that this is a difficult one.

SS4 discovered that she had difficulty in applying mindfulness, as athletes tend to want personal attention on specific matters. She states:

> It was difficult to continue throughout the day to stay focused on the task at hand. There is always a player who pops into my office wanting to unload or discuss something important.

9.2 ACCEPTANCE

Acceptance entails enhancing excellence in sport performance through accepting discomforts caused by bodily sensations (bodily discomforts), internal experiences (internal discomforts (thoughts and feelings)) and external stimuli (external discomforts) in a non-judgemental way.

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9.2.1 Discovering acceptance

9.2.1.1 Discovering the nature of acceptance

SS4 discovered through her work experience that having internal experiences, for example emotions, was part of the human condition, and there was no need to deny them, fight them, or react to them, but rather accept them.

> I've applied acceptance in my work by understanding that as humans we will have emotions, and we should not let these emotions control our days output.

9.2.1.2 Discovering the nature of avoidance

SS4 discovered that nature of avoidance was related to time, emotions and to her personal life.

The nature of avoidance in relation to time: SS4 found that if she did not have enough time that she would apply avoidance by means of postponing tasks which affected her work productivity. She states:

> If I got half an hour slot, I may think that that's not enough time to commit to my work. I then tend to avoid it till later in the day or the following morning which may then lead to the coaches not getting the information straight away that they should be receiving.

The nature of avoidance in relation to emotions: SS4 discovered that emotions affected her ability to apply acceptance, so she would rather employ avoidance when emotions were present, for example being tired. She states:

> I do sometimes think that if things happen that I'll accept them for what they are. However, there are times, so it depends in what mood I'm in, where I'll tend to avoid the task at hand by saying I'm tired.

The nature of avoidance in relation to personal life: SS4 explained that when she did something of a personal nature, she will use avoidance in relation to bodily discomforts. She states:

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> Last week I was trying out rings for the first time. Initially, I was enjoying it, and I was getting up and I did what I needed to do, but eventually then my hands got sore, then my triceps were a bit sore, and then I didn't want to do another set. That's probably more in my personal life that I might avoid doing a certain session and rather doing something else that I enjoy better.

9.2.2 Applying acceptance

9.2.2.1 The advantages of applying acceptance

SS4 explained the advantages of applying acceptance in relation to administrative duties, as well as sport science work.

The advantage of applying acceptance to administrative duties: SS4 realized that practicing acceptance had the advantage of allowing her to complete her administrative duties. She states:

> For me admin is part of my job, and I think I've mentioned it in commitment, but it's part of my job and you have to do it. So it's not a matter of avoiding it or anything like that, I have to get it done. When I'm doing it, I just make sure I have enough time to complete it because I don't tend to start something if I don't think I don't have enough time to complete it. When I'm in my admin, I try my best to focus on what I'm doing and getting it done.

The advantage of applying acceptance to sport science work: SS4 discovered through the principle of acceptance that she accepted different situations in her work without it affecting her work performance. She states*:*

> I have dealt with situations at work a lot better and not let comments and high pressure situations influence my actions or relay into my sessions.

SS4 also experienced how acceptance allowed her to deal with sport science work better. She gives the example of accepting high pressure situations where emotions are in the forefront. She states:

> I just dealt with it [high pressure situation] there and then; I didn't look at it as if he is personally attacking me, even though maybe he [coach] was acting on emotions, I just took it as it was.

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*9.2.2.2 The **difficulties** in applying acceptance*

SS4 described that she experienced difficulty in applying acceptance in relation to tiredness, various clients and time.

The difficulty in relation to tiredness when applying acceptance: SS4 felt that internal experiences, for example tiredness, made it difficult to apply the principle of acceptance. She states:

> Maybe it's the wrong way to feel because I think that if I'm tired and things that's where I'll use avoidance more.

The difficulty in relation to various clients when applying acceptance: SS4 discovered that it was difficult to apply acceptance within a team setting. She states:

> When it's a team, its' difficult to apply or transfer acceptance or mindfulness in a team, so that's probably the difficulty.

The difficulty in relation to time when applying acceptance: SS4 indicated that due to limited time, she was not always able to transfer acceptance to her athletes, as she was not aware of what's going on in their lives. She states:

> I find this principle difficult, as we did not always have time, time for every athlete to know what's going on in their lives and what they are actually avoiding in life and also in sport. We need to take the time to find out what's going on so the players can act more positively and achieve peak performance.

9.3 COMMITMENT

Commitment entails enhancing excellence in sport performance by means of (i) performance goals and (ii) value-driven behaviour in pursuit of the performance goals, thereby transcending the awareness (mindful awareness) of discomforts caused by bodily sensations (bodily discomforts), internal experiences (internal discomforts (thoughts and feelings)) and external stimuli (external discomforts).

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9.3.1 Discovering commitment

9.3.1.1 Discovering the nature of commitment

SS4 discovered that if she had a clear goal of what she wanted to achieve, she needed to apply her values as a means to stay committed and reach her goal. She uses the example of wanting to do her PhD. She states:

> Well I can give you outcomes. Sometimes I'll set goals, I want to do my PhD, I want to become this expert in cricket and obviously move there [to cricket] fulltime. I think obviously by living by my values, working hard and trying to put in effort where I can in terms of work, I think that it's got to those stages. So I looked at it as something that I strived for, but I was not sure of how I will get there. The workshop probably taught me to rather use the values.

9.3.1.2 Discovering the nature of motivation

SS4 found that she did not employ the principle of commitment in administrative tasks. She was motivated to get the administrative duties done, but she was not committed to give 100% to the task. She states:

> But then, as I said, there is times as well when I'm in the office where I'm doing a few things at once and maybe not committing, so I think it's more of the admin kind of things that I find I'm not committing to completely to get it done.

9.3.2 Applying commitment

9.3.2.1 The advantages of applying commitment

SS4 reported that being committed had advantages relating to value driven behaviour and the value of prioritizing.

The advantage of value-driven behaviour: SS4 expresses that being committed through value-driven behaviour had advantages for her in her work as a sport scientist. She was able to manage all her responsibilities with the different teams that she worked with despite discomforts. She states:

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> I have applied commitment in my work massively this half of the season. I feel that my values within my role and my job within Tuks cricket have paid off. We had a tough and busy season preparing to defend national club champs with one of my squads. However, I also had my junior and senior academy to work with at the same time. I feel that my passion, commitment and work ethic got me through some mornings. At a stage in February, I was working seven days a week and missing out on my social life, but through this principle [commitment] I was able to be energetic and thoughtful so that my academy boys were not missing out just because elite preparation was more important.

SS4 also indicated that within her personal life, she found it effortless to apply commitment through focussing on her values, thus employing the principle of value-driven behaviour. She states:

> There is times when it's [commitment] difficult, but in my life I think that I have values that I work towards, no matter how. If I have to get up on Saturday I'm quite strict, not strict, I'm happy to do it because I love my job so much then I'll do it, and I know that now in the off season I've got weekends off so I can focus on my own stuff.

The advantage of the value of prioritizing: SS4 states that when she prioritized what she needed to do, it helped her to commit to her tasks, as she was driven by her values to accomplish each task. She states:

> Tuks and X might take me to the next level. I'm not saying that's what I want to do, but I like to keep my options open. I think that using values have helped me to commit. I love running and I love racing, and I had to stop that in the summer because of that. It's just a passion, so I had to decide, okay this comes first at the moment, this is a priority and it's a priority for me to help this going forward. And I think then also I had to look out for the juniors and seniors, so I couldn't just say to the students to do the session. I think that was just a value of commitment to get those sessions done and doing them right and getting output at the end of March.

*9.3.2.2 The **difficulties** in applying commitment*

SS4 experienced some difficulties in applying commitment with specific reference to emotions, colleagues' values and various clients.

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The difficulty in relation to emotions while applying commitment: SS4 describes how she found it difficult to stay committed during sessions when internal experiences such as emotions were present. She uses the example of an athlete being late and how she will react differently according to the emotion she is experiencing. She states:

> It might be some instance that flicks a switch and then I can get quite annoyed about that, and I might act irrationally with that person. I'll give you an example, if a guy is late to gym one day I might act irrationally, or it may not be irrationally, but I'll even ask him to leave or get on the treadmill and for every minute his late he does two times that on the treadmill. Another day the same guy might be late, and I might go easy on him. So I don't know if it's my own personal nature of how I act with those people. Sometimes maybe it's the mood that I'm in, and that's the way I will act, but I don't really know it or understand it.

The difficulty in relation to colleagues values while applying commitment: SS4 found it difficult to consider the values of her colleagues. She felt that she employed emotion driven behaviour rather than value-driven behaviour. She states

> There were times in the workplace where I had to refocus my values and also consider others within the personnel of Tuks cricket. I have a huge passion for my job and what I do, and I will not let anything change that. Although certain decisions were made, I acted on emotions first and didn't consider the values set by the other person.

The difficulty in relation to various clients while applying commitment: SS4 discovered that during individual sessions, the athletes were more emotion driven than value-driven, as they focused on their internal experiences such as emotions and thoughts. She states:

> Also in individual sessions, there might be a guy that comes and he is tired or whatever, so he is acting on how he was the night before, or he is thinking about the night before. So he is not completing the session with values in place; I mean his completing it on his emotions, I think.

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Conclusion

This chapter explored how SS4 made sense of mindfulness, acceptance and commitment with regards to the experiential learning that took place during the MAC programme. The aim was to address the research questions of this study with reference to what SS4 discovered and how she has applied her experiential learning.

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CHAPTER 10
CONCLUSION

Introduction

The purpose of this chapter is to provide an overview of previous and present research on MAC. The present research on MAC will provide the final summary of the research findings in relation to the research questions set out in chapter 1. Furthermore, the chapter will explore the contributions and limitations of this study.

10.1 PREVIOUS RESEARCH

The research findings on the MAC approach showed to be diverse with relation to performance development. The findings suggested negative outcomes, positive outcomes and mixed results. This will be discussed below.

Firstly, the findings of one study suggested a negative outcome. Hasker's (2010) study examined the efficacy of the MAC programme in comparison to a PST program for enhancing athletic performance. The findings suggested that the MAC group did not show significant increases in flow when compared to the mental training group. There were also no differences between the groups when it came to thought suppression.

Secondly, the findings of two other studies had mixed outcomes. De Petrillo et al., (2009) studied the effects of MSPE on runners and found no significant enhanced athletic performance. Kaufman et al., (2009) assessed how MSPE affected the flow states and certain performance-related psychological characteristics and discovered no significant changes in trait flow.

Lastly, the majority of studies concluded positive findings, as the MAC approach was an effective building block for performance development. Bernier (2009) studied the link between mindfulness and acceptance approaches and sport performance. The findings suggested that characteristics of mindfulness and acceptance are linked to optimal performance states and enjoyment. Gooding and Gardner (2009) explored the role of mindfulness, preshot routine and trait arousal in basketball players. They discovered that increased experience resulted in some degree of mindfulness increase, and mindfulness levels were linked to free throw performance. Kee and Wang (2008) studied the

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relationship between mindfulness, flow disposition and mental skills adoption and found that athletes with the propensity to be more mindful are also more likely to experience flow states and show better mental skills adoption. Schwanhausser (2009) used one participant in their study to receive the MAC approach for performance enhancement. The findings suggested an increase in mindful awareness and acceptance of internal experiences and the ability to maintain mindful attention. Thompson et al., (2011) evaluated the long-term effects of MSPE across different populations of athletes. They found significant increases in the athletes' abilities to act with awareness and overall trait mindfulness and significant decreases in task-related worries and task-irrelevant thoughts. Wolanin and Schwanhausser (2010) investigated the potential efficacy of the MAC programme on performance enhancement and discovered that MAC holds the promise for enhancing the performance of athletes with minimal psychological barriers (PD).

10.2 PRESENT RESEARCH

10.2.1 Findings on Discovering Mindfulness, Acceptance and Commitment

10.2.1.1 Discovering Mindfulness

By learning experientially about mindfulness SS1, SS2 and SS3 discovered that it was possible for them to become aware of and focus on a specific task. In relation to this SS1 and SS4 also discovered that they were able to apply mindful attention while being aware of discomforts. However, despite the ability of SS2 and SS4 to be mindful, they discovered the same experience as SS3 in that there were times when the nature of mindlessness was present in their lives, as they felt they did not focus on one task at a time; thus they struggled at times to be in the here-and-now.

10.2.1.2 Discovering Acceptance

The four sport scientists all discovered that they were able to accept their internal experiences with specific reference to emotions as part of the human condition; SS3 also acknowledged thoughts as part of her internal experiences. They discovered that they did not need to deny them, nor fight them, nor did they have to react on them. In addition SS1 also discovered the same principal of acceptance was suitable for external distractions.

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The sport scientists also discovered that avoidance was present in their lives, despite being able to apply acceptance. SS1 discovered that negative thoughts affected her work performance, as she did not accept the thoughts. SS2 discovered that she did not apply acceptance in relation to administrative duties and in her recovery sessions. SS3 found that her athletes used avoidance as a means to internal experiences such as tiredness. SS4 discovered that avoidance was prominent in three areas; firstly, when she had limited time, secondly, when she experienced internal experiences such as tiredness and lastly, within her personal life with regards to bodily sensations.

10.2.1.3 Discovering Commitment

There were findings amongst the sport scientists that revealed similar discoveries about commitment. SS1 and SS2 discovered that by being committed through value-driven behaviour, they were able to enhance their work performance. SS2, SS3 and SS4 discovered the role of goals and values; they found that in order to achieve their goals they needed to be committed through the use of their values. SS3 also discovered that by being committed, she needed to accept discomforts in the service of her values.

10.2.2 Findings on the Application of Mindfulness, Acceptance and Commitment

10.2.2.1 Applying Mindfulness

1. Advantages in Applying Mindfulness

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Table 10.1

Advantages in Applying Mindfulness

SS1	SS2	SS3	SS4
• The advantage of focusing on sport science activities	• ---	• The advantage of focusing on sport science activities	• The advantage of focusing on sport science activities
• ---	• The advantage of focusing on one task at a time	• The advantage of focusing on one task at a time	• ---
• The advantage of focusing on administrative duties	• ---.	• ---	• ---.
• ---.	• The advantage of focusing on details	• ---	• ---.
• ---	• ---	• ---	• The advantage of focusing on goals

Three of the four sport scientists revealed that applying mindfulness had the advantage of focusing on sport science activities. SS1 and SS3 found that focusing on sport science activities helped them to give athletes instructions on what they should focus on. In addition, SS1 found that focusing on sport science activities assisted her to do activities in the correct manner and to get feedback from her athletes. SS4 revealed that focusing on sport science activities helped her to be mindful in physical sessions. She also found that her athletes were able to be more focused and that by using protocols as a means to be mindful was advantageous.

Two of the four sport scientists revealed that applying mindfulness had the advantage of focusing on one task at a time. Both SS2 and SS3 felt that this increased their work efficacy; SS3 also felt that it assisted her in her personal life.

There were some unique findings which were not shared by all the sport scientists. This included SS1's view that applying mindfulness had the advantage of focusing on administrative duties, as she could complete tasks and have more time on her hands. SS3 found that applying mindfulness had the advantage of focusing on detail, as she could detect the small details in athletes' performances which in turn increased her work performance. SS4 found that applying mindfulness had the advantage of focusing on goals, as clear goals kept her focused on the tasks at hand and thus discomforts did not

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affect her ability to lose focus. She also found that by giving goals to her athletes increased their focus of the activity.

2. Difficulties in Applying Mindfulness

Table 10.2

Difficulties in Applying Mindfulness

SS1	SS2	SS3	SS4
• The difficulty in relation to various clients while applying mindfulness	• The difficulty in relation to various clients while applying mindfulness	• ---	• The difficulty in relation to various clients while applying mindfulness
• The difficulty in relation to time while applying mindfulness	• ---	• The difficulty in relation to time while applying mindfulness	• ---
• ---	• The difficulty in relation to context while applying mindfulness	• The difficulty in relation to context while applying mindfulness	• ---
• ---	• ---	• The difficulty in relation to emotions while applying mindfulness	• The difficulty in relation to emotions while applying mindfulness
• ---	• The difficulty in relation to tiredness while applying mindfulness	• ---	• ---
• ---	• The difficulty in relation to routine while applying mindfulness	• ---	• ---
• ---	• The difficulty in relation to supervision while applying mindfulness	• ---	• ---
• ---	• ---	• The difficulty in relation to making mistakes while applying mindfulness	• ---
• ---	• ---	• ---	• The difficulty in relation to thoughts while applying mindfulness
• ---	• ---	• ---	• The difficulty in relation to administrative duties while applying mindfulness

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Three sport scientists found that when they applied mindfulness, they encountered difficulty relating to various clients. SS2 and SS4 had similar experiences in that they found group settings more challenging than working with individuals. SS1 also indicated that various clients such as children, elderly people and athletes contributed to the fact that she found it difficult, as they all had different outcomes.

Two sport scientists shared the same experience in that they found it difficult to apply mindfulness in relation to time. SS1 realised that it was difficult to apply mindfulness in the beginning, but as time progressed it became more effortless. SS3 addressed the difficulty that she had limited time and as a result she moved from one activity to another without being mindful of each activity.

Two sport scientists found it difficult to apply mindfulness in relation to the context. Both SS2 and SS3 found that when there were a lot of distractions, they found it challenging to be mindful. They use the example of being on a tennis court or in the lab.

Two of the sport scientist realised that emotions affected their abilities to stay mindful. SS4 also commented that this is particularly relevant in her work setting, but that emotions related to personal issues did not affect her mindfulness.

There were unique findings amongst the sport scientists related to the application of mindfulness which were not shared by the rest of the group. SS2 found that she was more distracted when she became tired and as a result she found it difficult to be mindful. She also acknowledged that if she was stuck in the same routine, it was more challenging to apply mindfulness. Lastly, she found that when she had to train students and do supervision, it was difficult to stay mindful. SS3 had a unique experience in that she found it difficult to apply mindfulness when she made mistakes, as she would rather focus on the mistake than the task. SS4 had two unique experiences in relation to the difficulty in applying mindfulness. The first was related to thoughts; she found that thoughts associated with the belief that she is not doing things right made it difficult to be mindful. And secondly, administrative duties and monotonous tasks made it difficult for her to be mindful.

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10.2.2.2 Applying Acceptance

1. Advantages in Applying Acceptance

Table 10.3

Advantages in Applying Acceptance

SS1	SS2	SS3	SS4
• ---	• ---	• The advantage of applying acceptance to administrative duties	• The advantage of applying acceptance to administrative duties
• ---	• ---	• The advantage of applying acceptance to sport science work	• The advantage of applying acceptance to sport science work
• The advantage of applying acceptance through alternative plans	• ---	• ---	• ---
• ---	• The advantage of applying acceptance in training sessions	• ---	• ---
• ---	• The advantage of teaching acceptance through physical activities	• ---	• ---

SS3 and SS4 had a mutual experience related to the application of acceptance. Both found that applying acceptance to administrative duties was advantageous, as it decreased the time they spent on activities and thus they could finish on time, and it also made them more efficient in their work.

Two of the sport scientists shared that they found that applying acceptance to sport science work proved to be advantageous. SS3 realised that when she applied acceptance in her sport science work, it increased her confidence and kept her calm. SS4 recognised that she could accept various situations in work, especially high pressure situations.

SS1 had the unique experience of noticing that acceptance had the advantage of allowing her to move on when things did not go according to plan; she could easily move on to an alternative plan. SS2 encountered two unique experiences related to the advantages in applying acceptance. Firstly, she discovered the advantage of applying acceptance in training sessions; she found that when she used

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the principle of acceptance in her training sessions, it assisted her athletes during competitions. Secondly, she discovered the advantage of teaching acceptance through physical activities; by doing this, it improved the way her athletes carried out activities.

2. Difficulties in Applying Acceptance

Table 10.4

Difficulties in Applying Acceptance

SS1	SS2	SS3	SS4
• The difficulty in relation to time when applying acceptance	• ---	• ---	• The difficulty in relation to time when applying acceptance
• The difficulty in relation to various clients when applying acceptance	• ---	• ---	• The difficulty in relation to various clients when applying acceptance
• ---	• The difficulty in relation to tiredness while applying acceptance	• ---	• The difficulty in relation to tiredness when applying acceptance
• ---	• The difficulty in relation to pressure while applying acceptance	• ---	• ---
• ---	• ---	• The difficulty in relation to uncertainty while applying acceptance	• ---
• ---	• ---	• The difficulty in relation to sport science activities while applying acceptance	• ---

Two sport scientists shared that due to limited time in a day, they found it difficult to apply acceptance in their sport science sessions, especially since they were not aware of what was going on in each athlete's life.

SS1 and SS4 found it difficult to apply acceptance to various clients. SS1 specifically found the application of acceptance difficult when she worked with athletes that portrayed a negative attitude, while SS4 found team settings to be difficult.

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A joint experience of finding it difficult to apply acceptance due to tiredness was shared by two sport scientists. SS2 felt that when it came to the end of the year, she was more tired, and that made it difficult to apply acceptance. SS4 found that when she was tired, she would rather apply avoidance over acceptance.

Two sport scientists had unique experiences pertaining to the difficulties in applying acceptance. SS2 found the difficulty in relation to pressure while applying acceptance. She realised that her athletes found it more difficult to apply acceptance in low pressure situations than high pressure situations such as tournaments and competitions. SS3 had two unique findings; the first relates to the difficulty in relation to uncertainty while applying acceptance. When she felt unsure or incompetent of a task, it was difficult to apply acceptance, as she would rather avoid the situation by means of procrastination. The second finding relates to the difficulty in relation to sport science activities while applying acceptance. When her athletes struggled with activities, it was difficult for them to apply acceptance, as they would rather leave the activity and continue on with the next activity.

10.2.2.3 Applying Commitment

1. Advantages in Applying Commitment

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Table 10.5

Advantages in Applying Acceptance

SS1	SS2	SS3	SS4
• ---	• The advantage of value-driven behaviour	• The advantage of value-driven behaviour	• The advantage of value-driven behaviour
• The advantage of being committed through goals	• ---	• ---	• ---
• The advantage of commitment on work-life realities	• ---	• ---	• ---
• ---	• The advantage of having goals and values	• ---	• ---
• ---	• The advantage of the value of responsibility	• ---	• ---
• ---	• The advantage of the value of equality	• ---	• ---
• ---	• ---	• ---	• The advantage of the value of prioritizing

Three sport scientists shared a mutual experience with regards to the advantage of value-driven behaviour. SS2 and SS3 expressed that being committed through value-driven behaviour assisted their athletes to increase their work performance. SS2 and SS4 also expressed that being value-driven was advantageous to their work, as SS4 could manage all her responsibilities with different teams despite discomforts.

Unique experiences regarding the advantages of applying commitment were found with three of the sport scientists. SS1 realized the advantage of being committed through goals in her work. This helped her to achieve more in her work, for example reaching her targets. Another experience by SS1 was the advantage of commitment on work-life realities, as this assisted her to have a more balanced outlook on the interplay between her work-life situations.

SS2 shared three unique experiences. The first experience relates to how she discovered the difference between setting goals and being committed through values. She found this useful in her everyday life, as she was able to achieve her goals by staying committed to her values. The second experience relates to how she needed to be responsible for several activities inside and outside of work. This seemed to be challenging, but she was able to stay committed through the value of

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responsibility. The last experience relates to how SS2 was able to apply the value of equality as a means to stay committed when she had to work with different and sometimes difficult athletes.

SS4 also shared one unique experience; she acknowledged the advantage of the value of prioritizing. She found that when she was able to prioritize her tasks, she could complete each task, as she was driven by her values.

2. Difficulties in Applying Commitment

Table 10.6

Difficulties in Applying Commitment

SS1	SS2	SS3	SS4
• The difficulty in relation to time when applying commitment	• The difficulty in relation to time when applying commitment	• ---	• ---
• The difficulty in relation to various clients when applying commitment	• ---	• ---	• The difficulty in relation to various clients while applying commitment
• ---	• The difficulty in relation to emotions when applying commitment	• ---	• The difficulty in relation to emotions while applying commitment
• The difficulty in relation to work-life realities when applying commitment	• ---	• ---	• ---
• ---	• The difficulty in relation to values and clients	• ---	• ---
• ---	• ---	• The difficulty in relation to tiredness when applying commitment	• ---
• ---	• ---	• ---	• The difficulty in relation to colleagues values while applying commitment

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Both SS1 and SS2 shared that they had difficulty in relation to time when applying commitment. SS1 referred to how during specific times it would be more difficult to apply commitment. She uses the example of long working days. SS2 felt that if she had more time to process her thoughts, it might have been easier to apply commitment.

Two sport scientists experienced difficulty in relation to various clients when applying commitment. SS1 found it difficult to be committed to clients that showed no interest to get better, while SS4 found it difficult to apply commitment during individual sessions, as these athletes seemed to focus more on their emotions than on their values.

SS2 and SS4 acknowledged the difficulty in relation to emotions when applying commitment. Both these sport scientists realized that the way they felt affected how they dealt with their athletes, thus they were emotion-driven and not valued-driven.

The four sport scientists had unique experiences pertaining to the difficulties in applying commitment. SS1 felt that if was difficult to apply commitment in her professional life; however, in her personal life, she found this principle easier. SS2 found the difficulty in relation to values and clients, as the athletes that she worked with were not able to use values as a means to commit. SS3 discovered the difficulty relating to the application of commitment and to act on values when tiredness was present. SS4 shared that being considerate of her colleagues' values made it difficult to apply commitment.

10.3 CONTRIBUTIONS

The first contribution is that this research study included sport scientists as participants. This stems from the fact that previous MAC studies did not include other important role players (e.g. coaches, parents and the multi-disciplinary team which includes dieticians, doctors, sport scientists, physiotherapists, biokineticists and biomechanical analysts) as participants within the sport community, but focused mainly on athletes (Bernier et al., 2009; De Petrillo et al., 2009; Gooding & Gardner, 2009; Hasker, 2010; Kaufman et al., 2009; Kee & Wang, 2008; Schwanhausser, 2009; Thompson et al., 2011; Wolanin & Schwanhausser, 2010).

The second contribution stems from the fact that limited research has been conducted in the South African context, as research has been done in the USA, Europe (France), Asia (Singapore) and Germany (Bernier et al., 2009; De Petrillo et al., 2009; Gooding & Gardner, 2009; Heinz et al., 2011;

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Hasker, 2010; Kaufman et al., 2009; Kee & Wang, 2008; Schwanhausser, 2009; Thompson et al., 2011; Wolanin & Schwanhausser, 2010). Therefore, my research will contribute to MAC research in the South-African context.

The third contribution stems from the fact that limited MAC research studies used a qualitative methodology, as most have been done using a quantitative methodology (De Petrillo et al., 2009; Gooding & Gardner, 2009; Hasker, 2010; Kaufman et al., 2009; Kee & Wang, 2008; Thompson et al., 2011; Wolanin & Schwanhausser, 2010). Only one study used a qualitative methodology (Bernier et al., 2009) and one study employed a mixed methodology (Schwanhausser, 2009). Therefore, my study contributes to qualitative MAC research.

The fourth contribution of my study signifies growing research on the MAC approach in the field of sport psychology, as my study is done from the discipline of sport psychology. Previous research on the MAC approach to performance development has been done within psychology in general, and sport psychology specifically (Bernier et al., 2009; De Petrillo et al., 2009; Gooding & Gardner, 2009; Hasker, 2010; Kaufman et al., 2009; Kee & Wang, 2008; Thompson et al., 2011; Schwanhausser, 2009; Wolanin & Schwanhausser, 2010).

The fifth contribution of my study is that it employs an ecological perspective to the MAC approach with regards to performance development. This stems from the fact that the MAC approach to performance development mainly embraces an individualistic perspective in that athletes are responsible for their performance development through the services of sport psychologists/sport counsellors leaving out all the other role players. Therefore, I used sport scientists in my research to include other role players to enhance their work performance, thus employing an ecological perspective.

10.4 LIMITATIONS

10.4.1 Limitations of Previous Research

The first limitation is that none of the MAC interventions followed the same programmes. One programme included an adapted MAC programme (Bernier et al., 2009), another included a seven module MAC programme (Hasker, 2010; Schwanhausser, 2009; Wolanin & Schwanhausser, 2010), while the majority of the studies focused on mindfulness training in order to enhance the athletes'

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performance (De Petrillo et al., 2009; Gooding & Gardner, 2009; Kaufman et al., 2009; Kee & Wang, 2008; Thompson et al., 2011).

The second limitation is that athletes had to adhere to training programmes which limited the time that researchers could spend with athletes (Gardner & Moore, 2012). This limitation can lead to some uncertainty as to how much (total hours and number of sessions) MAC sessions are required to see performance outcomes.

The last limitation is that MAC studies did not include other important role players (e.g. coaches, parents and the multi-disciplinary team which includes dieticians, doctors, sport scientists, physiotherapists, biokineticists and biomechanical analysts) as participants within the sport community, but focused mainly on athletes (Bernier et al., 2009; De Petrillo et al., 2009; Gooding & Gardner, 2009; Hasker, 2010; Kaufman et al., 2009; Kee & Wang, 2008; Schwanhausser, 2009; Thompson et al., 2011; Wolanin & Schwanhausser, 2010).

10.4.2 Limitations of Present Research

The first limitation stems from the notion that MAC activities could be made more relevant to sport scientists in order for them to become experienced when they were in the work place. One way to address this is to give sport scientists questions that they can use in their work as a means to apply the MAC principles in their work place.

The second limitation is that the MAC principles were explained as separate themes, namely mindfulness, acceptance and commitment. As a result this may have influenced the participants to use the entire MAC principles in its totally. A recommendation would be to explain the MAC principles as a whole.

The third limitation is that the facilitation of the MAC programme was administered in a one day workshop. This may have influenced the participants' ability to understand the MAC principles, which may have had an effect on how they applied it in their work. As a means of psycho-education the duration of the MAC programme needs to take longer than a day, for example once a week for four to six consecutive weeks.

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The fourth limitation is that participants were interviewed two times over a period of three months. This short time span may have an effect on how participants applied the MAC principles, as they only had limited time. One recommendation is to give participants longer time to apply the MAC principles and to follow up on a regular basis to make sure that they understand the principles and are using them correctly.

The fifth limitation of this study is that only female participants were represented in the sample. The inclusion of males could have resulted in different findings.

Conclusion

This research project aspired to uncover the personal experiences of the sport scientists who participated in the MAC programme. A summary of the findings was presented with the purpose of addressing the research questions of this study. Furthermore, the contributions and limitations of this study were described.

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APPENDICES

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UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Faculty of Humanities
Department of Psychology

Dear Sport Scientist,

Thank you very much for taking the time to attend to my research information. I would like to share the following important information with you regarding my research project on value-driven performance development. Once you have read the information and are willing to participate in the project, please complete Section B.

Section A
Research Information

Information: I, Rozanne Maré, am currently enrolled for my MA Psychology degree at the University of Pretoria. Completion of this research project will fulfill the requirements of the abovementioned degree. Prof. L.H. Human from the Department of Psychology at University of Pretoria will be the research supervisor for this research project.

Purpose: I am interested in sport scientists' experience of the value-driven Mindfulness-Acceptance-Commitment (MAC) approach to performance development and how this can be applied to your work in the laboratory, gymnasium and on the field.

Title: Performance development of sport scientists: a Mindful-Acceptance-Commitment (MAC) approach.

Material: The research project is qualitative in nature and will involve gathering the following research material from you over a period of six months:

1. A one hour semi-structured interview with the aim of determining your previous experience with sport psychology

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2. After attending the one-day MAC-workshop, a second one hour semi-structured interview will be conducted with you in which you can give a detailed account of your experience with the MAC-approach to performance development, with specific reference to what you have learnt regarding the value-driven performance development.

3. A third thirty minutes semi-structured interview will be conducted with you in which you can give a detailed account of your experience working (in the laboratory, gymnasium and on the field) with the MAC-approach to performance development after having had two-three months working experience with this approach.

4. A fourth thirty minutes semi-structured interview will be conducted with you in which you can give a detailed account of how you have transferred any of your MAC-approach to performance development experiences to the athletes that you work with, after having had four-five months working experience with this approach.

These accounts of your experiences will be the research material. Every attempt will be made to provide an accurate reflection of your experiences in the research project. I will be conducting the interview in my capacity as the researcher

The research material will not be used for any other purpose. The completed research project will be archived by the University of Pretoria.

Procedures: You will be required to complete the following procedure over a six month period:

1. Complete a one hour interview approximately two months before attending the MAC-workshop on a date that will suit us both. The interview will be video recorded for the purpose of accurately transcribing the interview. After the interview I will transcribe the material. This initial transcription will be shared with you to confirm your agreement of the experiences contained in the material.

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2. Attend a full-day workshop free of charge where you will engage with the MAC-approach to performance development. I will be the presenter of the MAC-approach workshop.

3. Participate in the one hour second interview on a date convenient for both of us, within one week of attending the MAC-workshop. The interview will be video recorded for purpose of accurately transcribing the interview. After the interview I will transcribe the material. This initial transcription will be shared with you to confirm your agreement of the experiences contained in the material.

4. Participate in the third thirty minutes interview two-three months following the MAC-workshop. The interview will be video recorded for purpose of accurately transcribing the interview. After the interview I will transcribe the material. This initial transcription will be shared with you to confirm your agreement of the experiences contained in the material.

5. Participate in the fourth thirty minutes interview four-five months following the MAC-workshop. The interview will be video recorded for purpose of accurately transcribing the interview. After the interview I will transcribe the material. This initial transcription will be shared with you to confirm your agreement of the experiences contained in the material.

6. Following the completion of the research process I will provide you with feedback regarding the findings of the research project. The video recordings will be deleted after the completion of the research process.

Risks: There are no perceived physical or psychological risks for you while participating in the research project. The research study will us use a psycho-educational process where you as the participant will learn about the principles of the MAC-approach through participating in the MAC-workshop. The interview process will not include any personal questions and will only be interested in your initial experience of sport psychology, your experience with the MAC-approach, your experience of applying the

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MAC-principles to your work and your experience of transferring the MAC-principles to the athletes.

Benefits: There are no financial gains for participating in the research project, but you may benefit personally from knowledge and skills gained from attending the MAC-approach workshop. The athletes that you work with could also benefit as you will be better equipped to use your knowledge of the MAC-approach to performance development in your work with the athletes.

Rights: Participation is entirely voluntary. You may withdraw your participation at any point and without any negative consequences in doing so.

Confidentiality: Information will be treated as confidential. Anonymity will be assured at all times. Should you wish to withdraw from participating in the research project both the video recordings and transcriptions will be destroyed.

Material: After completion of the research project, the transcribed material will be stored in the Department of Psychology at the University of Pretoria for 15 years. The research material will not be used for any other purpose. The completed research project will be archived by the University of Pretoria.

Researcher: If clarity or more detailed information is needed, please do not hesitate to contact me. My contact details are as follows:

Name: Rozanne Maré
Cell no.: 082 467 0669
E-mail: rozannemare@hpc.co.za

Researcher: ..... (Rozanne Maré)
Date: .....

Research Supervisor: ..... (Prof. L.H Human)
Date: .....

Head of Department: ..... (Prof. D. Maree)
Date: .....

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SECTION B

RESEARCH CONSENT

I, ... (Full Name and Surname) hereby acknowledge that I have read and understand the research information as described in Section A.

Please indicate whether you would like to participate/decline to participate in this study by marking the appropriate statement:

I agree to participate	
I decline to participate	

Participant: .....

Date: .....

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UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

hpc
University of Pretoria

27 February 2012

Consent Letter

I, Mr. Toby Sutcliffe (CEO, High Performance Centre) hereby grant permission to Rozanne Maré (student no: 22210220) to use the Sport Scientists of the Institute for Sport Research (ISR) affiliated to the High Performance Centre (hpc) for her research study. I grant her permission to make use of the premises of the hpc to present the Mindfulness-Acceptance-Commitment (MAC) workshop and to conduct the relevant interviews needed to complete her MA research project with the proposed title of:

Performance development of sport scientist: A Mindfulness-Acceptance-Commitment (MAC) approach.

For any inquiries please feel free to contact me on 012 362 9800.

Mr. Toby Sutcliffe
CEO hpc

TuksSport (Pty) Ltd. t/a hpc I Reg. No. 2001/020098/07 I Burnett St. I Pretoria I P.O. Box 14622 I Hatfield I 0028
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hpc
University of Pretoria

27 February 2012

Consent Letter

I, Mrs. Monja Human (Resident Psychologist, High Performance Centre) hereby grant permission to Rozanne Maré (student no: 22210220) to use the Sport Scientists of the Institute for Sport Research (ISR) affiliated to the High Performance Centre (hpc) for her research study. I grant her permission to make use of the premises of the hpc to present the Mindfulness-Acceptance-Commitment (MAC) workshop and to conduct the relevant interviews needed to complete her MA research project with the proposed title of:

Performance development of sport scientist: A Mindfulness-Acceptance-Commitment (MAC) approach.

For any inquiries please feel free to contact me on 012 362 9850.

Mrs. Monja Human
Resident Psychologist hpc

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27 February 2012

Consent Letter

I, Prof. Ernst Krüger (Director, Institute for Sport Research) hereby grant permission to Rozanne Maré (student no: 22210220) to use the Sport Scientists of the Institute for Sport Research (ISR) affiliated to the High Performance Centre (hpc) to complete her MA research project with the proposed title of:

Performance development of sport scientist: A Mindfulness-Acceptance-Commitment (MAC) approach.

For any inquiries please feel free to contact me on 012 420-6032.

_____

Prof. Ernst Krüger
Director ISR

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