

CHAPTER 5: RESEARCH DESIGN AND METHODOLOGY

5.1 INTRODUCTION

In Chapter One an orientation of the research was provided. This study focuses on the needs and competencies of school sport managers. These are required for the sport management training of educators, in accordance with the diverse needs of South African schools (cf. par. 1.3.2, p. 12). As a result of the problem statement referred to in Chapter One, the all-encompassing aim of this study is to develop a sport management programme for educator training. It is essential to analyse the existing knowledge, as a background to the current study. In this way, the researcher endeavours to generate new knowledge, which could make sport management and educator training more purposeful, efficient and sustainable. Consequently, this chapter strives to operationalise the theme of the research design and methodology in the current study, as well as to substantiate the choices made in the study.

The research design is applied so that suitable research methods are used to ensure the attainment of the goals and objectives set out in Chapter One. Hence the **reason (rationale)** for a discussion of the research design and methodology: Firstly, this is to provide the plan or blueprint for the research. Secondly, this should enable the researcher to anticipate the appropriate research design, to ensure the validity of the final results. Nevertheless, it is important that different views are analysed; thereafter, the methodology will be discussed. However, first it is important to consider a theoretical framework for the research design.

5.2 THEORETICAL FRAMEWORK FOR THE RESEARCH DESIGN AND METHODOLOGY

One of the challenges facing the researcher is the difficulty in relating to and understanding the role and importance of theory in research. Consequently, the concept of theory necessitates some clarification. In this regard, Verma and Malick (1999:6) as well as Blumberg, Cooper and Schindler (2011:36) are of the opinion that the main role of theory is to help to guide the researcher. In the social sciences, it usually implies a set of statements describing and explaining the relationship between human behaviour and the factors that affect or explain it. Paraphrasing Best and Khan (2006:10), a theory could best be described as an attempt to develop a general explanation for some phenomenon. More specifically, a theory, according to these authors, defines non-observable constructs that are inferred from observable facts and events, and are thought to have an effect on the phenomenon under study. It further implies that a theory describes the relationship among key variables for explaining a current state or predicting future concurrences.

Thus, one could easily come to the conclusion that a theory is primarily concerned with providing an explanation; and that it therefore focuses on determining cause-and-effect relationships. On the whole a theoretical framework, consequently, helps the researcher summarise any previous information and to guide the future course of action. Simultaneously, the formulation of a theory may indicate missing ideas or links and the additional data required to fully understand how things are connected, and to establish sets of propositions or generalisations (Henning *et al.*, 2004:14).

A theory is thus an essential tool of research for stimulating the advancement of knowledge (Inglis & Maclean, 2005:17; Kawulich, 2009:37). Theory should, consequently, drive the research process and should provide a framework for action and for understanding. The view of authors and researchers can provide the impetus, and endorse the view and rationale for a discussion of the research design and methodology chapter.

Apart from a proper understanding of the concept of theory, the researcher also requires an understanding and knowledge of the related research philosophies that underpin the different principles of the research. In this study, the research philosophy that underpins the study is reflected in different principles, as outlined by different research paradigms. Thereafter, the different research paradigms are presented.

5.2.1 Research Paradigms

Paradigms play a fundamental role in science. The origin of the term paradigm is to be found in Thomas Kuhn's book called: *The structure of scientific revolutions* first published in 1962 (Mouton, 1996:203).⁷⁴ When Kuhn published the second edition of his book in 1970, the idea of a paradigm was already extant; and it drew particular attention to the role of paradigms in the history of the natural sciences. Researchers and authors, like Mouton and Marais (1990:150), Mouton (1996:203), Creswell (2007:19), Collis and Hussey (2009:55), Babbie (2010:33; 2011:34), De Vos and Strydom (2011:40), as well as Neuman (2011:94), were already using the term; and the supporting theory of paradigms has had a major impact on the philosophy and methodology of the social sciences.

In general, a paradigm is best described as a whole system of thinking (Neuman, 2011:94). In this sense, a paradigm refers to the established research traditions in a particular discipline (Mouton,

⁷⁴ For a detailed discussion, understanding and history of the development thoughts and problems addressed see: Kuhn, T (1962): *The structure of scientific revolutions*. Chicago: University of Chicago Press. 172 p; Kuhn, T. (1970): *The structure of scientific revolutions* (2nd Enlarged Edition). Chicago: University of Chicago Press 210 p and also Kuhn, T. (1996): *The structure of scientific revolutions* (3rd Edition). Chicago: University of Chicago Press. 212 p.

1996:203), or a philosophical framework, as Collis and Hussey (2009:55) opine. More specifically, a paradigm would include the accepted theories, traditions, approaches, models, frame of reference, body of research and methodologies; and it could be seen as a model or framework for observation and understanding (Creswell, 2007:19; Babbie, 2010:33; Rubin & Babbie, 2010:15; Babbie, 2011:32). A paradigm is thus a basic set of beliefs that guide action. Thus, paradigms play a vital role in the social sciences. Nevertheless, different authors and researchers assign different meanings to the concept of paradigms [(cf. Creswell (2009) and Livesey, (2011a)]. Creswell (2009:6) has chosen to use the term as a worldview. Hence, the use of the concept paradigm is metaphorical when applied to the social sciences, as opposed to the natural sciences.

In the natural sciences paradigms remain largely “hidden” in research work. But they affect the practice of research; and therefore, they need to be stated (Creswell, 2009:5). The roots of the qualitative (cf. par. 5.8, p. 328) and quantitative approaches (cf. par. 5.9, p. 333) extend into different philosophical research paradigms, namely those of positivism and post-positivism (Curtner-Smith, 2002:37; Rocco *et al.*, 2003a:20; Henning *et al.*, 2004:17,23; Druckman, 2005:5-8; Neuman, 2006:81; Cohen *et al.*, 2007:16; Flick, 2007:11; Gall *et al.*, 2007:16,31; Wisker, 2008:68; Collis & Hussey, 2009:55; Creswell, 2009:6,16; Gratton & Jones, 2010:23,26; Rubin & Babbie, 2010:37; Blumberg *et al.*, 2011:16; Denzin & Lincoln, 2011a:1; Lincoln *et al.*, 2011:117; Muijs, 2011:3,5). Post-positivism (post-modernism) is characterized by two sub-paradigms, namely interpretivism (constructivism) and critical theory (critical post-modernism), while realism is seen as a bridge between positivism and post-positivism (Blumberg *et al.*, 2011:18; 6 & Bellamy, 2012:60).

5.2.1.1 Positivism

Human beings are seen objectively, and as a result, social scientists look to different avenues to study human society (De Vos *et al.*, 2011b:5). Babbie (2011:35) states that the roots of positivism can be traced to Auguste Comte, who saw human beings as a phenomenon to be studied scientifically. Thus, positivism may be seen as an approach to social research that seeks to apply the natural science model of research as the point of departure for investigations of social phenomena and explanations of the social world (Denscombe, 2008:14; 2010b:120). The natural sciences are suitable for the study of the social world; and hence, many researchers assume that the positivist approach is scientific. Naturally, one would ask the question: What is positivism supposed to comprise?

In response, Glicken (2003:20); Denscombe (2010a:324) and Lincoln *et al.* (2011:107-108, 122) answer as follows: Positivism firstly entails a belief based on the assumption that patterns (trends),

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generalisations, methods, procedures, cause-and-effect issues are also applicable to the social sciences. This view of positivism maintains that the objects of the social sciences, namely people, are suitable for the implementation of scientific methods.

Welman et al. (2009:6) also link positivism directly to the scientific model. This model or approach strives to formulate laws applicable to populations. These said laws explain the causes of observable and measurable behaviour. The positivist researcher prefers working with an observable social reality; and such research would produce generalisations similar to those produced by the natural scientists. Positivists also believe that an objective reality exists outside personal experiences with its own cause-and-effect relationships (*Remenyi et al.*, 1998:32; *Saunders et al.*, 2000:85; *Riege*, 2003:77; *Neuman*, 2006:82; *Babbie & Mouton*, 2008:23; *Saunders et al.*, 2009:113; *Muijs*, 2011:4).

The positivist researcher maintains that it is possible to adopt a distant, detached, neutral and non-interactive position (*Morris*, 2006:3). A position such as this would enable the researcher to assume the role of an objective analyst, making detached interpretations about those data that have been collected in an apparently value-free manner. For the same reason, positivists prefer an analytical interpretation of quantifiable data (*Druckman*, 2005:5). The abstract ideas of the social relationship should, consequently, be linked to the precise measurements of the social world.

Secondly, positivism entails a belief that valid knowledge can only be produced on the basis of direct observation by the senses; and this would include the ability to measure and record what would be seen as knowledge. Observation in this sense means accepting only empirical evidence as valid evidence. Valid evidence is thus produced through the senses of sight, smell, touch, taste and hearing. It would clearly mean that there is no place for phenomena which cannot be observed either directly, through experience and observation, or indirectly, with the aid of instruments.

Moreover, it should be quite obvious that things that cannot be seen (observed), for instance people's thoughts and attitudes, cannot be accepted as valid evidence and knowledge. Thirdly, many accounts of positivism suggest that scientific knowledge is arrived at through the accumulation of verified facts. These facts feed into the theoretical edifice pertaining to a particular domain of knowledge. Thus, theory expresses and reflects the empirical research. Such findings are often referred to as laws pertaining to a particular field, namely empirically established regularities (*Bryman*, 2005:15).

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Fourthly, as De Vos *et al.* (2011b:6) remind us, scientific theories are seen by positivists as providing hypotheses, which are then submitted to empirical testing. This implies that science is deductive, as it seeks to extract specific propositions from general accounts of reality. Logically, this would entail the construction of a specific theory to explain the laws in a particular field. A hypothesis is thereby derived to enable the researcher to submit the hypothesis to rigorous empirical examination before rejecting, revising or accepting the hypothesis.

Finally, positivism is also taken to entail a particular stance in relation to values. Consequently, the researcher would need to be purged of values, since these could impair the objectivity and so undermine the validity of knowledge. Positivism's position on values is to draw a sharp distinction between issues, statements and norms (Flick, 2007:12). While positivists recognize that they can investigate the implications of a particular normative position, they are unable to verify or disprove the position itself.

In conclusion, regarding scientific theories, it may then be stated that the positivist is concerned first and foremost with the creation of laws applicable to all people at all times (Welman *et al.*, 2009:192). Collis and Hussey (2009:58, 61-62) proceed from the previous argument when they clearly state that the purpose of positivism is to seek generalisations (theories). The said generalisations are, however, based on and grounded in the natural science laws, which are not necessarily applicable to social structures. In sum, positivism "*equates legitimacy with science and scientific methods*" (Scott & Usher, 2011:13); and as such, it involves a number of assumptions, (cf. paragraph 5.2.1.1, p. 301). In this thesis, generalisations are sought in Chapter Four, where the core contents of different sport management and educator training programmes are analysed to determine their common content.

The positivist tradition however, has not met with approval and support by all scientists, since it has produced some serious problems as well as some questionable assumptions. Henning *et al.* (2004:17), Babbie (2010:41), Rubin and Babbie (2010:15) as well as Denzin and Lincoln (2011a:8) point out that early positivist social scientists assumed that social reality can be explained in rational terms, because people always act rationally. Babbie (2010:41) in particular states that people do not always act rationally. Nonetheless, even non-rational behaviour could be rationally understood and predicted. Babbie (2010:42) further alleges that everybody acts, thinks and interprets subjectively to a certain extent. This subjectivity is unique to any individual; and the endeavour for objectivity could best be obtained through the discovery of intersubjective interests between individuals. Inevitably, the positivist view would not agree with this approach.

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Following Babbie (2010:44; 2011:44), it was rather difficult to choose the best suitable paradigm among those presented in this chapter. Nonetheless, because this study does not focus on the natural sciences, it cannot be aligned entirely with the positivist paradigm (approach), as will become evident in the ensuing paragraphs of this chapter. It is nevertheless important to pay careful attention to Babbie (2011:44) when he implicitly warns against the total negation of the positivist paradigm, because each paradigm compensates for the other by suggesting complementary perspectives. The different paradigms should be seen as different arrows that could be used as the situation demands or requires.

There are two more important principles of positivism: to isolate, analyse and understand the causes of human behaviour. For Livesey (2011b:3) the basic thought is that behaviour is caused (initiated) by something, which if understood, could be applied to explain and predict human behaviour. The second principle is concerned with objectivity. Gratton and Jones (2010:25) firmly believe that for the positivist, there would be an emphasis on methodology to facilitate replication and quantifiable observations for statistical analysis. Here, the researcher is independent of and neither affects nor is affected by the subject of the research. Welman *et al.* (2009:6) clearly state that the positivist approach underlies the natural scientific method in human behavioural research and holds that research should be limited to what can be observed and measured objectively. In relation to the current study, this implies that the generation of data should be independent of human opinions and judgment.

The researcher distributed a questionnaire to school sport managers at selected schools in a diversity of South African schools, and he assumed the role as observer of phenomena in a natural setting.

Qualitative methods of data generation would not fit easily within the positivist approach to research (cf. par. 5.8, p. 328). For this very reason, Curtner-Smith (2002:38) states that positivist sport pedagogy researchers specifically tend to use quantitative methods to gather measurable numerical data. In this way, their work is aimed at the provision of numerical illustrations of teaching or coaching (descriptive studies), discovering relationships between components of teaching or coaching (correlation studies), or attempting to change some aspect of teaching or coaching (experimental studies).

Wisker (2008:65); Welman *et al.* (2009:9), as well Gratton and Jones (2010:25), also propose the use of quantitative methods, where control groups could be used, for the positivist approach. Muijs

(2011:3), as well as Thomas *et al.* (2011:19,21) also mention the use of experimental and survey methods to collect data; but they indicate that the use of these methods would not necessarily produce understanding, explanations and interpretations.

Concurring with Gratton and Jones (2010:25), one could say that the positivist approach undeniably has strengths, notably in terms of precision, control and objectivity. Such sport-related theories naturally would be the result of statistical analysis, which removes the need for more individualistic or intuitive interpretation. Positivist research is also generally more straightforward in terms of planning, simply because the data are collected in one go, and the analysis of all the data takes place at the same time. Finally, it emerged during the literature review that in the early years of sport-related research, such research was dominated by the positivist approach. For reasons, which will be outlined below, alternative approaches are now becoming more widespread. One of these approaches is known as post-positivism.

5.2.1.2 Post-positivism

Dissatisfaction with positivism became increasingly widespread, thereby increasing the appeal of post-positivism (Teddlie & Johnson, 2009:68). Because of the increasing appeal of post-positivism, post-positivistic works gained credibility throughout the social science community. Teddlie and Johnson (2009:68) cite the works of post-positivists: Popper (1934; 1959), Hanson (1958), Toulmin (1960), Campbell and Stanley (1963), Hempel (1965), Kuhn (1962; 1970; 1996), Phillips (1987; 1990), as well as Phillips and Burbules (2000).

Post-positivism will not be considered a distinct philosophical tradition in its own right. Creswell (2009:6) sees post-positivism as an extension of positivism, since it represents the thinking after positivism, challenging the traditional notion of the absolute and objective truth of knowledge in the social sciences. Gratton and Jones (2010:26-27) hold the view of post-positivism that in reality, it is not possible to gain understanding merely through measurement. Post-positivist approaches show a much greater openness to different methodological approaches, and often include qualitative, as well as quantitative methods. This allows for the development of alternative research strategies to find information in unlikely and creative ways (Glicken, 2003:28). Additionally, researchers in this paradigm normally believe in multiple perspectives from participants rather than a single reality (Creswell, 2007:20; 2009:7).

Positivism contends that there is an objective reality out there to be studied, captured and understood, whereas post-positivists argue that reality can never be fully apprehended, only

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approximated (De Vos *et al.*, 2011b:7). According to Denzin and Lincoln (2011a:8), post-positivism relies on multiple methods for capturing as much of reality as possible. At the same time, emphasis is placed on the discovery and verification of theories. Traditional evaluation criteria, such as internal validity, are stressed, as is the use of qualitative procedures that lend themselves to structured (sometimes statistical) analysis. Computer-assisted methods of analysis that permit frequency counts, tabulations and low-level statistical analyses may also be employed.

The post-positivist researcher focuses on the understanding of the study as it evolves during the investigation. The study begins with an area of study. A question and a hypothesis are conjectured before starting the study (Morris, 2006:77). Post-positivists believe that positivist research is often difficult and impractical for many forms of social research (Glicken, 2003:27). Emanating from any research, there are tendencies towards a specific notion which can – by repetition – bring valuable data to light.

Post-positivists accept that the natural sciences do not provide the only model for social research. However, they do believe in an objective reality. Rather than focusing on certainty and absolute truth, the post-positivist will focus on confidence: How much can the researcher rely on his/her findings? How well can one predict certain outcomes?

The proponents of post-positivistic research argue that research, even *scientific research*, is frequently a product of historically located practices. Post-positivism reflects a distrust of absolutes and foundational truths; following the correct method can no longer guarantee true results. Instead of only one truth, there are many. Truth is fundamentally dependent on language; and it is a socially constructed phenomenon. This distorts the reality on which positivism is built.

Post-positivism provides the researcher with more subjective measures for gathering information. The degree of honesty of the researcher could be a problem in this kind of research. Could the subjectivity in a post-positivistic study influence the data negatively? Glicken (2003:29) is convinced that post-positivist research offers the social scientist the ability to do research on a small scale by using very creative methodologies. Thus, a mixed method of research was used (cf. par. 5.7, p. 321). The researcher employed in-depth interviews and questionnaires to collect the data for the investigation.

The limitations of positivism have led to the development of an alternative perspective – a collection of related perspectives – those of interpretivism.

5.2.1.3 Interpretivism

The interpretive paradigm is also called the phenomenological approach. This is an approach that aims to understand people (Babbie & Mouton, 2008:28). According to De Vos *et al.* (2011b:8) and Neuman (2011:101), interpretive social science can be traced to Max Weber (1864-1920) and Wilhelm Dilthey (1833-1911). Dilthey argues that there are two fundamentally different types of science: the natural sciences and the human sciences. The former is based on *Erklärung*, or abstract explanation. The latter is rooted in an understanding, or *Verstehen*, of the lived experiences of people (De Vos *et al.*, 2011b:8; Neuman, 2011:101). Weber maintains that all humans are attempting to make sense of their worlds. In so doing, they continuously interpret, create, give meaning, define, justify and rationalise daily actions (Babbie & Mouton, 2008:28).

Interpretivism thus focuses on exploring the complexity of social phenomena with a view to gaining understanding. The purpose of research in interpretivism is understanding and interpreting everyday happenings (events), experiences and social structures – as well as the values people attach to these phenomena (Collis & Hussey, 2009:56-57; Rubin & Babbie, 2010:37). Interpretivists believe that social reality is subjective and nuanced, because it is shaped by the perceptions of the participants, as well as the values and aims of the researcher.

Gephart (1999:5) describes interpretivism as being directed on meaning, and understanding the social interactions between humans. Consequently, the mind interprets experience and events, and constructs meanings from them. Meaning does not exist outside the mind. Willis (2007:6), as well as Fouché and Schurink (2011:309) agree with Gephart (1999:5) when they reject the notion that the social sciences should apply research principles adopted from the natural sciences. Interpretivists believe that the subject matter of the social sciences is fundamentally different from that of the natural sciences. Consequently, a different methodology is required to reach an interpretive understanding or “*verstehen*” and an explanation that would enable the social researcher to appreciate the subjective meaning of social actions.

Reality should rather be interpreted through the meanings that people give to their life world. This meaning can only be discovered through language, and not exclusively through quantitative analysis (Schwandt, 2007:314-317).

Interpretivists further hold the view that the social world cannot be understood by applying research principles adopted from the natural sciences. The social sciences require a different research

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philosophy. The three basic principles of interpretivism are (Wisker, 2008:69; Blumberg *et al.*, 2011:17):

- The social world is constructed and given meaning subjectively by people. Human beings are subjects that have consciousness, or a mind; while human behaviour is affected by knowledge of the social world, which exists only in relation to human beings;
- The researcher is part of what is observed; and
- Research is driven by interests.

Interpretivists argue that simple fundamental laws cannot explain the complexity of social phenomena (Blumberg *et al.*, 2011:17). Interpretivists claim that an objective observation of the social world is impossible, as it has meaning for humans only, and is constructed by intentional behaviour and actions. Livesey (2011b:4) explains interpretivism as a method that sees the social world as something that can only be produced and reproduced on a daily basis by people. Something that holds true for the moment (now) might not necessarily hold true tomorrow, or in another society (social environment). Knowledge is developed and theory is built through developing ideas from observed and interpreted social constructions. As such, the researcher seeks to make sense of what is happening. This can even generate findings beyond the common scientific knowledge (Rubin & Babbie, 2010:37; Blumberg *et al.*, 2011:17). So, interpretivists attempt to understand subjective realities and to offer explanations, which are meaningful for the participants in the research.

The cause-and-effect relationship of positivism is rejected; since social circumstances and conditions continuously change. A third principle identified by Livesey (2011b:4), takes possession of the relativity of happenings (events) and experiences. The social world of people is understood differently in different situations – and in different ways. Livesey believes that everything in the social world is relative to all other happenings (events) and experiences.

The views of Gephart (1999:5); Schwandt (2007:314-317); Blumberg *et al* (2011:17) as well as Fouché and Schurink (2011:309) reiterate the view of Norbert Elias (1986:20) who argued, that positivist natural scientists believe that the method of natural sciences is the only legitimate method for scientific discovery. Elias (1986:20) states that it is possible to advance knowledge and to make discoveries in the field of sociology via methods very different from those of the natural sciences. In fact, it is the discovery, not the method that legitimizes research as being scientific.

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Interpretivists reject the notion that research is value-free; since the researcher's interpretation is also socially constructed, reflecting his/her motives and beliefs. Human interests not only channel our thinking, but also impact how the world is investigated, and how knowledge is constructed (Blumberg *et al.*, 2011:18). Hence, the approach to social phenomena for the current study should also reflect the currently common construction of knowledge; it thus implies the following assumptions:

- The social world is observed by seeing what meanings people give to it and interpreting these meanings from their viewpoint; and
- Social phenomena can only be understood by looking at the reality.

Gathering and measuring facts would consequently not disclose the essence of social phenomena; rather one would need to explore why different school sport managers and subject specialists (experts) have different experiences, and to understand how these differences result in the different constructions and meanings that people give to the social world. In this way, the researcher would be able to make sense of how different sport managers and other people interpret their social world. Thus, the researcher is required to dig into the processes of subjective interpretation, acknowledging the motivations, interests, intentions, beliefs, values and reasons, meaning-making and the self-understanding of the participants (Henning *et al.*, 2004:20; Blumberg *et al.*, 2011:18).

In so far as research methodology is concerned, Henning *et al.* (2004:20) hold that the interpretive understanding is grounded in an interactive, field-based inductive methodology, which in turn is intertwined in the practice within a specific context. Livesey (2011b:4) proposes that the best methods within the interpretive research paradigm are those of observation and interpretation. As a reason, he advances that the researcher should understand how human beings experience and interpret their world.

De Vos *et al.* (2011b:8) suggest the use of participant observation and field research techniques, where many hours and days are spent in direct contact with the participants. Transcripts, conversations and video-tapes may be studied, in order to gain a sense of subtle non-verbal communication or to understand the interaction in its real context (Neuman, 2011:101). The researcher engages in active collaboration with the participants to address real-life problems in a specific context; these are directed towards the offering and implementation of feasible solutions to the problem (Blumberg *et al.*, 2011:17).

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Gephart (1999:5) mentions that interpretivistic views tend to show a preference for methods, which do not only produce facts, but analyse and describe the meaning of the social world (situation). He proceeds to indicate that the primary analytical methods used in interpretative research are grounded theory and expansion analysis. The use of these methods points to the use of qualitative data-gathering methods, which suggest that the data are generated mainly through interactions like conversations and interviews.

Regular (constant) comparative analysis provides an alternative for statistical analysis, which bears closer relation to the positivist views. According to Gephart (1999:6-7), interpretivists mainly use comparative analysis as an analytical process to examine all the data in different steps, namely:

- Comparison of incidents relevant to the theoretical category;
- Integration of different categories and their properties;
- Delimiting the theory range; and
- Formulation of theory.

For many years the interpretive approach existed as the opposition to positivism (Neuman, 2006:94). Although some positivist social researchers accept the interpretive approach as useful in exploratory research, few positivists consider it to be fully scientific. Positivists place their emphasis on the individual's interpretation of social interaction (Gephart, 1999:5). The interpretivist research accepts the notion that knowledge and meaning are the results of interpretations. There is no objective knowledge which is independent of human thinking and reasoning. Central to all interpretivists is the concern with subjectivity, which in a sense seeks to show how variations in human meanings and sense-making generate and reflect differences in reified or objective realities, that is when one becomes detached from and lose sight of connections or relationship to something created by researchers (Neuman, 2006:97).

In other words, the idea of subjectivity is acceptable to interpretivists, and is supported and endorsed amongst others by Gephart, (1999:5). In addition, the interpretive approach is the foundation of social research techniques that are sensitive to context, that get inside the ways others see the world, and that are more concerned with achieving an emphatic understanding than with testing legalistic theories of human behaviour. The conclusion could be drawn that quantitative methods of generating data are more suitable for the positivist paradigm, while qualitative methods are more suitable for the interpretive paradigm.

The paradigm of realism also contributes significantly towards an understanding of the world of science, and more specifically the methodology and research design for the current study.

5.2.1.4 Realism

Realism is a research philosophy sharing the principles of positivism and interpretivism (Blumberg *et al.*, 2011:19). More specifically, realism accepts the existence of reality independent of human beliefs and behaviour. However, it also concedes that understanding people and their behaviour requires acknowledgement of the subjectivity inherent to humans. In the realists' view, there are social processes and forces beyond the control of humans, which affect their beliefs and behaviour (Saunders *et al.*, 2009:114). These processes and forces operate at the macro-level. At the micro-level (i.e. at the level of individual human beings), subjective individual interpretations of reality are important for a full understanding of what is happening.

These subjective interpretations are not unique, and people share similar interpretations, partly because the external forces at the macro-level influence everyone. Hence, research requires the identification of external factors, as well as the investigation of how people interpret and give meaning to their situations.

Livesey (2011c:1-3) explains the social world in relation to three important interrelated, philosophical assumptions that underpin the different paradigms, namely: ontology (what do we believe); epistemology (the science of knowing) and methodology (the science of finding out). Firstly, according to Livesey (2011c:1), researchers who view their world realistically generally accept the basic principles of the natural and the social sciences to be the same. Empirical evidence serves as proof for valid knowledge, but in itself it is not sufficient. The main objective of realism is thus to go beyond a description of relationships and to discover how such relationships came to being. Realists believe and are convinced that the social world has to be understood in its totality. That is to say, all parts of the social world are affected by the other parts. In conclusion, Livesey (2011c:4) proposes the use of focus groups or in-depth interviews to collect reliable and valid data for a study, in accordance with the realism paradigm.

What needs to be looked at more closely now is the Critical Approach.

5.2.1.5 The Critical Approach

In Chapter Two, the critical approach (theory) was discussed in more detail (cf. par. 2.3.3.3, p. 56). In the following discussion, only the most important aspects of this approach will be touched on.

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Critical theoretical approaches place a strong emphasis on historical and social contexts, in order to make sense of social phenomena (Lincoln *et al.*, 2011:99). This approach agrees with many of the criticisms that the interpretive approach levels at positivism, but it agrees with interpretive social science on some points. The main point of criticism levelled at positivism by the critical approach is the absolutising and idolisation of the objectivity principle. Cohen *et al.* (2007:26) and Neuman (2011:108) maintain that positivists are status-quo bound. Criticism against interpretivism centres around the emphasis placed on the feelings (opinion) – at the expense of broader trends. Critical researchers find interpretivism too subjective and relativistic (Neuman, 2011:108).

The critical approach stresses that reason is the highest potential of human beings, and by using reasoning it is possible to criticize and challenge the nature of existing societies (Blaikie, 2007:135). Consequently, the critical theory admits to bias being present in every action of a human being and expects the findings to support that bias (Glicken, 2003:23). The researcher should continue to be as objective as possible, and must scrupulously conduct the undertaken research in a manner so that bias does not affect the findings.

Patton (2002:130-131) adds that one of the most influential orientation frameworks is Critical theory. Critical theory seeks not merely to study and understand society, but rather to critique and change society. In other words, critical theorists, in questioning communal knowledge becoming a fetish, examine the process of gaining, maintaining and circulating existing power relationships. Influenced by Marxism, Critical theory provides a framework – of both philosophy and method – for approaching research and evaluation as fundamentally and explicitly political, and as change-oriented forms of engagement (Cohen *et al.*, 2007:26-27; De Vos *et al.*, 2011b:9).

Critical theoretical views see the current community (society) as a specific phase in a long, continuous process (Henning *et al.*, 2004:23; Lincoln *et al.*, 2011:98,100; Neuman, 2011:109). Supporters (followers) of the critical approach consider facts as being continuously influenced and affected by social, political and cultural factors. Babbie and Mouton (2008:36) refer to the critical theory as the exposure or liberation from historical, structural and a value-basis of social phenomena. For them, the critical approach emphasises becoming part and parcel of the everyday life-worlds of the people to be studied. Participants should feel free and encouraged to give their own view of their own situation and the world in which they live. The focus of the critical paradigm is thus on an understanding and practical transformation of social circumstances for emancipation and reinforcement. Consequently, one needs to look at the early work of Jürgen Habermas, who

CHAPTER 5: RESEARCH DESIGN AND METHODOLOGY

influenced the paradigm of critical theory, but was also the first to spell out the transformative and emancipatory motive in critical theory (Babbie & Mouton, 2008:34).

The intention of the critical theorists is not merely to understand situations and phenomena, but rather to bring about change in understanding situations and phenomena by being personally involved. The purpose of research should be to emancipate people through a critique of ideologies that reinforce inequality, while a clear activist approach is detected in their approach to research.

Some supporters (Skinner & Edwards, 2005:404-405) of the critical paradigm, prefer to support action research, but not all forms thereof. It may be said that for supporters of the critical paradigm, all research starts with a specific view; and to deny that a researcher has a point of view is in itself a point of view (Neuman, 2006:101; 2011:114).

This study indeed makes use of empirical data yielded, arise from a questionnaire, but individual interviews were used to generate non-empirical data, which fall outside the scope of positivism (cf. par. 5.2.1.1, p. 301). Thus aspects of both the positivist and post-positivist views are present. It is also important to state that the critical theory cannot be disregarded. The purpose of the critical theory is to bring about a more just, egalitarian society in which individual and collective freedoms are practised. On the whole, the difference in philosophical paradigms raises the question of whether the research should be addressed by a single research approach or by more than one approach.

The research problem, accompanying research questions and related research aims are of a multifaceted nature (cf. par. 1.1, p. 1; 1.3, p. 12). For this reason, both qualitative and quantitative approaches were selected for this research (cf. par. 5.8, p. 328; 5.9, p. 333). The combination of research approaches has led to the adoption of a ***pragmatic position*** in this research (Rocco *et al.*, 2003b:596; Creswell, 2007:22-23; Creswell & Garrett, 2008:327; Creswell, 2009:10-11; Teddlie & Johnson, 2009:73-74; Teddlie & Tashakkori, 2009:7-8; 15; 86-88; 90-93; Creswell & Plano Clarke, 2011:26;40-44;78). The research design will be described in detail in paragraph 5.4 (cf. p. 315). The fact that some of the other paradigms are also taken possession of, is acceptable for modern researchers (Gephart, 1999:5; Morgan, 2007:57,59,63). The reason for choosing a pragmatic research paradigm is because this particular position is regarded “*as the philosophic partner of mixed methods research*”, provides a workable solution to multifaceted research problems and offers a practical, “*middle ground*” orientation in relation to post positivism and interpretivism (Johnson & Onwuegbuzie, 2004:17,18). Hence following this, the research design

will be described in detail in paragraph 5.4 (cf. p. 316). The fact that some of the other paradigms are also taken possession of, is acceptable for modern researchers (Gephart, 1999:5; Morgan, 2007:57,59,63).

Mouton (2001:137) mentions that research problems are usually formulated in order to address “*real-life*” problems. These are problems related to everyday life in the social and physical world, like stress, unemployment, transformation, discrimination in sport, commercialization of school sport, violence, behaviour of sport fans, and many more. The next paragraph will analyse, describe and clarify the process of translating real life problems into research problems by means of a simple structure - The Three Worlds Framework.

5.3 THE THREE-WORLDS FRAMEWORK

Contemporary problems formulated as research problems, can be described by means of the “*Three-Worlds Framework*” developed in 1996 by Mouton (Babbie & Mouton, 2008:6). Subscribing to the view of De Villiers (2003:24), who applied the model specifically to sport management, the researcher will also apply the model of Mouton to sport management in the current study. The current study will use the model more specifically in relation to the management of school sport.

In the Three-Worlds model, the first distinction is made between the world of everyday life and knowledge (World 1); and the world of science and the search for truth by means of scientific research (World 2); while the final and last world is concerned with meta-science (World 3).

5.3.1 World 1: The world of everyday life and lay knowledge

Botes (2002:8) and Thomas *et al.* (2011:5) mention that the first world is directed to the world of everyday life. Botes specifically cites examples to be applied to sport management. In the current study, the focus is on sport management; this is the terrain of school sport management. The way (method or approach) in which research should be conducted acts as catalyst or determinant for research decisions and knowledge. In the management of school sport, lay knowledge would thus be seen as knowledge acquired through learning, experience, self-reflection, insight and wisdom and applied to solve problems, reach consensus, gain insight in everyday life at school and sport participation. Therefore the idea is essentially for the researcher to analyse, evaluate and test interpretations. The researcher needs to adopt a pragmatic interest that underlies knowledge production and utilisation in everyday life.

5.3.2 World 2: The world of science and the search for truth by means of scientific research

The second world of Mouton's framework is the world of science and scientific research. The second level is the level whereby the researcher actively functions (Second Order). The researcher is thus co-responsible for the school sport management practice. Mouton (2001:138) and Thomas *et al.* (2011:5;16-17) quite clearly distinguish between different "levels". In short, the first world focuses or adopts a pragmatic approach, while the second world focuses on and is directed towards the epistemology (truthful knowledge).

So far a clear distinction has been made between the world of everyday life (World 1) and the world of science (World 2). There is one more world, the world of meta-science that should be added to the picture.

5.3.3 World 3: The world of meta-science

In the previous paragraph, it was hinted that the third world introduces the concept of meta-science. This third world (meta-science) then has its origin in the prevalence and application of critical interest and reflection by scientists (practitioners). Scientists (researchers) constantly submit their decisions to quality checks, in order to attain to truthful and valid results. This has led to the formation of various meta disciplines (Mouton, 2001:138). Meta-disciplines developed over time include aspects like philosophy, ethics, methodology, sociology and history. Botes (2002:8) refers to this development of meta-sciences as a paradigmatic perspective. According to her, it implies a commitment to a collection of convictions or beliefs which are meta-theoretical (ontological), theoretical (epistemological) as well as methodological.

Mouton (2001:141) offers a schematic presentation. To apply this Three-World Framework specifically to the current study, it can be said that the three worlds are interactive and interrelated. The first world's real-life actions are internally influenced by outsiders. These actions are influenced by the methodological approaches or perspectives of the second world. Ultimately, the methodological approaches are based on and informed by the third-world's (meta-science) philosophical paradigms or approaches, as explained and described in paragraph 5.2.1 (cf. p. 300). It is important to realise that this research cannot be done haphazardly, but is bound to the actions of all three worlds.

It could be said that the Three-Worlds Framework illustrates close linkages between different forms of human knowledge – ordinary, scientific and meta-scientific knowledge. Over and above the

linkage between different forms of knowledge the said framework clearly indicates the close linkage between the different motives and interests that underlie the different forms of knowledge (the pragmatic, the epistemic and critical interests). It should nevertheless be stressed that The Three-Worlds Framework is a tool that helps one to organise one's thinking about the practice of scientific research. In the final analysis, the framework of Mouton is only as good as the use one makes of it.

5.4 RESEARCH DESIGN AND METHODOLOGY

Information obtained from the identification of management practices in schools should be used to develop a sport management programme for educator training in accordance with the diverse needs of South African schools. In this regard, Yiannakis (2000:119) and Thomas *et al.* (2011:3,11,17) state that researchers should be prepared to put their research to the test outside the academic world. This would enable the researcher to determine a possible gap in the sport management competencies school sport managers should have (possible) and currently have (actual) (cf. Ch. 6, 7).

For this reason, it is imperative for the researcher to be absolutely sure as to which approach or method would provide the information required (Druckman, 2005:46; Clough & Nutbrown, 2010:29,35). The research design should be scientifically grounded, as well as trustworthy and reliable (Churchill & Iacobucci, 2002:410,710,796,812-814; Bassey, 2003:116-119; Churchill & Iacobucci, 2005:410,710,796,812-814; Moss, 2007:470,475; Drew *et al.*, 2008:158; Iacobucci & Churchill, 2010:58,254; Cooper & Schindler, 2011:138-139).

5.4.1 Research Design

A research design focuses on the end-product and all the steps in the process to achieve that outcome. In this sense, a research design is viewed as the functional plan in which certain research methods and procedures are linked together to acquire a reliable and valid body of data for empirically grounded analyses, conclusions and theory formulation. The research design thus provides the researcher with a clear research framework; it guides the methods, decisions and sets the basis for interpretation. Bless, Higson-Smith and Kagee (2006:71) define research design as “... *operations to be performed, in order to test a specific hypothesis under a given condition*”.

Research design, according to Welman *et al.* (2009:46), is best described as the overall plan, according to which the respondents of a proposed study are selected, as well as the means of data collection or generation, while Babbie and Mouton (2008:74) describe research design as a plan or

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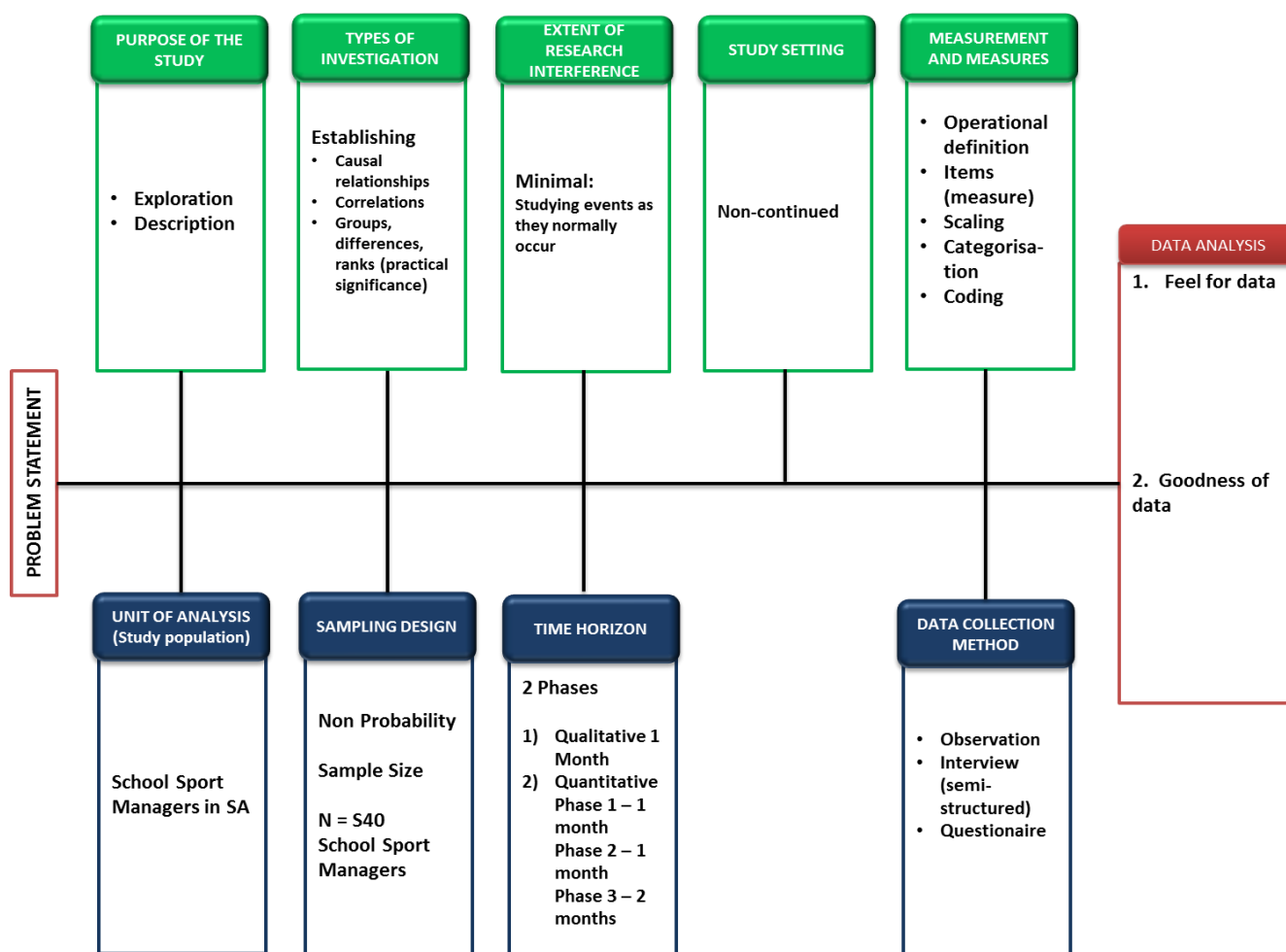
blueprint for conducting the research. The research design also entails a detailed plan, according to which research is undertaken. According to Mouton (1996:107), the main function of a research design is to enable the researcher to anticipate what the appropriate research decisions are likely to be, and to maximise the validity of the eventual results. The relevant data are collected, which in the context of the current study focus on the management competencies of the school sport manager and the implications thereof for educator training, in accordance with the diverse needs of South African schools (cf. par. 1.3.2, p. 12).

The research design should be seen as a mixed-bag approach that implies choosing from different alternatives and options to ensure that the research purpose and perspective are clarified and achieved. The research problem will determine the methods and procedures: the types of measurement, the sampling, the data collection and the data analysis to be employed for the proposed research (Zikmund *et al.*, 2010:66).

For the purposes of this study, the researcher will use an empirical study, involving a survey, interviews and phenomenology to gain insight into the typical experiences of the participants in order to arrive at sound conclusions. Leedy and Ormrod (2010:141) reveal that a *phenomenological study* is one that attempts to understand people's perceptions, perspectives and views of a particular situation. By looking at multiple perspectives on the same situation, the researcher can then make some kind of generalisation on what something is like from an insider's perspective. The phenomenological approach aims to understand and interpret the meaning that participants give to their everyday life. Creswell (2007:57) regards a phenomenological study as one that describes the meanings that the lived experiences of a phenomenon, topic or concept have for various individuals.

In the current study, the research was conducted by means of a literature study and empirical research. The nature and complexity of the research problem, research questions and related research aims called for a purposeful research design to meet the requirements of these research intentions. For this reason, a *mixed methods research design* was chosen to conduct this research. A mixed methods research design was adopted to increase the scope and range of the research, in order to address the research problem and the related research questions. The research design utilised for the current study is illustrated in Fig. 16.

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(Adapted from Sekaran & Baglie, 2010:99-100)

Figure 16: Research Design

5.4.2 Research methodology

Leedy and Ormrod (2010:12) agree with Babbie and Mouton (2008:74) that research methodology refers to the researcher’s general approach in carrying out the research project. Mouton (2001:56) views research methodology as focusing on the research process and the kind of tools and procedures to be used. The point of departure would be the specific task (data collection) at hand, the individual steps in the research process, and the most “objective” procedures to be employed. In essence, as Carter and Little (2007:1317,1320) express, methodologies justify methods, which produces data and analyses, and methods produce knowledge, so methodologies have epistemic content. Put simply, the research methodology in this research thus refers to the approach adopted to follow in gathering (cf. par. 5. 8.4, p. 330; 5.9.3, p. 339) and analysing data (cf. par. 6.2, p. 355; 6.3, p. 431).

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This research was conducted by means of a literature study (cf. par. 1.4.3, p. 14; 5.5, p. 319) and empirical research (cf. par.1.4.4, p. 14; 5.6, p. 320). In this study it was assumed that programme development was a process and as such different programme development models were looked, before an integrated, adapted programme development process structure that consisted of five stages (phases) was selected (cf. par. 7.3.2, p. 537; 7.4, p. 545; Fig. 17, p. 326). In this thesis an explorative mixed method was therefore used in order to determine the needs and competencies required by educators to manage school sport effectively in accordance with the diverse needs of South African schools (cf. par. 1.3.2, p. 12). For this purpose a semi-structured interview (qualitative method; cf. par. 5.8, p. 328) and a questionnaire (quantitative method; cf. par. 5.9.3, p. 339) were used to collect data. Data were connected in that the results of the qualitative section in coherence with the literature review (cf. Ch. 2-4) were used to develop a measurement instrument, namely a questionnaire (quantitative method) to determine the needs and competencies required by educators to manage school sport. In this way an attempt was also made to ensure triangulation of data.⁷⁵

In the following paragraph the literature study will be introduced and the role thereof explained to gather information and form a contextual and theoretical framework for the empirical section of the current research. Subsequently the empirical research will come to the attention (cf. par 5.6, p. 320).

5.5 THE LITERATURE STUDY (REVIEW)

Primary and secondary literature resources were studied to gather information to provide a theoretical overview (framework) in Chapters Two, Three and Four. Chapter Two is primarily concerned with school sport in the South African education system; while Chapter Three deals with sport management for educator training; and Chapter Four provides a literature overview of some current sport management-training programmes – both locally and globally.

Particular attention has been given to the history of South African sport in general, but also school sport in particular – to provide the impetus and to contextualize the current role of school sport, given South Africa's past.

⁷⁵ Although the design of the measurement instrument was not seen as the all- encompassing aim of this study, it can also be regarded as a significant contribution the body of knowledge in sport management and can be used for subsequent studies in a similar context as school sport. Cf. also footnote 71, p. 288

5.6 THE EMPIRICAL RESEARCH

An empirical investigation was undertaken for the current study, using qualitative and quantitative methods to obtain data that would strengthen the trustworthiness and validity of the research. The term *empirical* refers to knowledge derived by the process of practical and scientific experience, experiments and inquiries (Skager & Weinberg, 1971:4). An empirical investigation involves a planned process of collecting and analysing data – in a way that is systematic, purposeful and accountable (Isaac & Michael, 1997:2). The purpose of this empirical investigation is, therefore, to obtain reliable and valid data, in accordance with the research problem (cf. par.1.1, p. 1) and the accompanying research aims (cf. par.1.3.2, p. 12).

It would seem appropriate to deduce that the empirical research section of any research would play an important role; and as such, it would go a long way to provide appropriate, reliable and valid data to support the research problem and the accompanying research questions (Gorin, 2007:456; Mislevy, 2007:463). Hence, turning the focus to the current study, the purpose of the empirical section of this research report is to describe an applicable research design as a scientific process to obtain reliable and valid data concerning the research problem and the accompanying research questions (cf. par. 1.3.2, p. 12).

The information obtained from the empirical research of a study serves to support and provide evidence for the stated problem and the accompanying research questions. The research problem involved the development of a sport management programme for educator training, in accordance with the diverse needs of South African schools (cf. par. 1.1, p. 1), while the research questions included inquiries about the context of school sport within the educational system, the current role of the school sport manager within the education system, and to determine the extent of the use and application of sport management programmes used as part of international and national educator training (cf. par. 1.3.2, p. 12).

The following research aims are required:

- An understanding of the nature of school sport within the educational system;
- A conceptual framework for the management of school sport;
- Preconditions for the implementation of a school sports-management programme for educator training;
- A sport management model for managing school sport; and
- Related review aspects.

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An analysis of the data, as well as information from the extensive literature overview, led to the development of a sport management programme for educator training, in accordance with the diverse needs of South African schools (cf. par. 7.5, p. 547).

For any research process to be complete, an applicable research design to obtain reliable and valid data has to be described. Hence, the relevant research design for the study that would meet the expectations and requirements of the researcher, as well as the research intentions related to the research problem, research questions and related research aims, is called for. The research design should enable the researcher to justify that the research was undertaken – only after careful considerations regarding the enquiry. Based on the scope and complexity of the research problem, the researcher decided on a mixed methods research design to conduct this research. A mixed methods research design will be explained and examined further in the next section.

5.7 MIXED METHODS RESEARCH

Mouton and Marais (1990:59;164-165); Kumar (2005:12); Creswell (2007:37-39; 2009:4); Leedy and Ormrod (2010:96), as well as Kumar (2011:13,20), are of the opinion that the quantitative approach is highly formalized, as well as more explicitly controlled than the qualitative, with a range that is more exactly defined, and that is relatively close to the social sciences. In contrast, qualitative approaches are those in which the procedures are not as strictly formalized, while the scope is more likely to be undefined, and a more philosophical mode of operation is adopted (Mouton & Marais, 1990:59;164-165; McRoy, 1995:2009-2015; Delport & De Vos, 2011:266). Prospective researchers should orientate themselves to the differences between these approaches, and decide whether a combined quantitative/qualitative approach, also known as the mixed methods approach (Bergman, 2008a:1; Bryman, 2009:15) might be appropriate. Both approaches (quantitative and qualitative) have apparent strengths, but also weaknesses.

Human sciences research often utilises both qualitative and quantitative methodologies (Fouche & Delport, 2011a:66). The following paragraphs review several preliminary considerations before designing a mixed methods study. The next section addresses:

- Understanding what mixed methods research means;
- Rationale and purpose;
- Value; and
- Specific mixed methods research designs.

5.7.1 Definition

Creswell and Plano Clarke (2011:5) feel that a definition for mixed methods should incorporate many diverse viewpoints, which in this spirit according to the authors rely on a definition of core characteristics of mixed methods research. The authors continue to say that it combines methods, a philosophy, and a research design orientation, which ultimately seems to highlight the key components that go into designing and conducting a mixed methods study. An analysis of descriptions about mixed methods research in literature clearly reveals an agreement, irrespective of the focus of the definition, to a great extent among proponents of this particular type of research (Hunter & Brewer, 2003:577; Rocco *et al.*, 2003a:19; Tashakkori & Teddlie, 2003:711; Johnson & Onwuegbuzie, 2004:17; Collins *et al.*, 2006:69; Creswell & Plano Clarke, 2007:5; Ivankova *et al.*, 2007:261; Johnson *et al.*, 2007:123; Teddlie & Tashakkori, 2009:7-8; Creswell & Plano Clarke, 2011:5). So, the following definition of mixed method research can be formulated, according to the descriptions from literature.

Mixed methods research is the kind of research where the researcher combines quantitative and qualitative techniques, methods and concepts in a single study or series of related studies during single or multiple phases within a pragmatic philosophical worldview (paradigm) and theoretical lenses that direct the plan for conducting the study (cf. par. 5.2.1, 300; 5.3, p. 314).

De Bosscher, Shibli, Van Bottenburg, De Knop and Truyens (2010) used a mixed method design to develop a method for comparing the elite sport systems and the policies of nations.

5.7.2 Rationale and purpose

According to Johnson and Onwuegbuzie (2004:14), the goal of mixed methods research is not to replace either the quantitative or qualitative approaches to research, but rather to draw from the strengths of these approaches and to minimise possible weaknesses. Nau (1995:1) suggests that “*blending qualitative and quantitative methods of research can produce a final product which can highlight the significant contributions of both*”. Henderson *et al.* (1999:253) note with reference to their study of physical activity and culture that the linking of data provides a way to use statistics, the traditional language of research. The driving motivation behind mixed methods is the desire to get the whole story (picture), as much as possible.

Saunders, Lewis and Thornhill (2003:99) and Saunders *et al.* (2009:153) state that there are two major advantages to employing multi methods in the same study. Firstly, different methods can be used for different purposes in a study. This would give the researcher confidence having

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addressed the most important issues. The second advantage of using multi-methods approach is that it enables triangulation to take place. Thus, it may be concluded that the combination of quantitative and qualitative research methods offers the advantage of the respective qualities of both approaches (Shank & Brown, 2007:190; Thiétart, 2007:82).

The rationale for choosing a mixed methods research design for this research was to:

- Gain data about a wider range of interests;
- Understand more fully – and thus get a fuller research picture;
- Generate deeper and broader insights;
- Enhance the significance of interpretation;
- Enhance the convergence and collaboration of findings;
- Allow for unexpected developments;
- Clarify underlying logic;
- Facilitate both outsider and insider perspectives, thereby improving research;
- Facilitate a better understanding of the relationship between variables;
- Allow appropriate emphases at different stages of the research process; and to
- Explain idiosyncratic circumstances, approaches, opinions and practices of different respondents.

Additionally, Scott and Morrison (2007:158) share the belief of advocates of mixed method research, who argue that:

- A combination of methods enhances triangulation;
- A combination facilitates both *outsider* and *insider* perspectives; and the research is thus improved;
- A combination may facilitate a better understanding of the relationship between variables; and
- A combination allows appropriate emphases at different stages of the research process.

Advocates of mixed methods research also argue that quantitative and qualitative methods of measurement and accompanying analyses are compatible, and complementary to each other in a mixed method research design.

The **purpose** of the mixed methods research design in the context of this research is to (Mingers, 2001:244; Rocco *et al.*, 2003a:22,23; Johnson, 2004:264,265):

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- Increase the validity of the research by the convergence of the different methods of research, because mixed methods research is regarded as a form of triangulation;
- Widen the scope of the research in that expansion calls for the use of mixed methods research to increase both the “*breadth and range of a study*”; and to
- Complement different facets of the inquiry because of the “*overlapping*” that occurs between the different methods.

5.7.3 Value (Advantages)

The value (advantages) of employing a mixed methods design for this research can be summarised (enumerated) as follows (Creswell & Plano Clarke, 2011:12-13):

- An apparent weakness of quantitative research is that it is often perceived and seen to be weak in understanding the context or setting in which people talk and the voices of respondents are accordingly not directly (verbally) heard. On the other hand, qualitative research is seen as deficient, because of the personal interpretations and the involvement of the researcher that may lead to bias.
- Mixed method research provides more comprehensive evidence for studying a research problem than either qualitative or quantitative research alone.
- Mixed method research helps to answer questions that cannot otherwise be answered.
- Mixed method research is “*practical*”, as the researcher is free to use relevant methods, skills and thinking to address a research problem.
- Mixed method research enables the use of an all-encompassing paradigm, such as pragmatism.

It is imperative for the researcher to decide on the specific mixed methods design that best addresses the research problem. Hence, the specific mixed methods for this research will be elaborated upon.

5.7.4 Specific design

Once a mixed methods approach has been decided on, the next step is to decide on the specific mixed methods research design that best addresses the research problem (cf. par. 5.7.4.2, p. 325).

5.7.4.1 Procedural consideration

Three strategies for mixing qualitative and quantitative methods are identified by Creswell (2009:207-208), namely *merging*, *embedding* and *connecting* the datasets. For the current study the researcher made use of the mixing strategy proposed by Creswell and Plano Clarke (2011:67) to **connect** the qualitative data, in order to “build” or develop the subsequent quantitative data.⁷⁶ More specifically, the data are connected in that the qualitative results (cf. par. 6. 2, p. 355) were used in collaboration with the literature review to design a measurement instrument, namely a questionnaire (cf. Fig. 16, p. 318; 18, 327; par. 6.2.3, p. 372; Annexure D, on CD).

5.7.4.2 The mixed method exploratory research design

The mixed methods exploratory research design or exploratory sequential research design consists of two distinct phases (Creswell *et al.*, 2003:227; Creswell & Plano Clarke, 2011:86). In the research design, a researcher collects and analyses the qualitative data as phase one. In the second quantitative phase (cf. par. 5.9, p. 333; Fig. 16, p. 318; 18, 327; par 6.3, p. 431), the researcher builds on the results of the qualitative data. The established theoretical framework subsequently presented the researcher with the opportunity to identify topic-specific themes and variables for further investigation. The exploratory research design has become a widely accepted and efficient tool for use in multi-phase research (Creswell, 2009:212).

Despite typically emphasising the qualitative aspect, the inclusion of a quantitative component seems to satisfy and convince quantitative biased audiences of the relative value and advantages of the use of the exploratory sequential mixed methods research design (Creswell & Plano Clarke, 2011:89). Challenges associated with this research design involve the requirement of considerable time.⁷⁷

The next step is to decide on the specific *model* or *variant* of the chosen mixed methods research design as proposed by Creswell and Plano Clarke (2007:77; 2011:90). Based on the preceding, the **instrument development model**⁷⁸ was selected as described by Creswell and Plano Clarke (2011:77). The instrument development model is illustrated in Figure 17 (cf. p. 326 below).

⁷⁶ Although the purpose of this research was not to develop a questionnaire for school sport management, the developed measurement instrument, namely the questionnaire, can also be seen as a valuable contribution to the existing body of knowledge to school sport management and future research

⁷⁷ The researcher can attest to challenge concerning time, in the sense that the questionnaires could only be finalised after the interview schedule was completed, an analysis of the interviews was done and an extensive literature review was completed to develop a theoretical framework.

⁷⁸ Cf. also note, 71, p. 288

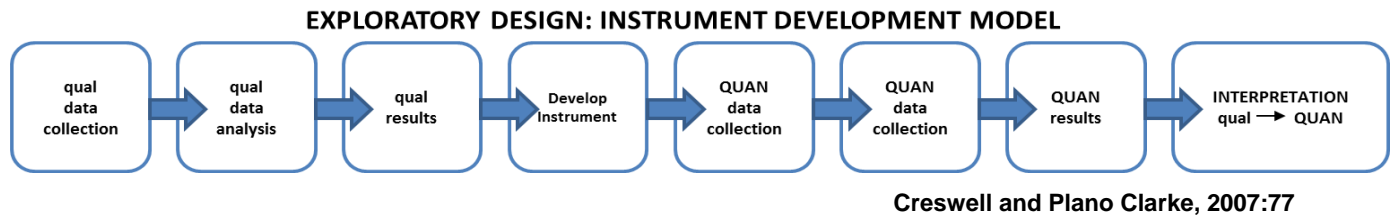


Figure 17: The instrument development model of the exploratory sequential mixed methods research design

The combination of research approaches led to the adoption of a **pragmatic position** (cf. par. 5.2.1.5, p. 311; 5.3.1, p. 314) to conduct this research, as this provided a workable solution to the multifaceted research problem (Tashakkori & Teddlie, 2003:696; Johnson & Onwuegbuzie, 2004:17-18; Creswell, 2009:11-12; Thomas *et al.*, 2011:375).⁷⁹ The results provided the researcher with a clear and complete picture of the current sport management programmes for the training of educators, according to the diverse needs of schools in South Africa (cf. par. 1.3.2, p. 12, research aim 5).

5.7.4.3 A mixed methods research model

A model of the instrument-development variant of the exploratory sequential-mixed methods research design is depicted in Figure 18 (cf. p. 327 below).

⁷⁹Cf. also par. 5.2.1.5, p. 311

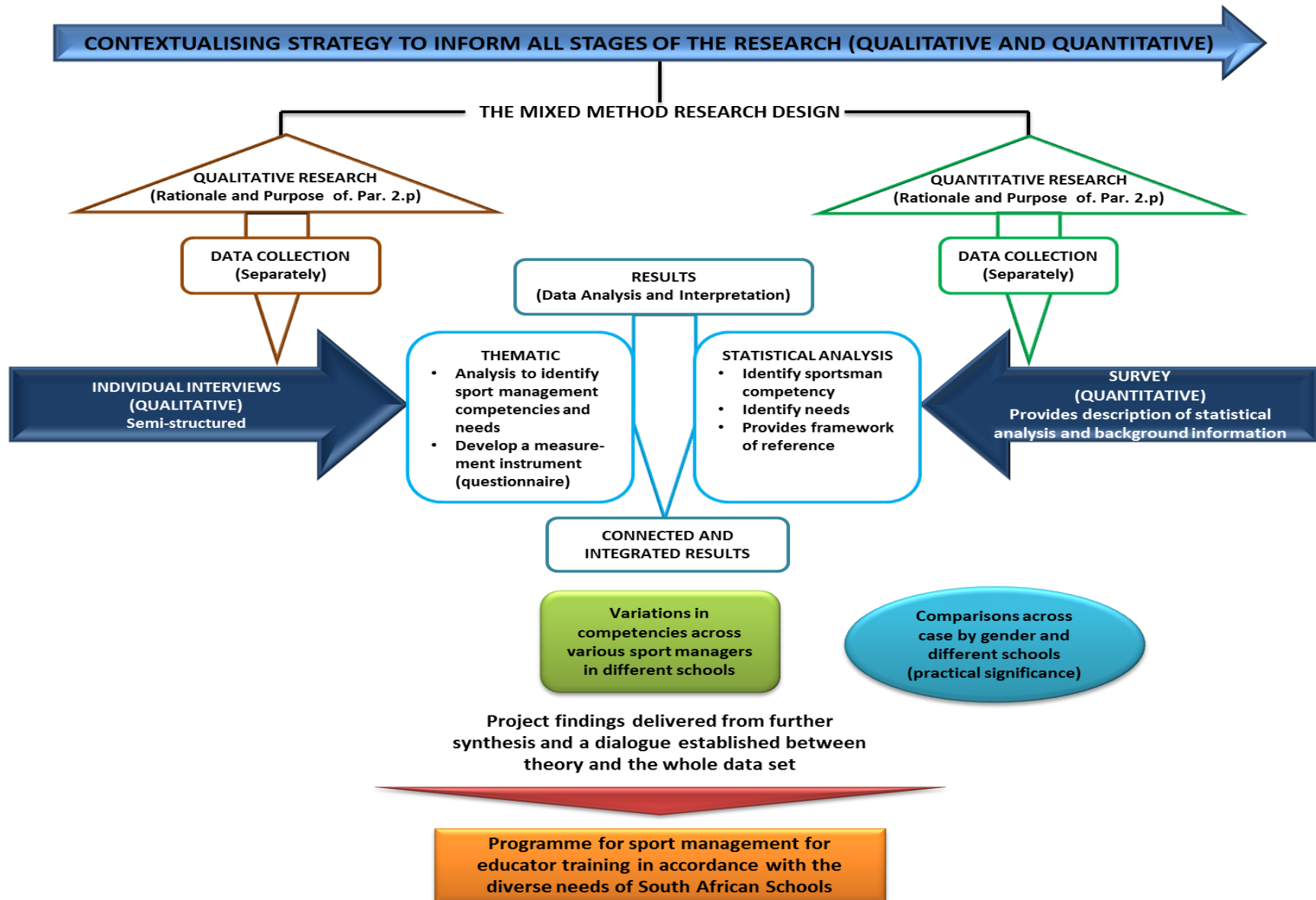


Figure 18: The mixed methods research model

5.8 QUALITATIVE RESEARCH

Qualitative writing tends to be rich with quotation, description and narration, as researchers attempt to capture conversations, experiences, perspectives, voices and meanings. This is research with words instead of numbers (Willis, 2008:40). As such, a qualitative study is concerned with non-statistical methods and small samples, often purposively selected (Delpont & De Vos, 2011:65).

The characteristics of qualitative research are (Kumar, 2005:12; Jones & Kottler, 2006:83; Bogdan & Biklen, 2007:3-8;40-41; Ivankova *et al.*, 2007:257; Creswell, 2009:175-177; Leedy & Ormrod, 2010:94-97; Kumar, 2011:13,20,104-105):

- It is usually conducted in natural settings. Natural settings (such as classrooms, schools and sports fields) are the overwhelming preference for qualitative studies.
- The extensive use of descriptive data. Qualitative researchers are likely to describe a phenomenon with words, rather than with numbers.
- The emphasis is on process rather than on product.
- It is often based on inductive logic: going from the specific to the general.
- The search for meaning is often evident. The *search for meaning* focuses in qualitative research on how people try to make sense of their lives. *How it is* may be nearly as important in a qualitative study as *how the participants think it is*.

5.8.1 Study population

A study population is the aggregation of elements from which the sample is actually selected. For the current research, the researcher chose topic-specific experts in the field of study as participants – based on their specialised expertise and close involvement in school sport management as the study population for the qualitative phase of the proposed research. The study population of the qualitative phase comprised departmental officials in the position of Education Specialist: School Sport (Department of Basic Education) (DBE) and academics from HEIs presenting sport management as part of educator training.

5.8.2 Sampling

Sampling refers to the selection of a subset of persons or things from a larger population, also known as a sampling frame (Scott & Morrison, 2007:219), with the intention of representing the particular population (Gall *et al.*, 2007:166; Neuman, 2011:246). A *non-probability sampling procedure* (Cozby, 2009:139,140) was used for the selection of knowledgeable and experienced

participants. For this reason, a *purposive sample* was used to select an Education Specialist: School Sport from each of the following provinces: a northern province, with metropolitan areas (Gauteng Province); a southern province with metropolitan areas (Western Cape Province); and a province with mainly rural areas (North-West Province) (cf. Annexure N, on CD).

The participants of this research phase were purposefully selected based on their involvement in sport management in schools. The number of participants is further viewed as being sufficient. It is based on the saturation principle of diminishing returns – the notion that each additional unit of information would supply less new information than the preceding one: until new information dwindles to nothing (Thiétart, 2007:166). In this study the saturation principle holds true and it can be confirmed the number of participants were sufficient and enough information was provided to enable the researcher to compile a questionnaire for this study that was reliable and valid (cf. par. 5.9.4, p. 342; 5.9.5, p. 346).

5.8.3 Reliability and validity

Reliability and validity and implications thereof will be described in detail in the quantitative section of this research report (cf. par. 5.9.4, p. 342 and par. 5.9.5, p. 346). Some qualitative researchers have begun to question the relevance of the term validity in qualitative research. Some suggest that terminology such as *credibility*, *dependability*, *confirmability*, *trustworthiness*, *verification* and *transferability* be used instead of validity.

Scholars like Huberman and Miles (2002:38) and Tobin and Begley (2004:388,389) are of the opinion that it is inappropriate to transfer terminology across paradigms. Inevitably, the authors suggest alternative ways to demonstrate reliability and validity outside the linguistic confines of a quantitative paradigm. The trend that rather emphasises the use of *rigour* to ensure reliability and validity in qualitative research was followed in this section of the research (Tobin & Begley, 2004:389,390; Twycross & Shields, 2005:36; Onwuegbuzie & Leech, 2007:239). Rigour refers to the demonstration of integrity and competence in qualitative research by adherence to detail and accuracy to ensure the authenticity and trustworthiness of the research process.

The rigour of the qualitative section relates to the overall planning and implementation to ensure the authenticity and trustworthiness of procedures, according to the following criteria (Tobin & Begley, 2004:391,392; Onwuegbuzie & Johnson, 2006:49,50; Roberts *et al.*, 2006:43; Freeman *et al.*, 2007:28,29):

- **Credibility:** Engagement with the data (recordings, notes and transcripts) was done intensively to demonstrate clear links between the data and the interpretations. Regular discussions were held and adjustments were made in accordance with suggestions and recommendations.
- **Dependability:** According to Riege (2003:81), dependability is analogous to the notion of reliability in quantitative research (cf. par. 5.9.4, p. 342). The purpose of this test was to show indications of stability and consistency in the process of inquiry. Care was taken to ensure that the research process was logical, traceable, and clearly documented in a reflexive manner by giving a detailed account of the research process.
- **Authenticity:** The development of the question items was based on a substantial theoretical basis as described in Chapters Two, Three and Four. The interview schedule was first carried out during the pilot test to ensure the yielding of reasonable, unbiased and valid data (cf. par. 5.9.4.1, p. 343).
- **Confirmation:** An audit process was implemented by working forward, as well as backward through the research process, to ensure that the data and interpretations of the findings were sound and confirmed findings. The intention during the interpretation process was not to generalize findings to a population, but to identify accepted principles and trends related to the research topic (cf. par. 5.6, p. 320; 5.8.1, p. 328).

The trustworthiness of this research phase was ensured by applying the following criteria: credibility, dependability, authenticity and confirming. The description in the qualitative research process of: *What was done; how it was done; and why it was done* – as well as adherence to the identified criteria for qualitative research, ensured the authenticity and trustworthiness of this research phase.

5.8.4 Qualitative data collection

To yield data for the qualitative investigation, different measuring instruments were employed. Measuring instruments include different types of interviews (standardized open-ended, semi-structured and structured), observations and content analysis or review of documents (Cooper & Schindler, 2011:183; Thomas *et al.*, 2011:357). Given the extent and purpose of this research (cf. par. 1.3.2, p. 12), interviews were used to collect the data. Hence, an Education Specialist: School Sport from each of three different provinces (Gauteng, Western Cape and North-West Province) (cf. Annexure N, on CD), in addition to an academic from each of three HEIs presenting sport management as part of educator training, were requested to participate in an interview to contribute to the achievement of the stated research aims (cf. par. 1.3.2, p. 12).

5.8.4.1 Interviews

The interview is a social relationship designed to exchange information between the participant and the researcher. The quantity and quality of information exchanged would depend on how astute and creative the interviewer is at understanding and managing the relationship (Monette *et al.*, 2008:178). The interviewers are deeply and unavoidably implicated in creating meanings that ostensibly reside within the participants (Greeff, 2011:342).

The goal of any qualitative research interview is therefore to see the research topic from the perspective of the interviewees, and to understand why they have a particular perspective (King, 1994:14). To meet this goal, the author (King) lists the following general characteristics of a qualitative research interview: a low degree of structure imposed by the interviewer; a preponderance of open questions; a focus on specific situations and action sequences in the world of the interviewee – as opposed to mere abstractions and general opinions.

The role of the interviewer is a demanding one as they have to ask questions, record answers and try to keep the interview session interesting and worthwhile for the interviewees (Powney & Watts, 1987:7,42; Verma & Mallick, 1999:122).

The circumstances in which a qualitative research interview takes place are highlighted below:

- Where a study focuses on the meaning of particular phenomena to the participants;
- Where individual perceptions are to be studied prospectively;
- Where individual historical accounts are required of how a particular phenomenon developed: for instance a new shift system;
- Where exploratory work is required before a quantitative study can be carried out; and
- Where a quantitative study has been carried out, and qualitative data are required to validate particular measures or to clarify and illustrate the meaning of the findings (King, 1994:16).

Research texts typically highlight three types of interviews used in educational research: standardised open-ended, semi structured and structured (Fontana & Frey, 2005:697,698; Erikson & Kovalainen, 2008:80; Scott & Usher, 2011:116,117), depending on the nature of the event as determined by the researcher who initiates the interview (Greeff, 2011:347). For the purposes of this research, interviews were conducted according to a **semi-structured interview** schedule, as proposed by Greeff (2011:151,152). This specifies predetermined questions and sequences for the interviewer. The interview will, however be guided by the schedule (cf. Annexure B, on CD).

5.8.4.2 Semi structured interviews

Interviewing as a data-gathering method was used to:

- Clarify vague statements;
- Permit exploration of topics; and to
- Yield a deeply experiential account of the extent of the management of sport in a diversity of South African schools.

Interviews can yield rich material unobtainable in any other way, which can support or be supported by other data from questionnaires and standardised test responses. The interview is wonderfully adaptable and flexible (Verma & Mallick, 1999:128). The interviews afforded the researcher the opportunity to obtain perceptions of role players in school sport regarding the problems currently being experienced by educators in the management of school sport.

5.8.4.3 Observation

The following aspects were included in this section of the research:

- The socio-economic situation (status) of the community;
- Physical location and surroundings;
- Reception at office;
- Impression of office setting; and
- Relevant comments.

The purpose of the observation list was to provide a brief account of the context of the source of the data, in order to facilitate an understanding of the setting in which the respondents work and to provide information about the climate in which the interview took place (Huberman & Miles, 2002:54; Creswell, 2003:8; 2009:177; Scott & Usher, 2011:106).

5.8.4.4 The Interview schedule⁸⁰

For the purposes of this study, the structured part of the interview was developed according to the research aims (cf. par. 1.3.2, p. 12), the theoretical framework for the management of school sport

⁸⁰ Cf. par. 5.8.4.4, p. 332; Annexure B, on CD

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(cf. par.4.9, p. 296; Fig. 15, p. 289) and the current sport management programmes for educator training (cf. Chapter 4). The interview questions included the following topics:

- Understanding of school sport management;
- Fundamental principles in managing school sport;
- Perspectives on multicultural education;
- Perspectives on the current state, status and demands of school sport;
- Best practices for managing school sport;
- Problems in managing school sport;
- Positive experiences in relation to the management of school sport;
- Needs to manage school sport;
- Views on the current and future competencies required to manage school sport;
- Importance/necessity of sport management training for educators;
- Problems, if any, encountered during practical training of students;
- Shortcomings of sport management programmes as part of educator training; and
- General comments.

A semi-structured interview was chosen to allow more clarifying, probing and cross-checking questions.

5.8.4.5 The Interview procedure

In order to ensure that the responses were recorded, a digital voice recorder and back-up recorder were used to record the responses of the participants. All the interviews took place in the offices of the education specialist and academics from HEIs respectively. A copy of the interview schedule and the contact detail of the researcher were provided to each interviewee for possible future enquiries.

In addition to the qualitative component of the empirical research, quantitative research methods in the form of a structured questionnaire were also used in combination with the semi-structured interviews as part of the mixed methods research design (cf. par. 5.7, p. 321).

5.9 QUANTITATIVE RESEARCH

The quantitative section deals with the statistical analysis and numerical data to provide quantitative information (Lund, 2005:128; Thiétart, 2007). Quantitative research requires

objectively evaluating the data which consist of numbers, trying to exclude bias from the researcher's point of view. Typically, the quantitative method makes use of a questionnaire. Quantitative research always involves the numerical analysis of data gathered by means of some kind of structured questionnaire.

5.9.1 The survey as research method

Interviews require the researcher to elicit information from respondents and provide the researcher more insight into the meaning and significance of what is happening. As such, it thus substantiates why survey researchers (Scott & Usher, 2011:93) choose to concentrate on a group of seemingly similar cases, such as for example, secondary schools in a locality or country.

5.9.1.1 Rationale and purpose

An empirical survey serves as an opportunity to obtain data on the current and desired competencies of school sport managers.

5.9.1.2 Strengths and limitations

The following strategies were employed to minimise the occurrence of possible shortcomings (Williams, 2004:94,99; Fink, 2006:35; Adams *et al.*, 2007:138; Maree & Pietersen, 2007c:157; Fowler, 2009:89,108,110,177; Leedy & Ormrod, 2010:223; Rubin & Babbie, 2011:404):

- Clear and consistent instructions to respondents for the completion of questionnaires;
- Questionnaire items were scrutinized for content that promotes bias, e.g. presupposed and leading items;
- Reporting of observational factors that describe the contextual situation of the data; and
- Follow-up actions to non-respondents of questionnaires.

To make a sound judgment of the content- and context-specific sport management training of educators in a diversity of South African schools, the *survey* presented a unique opportunity to obtain data on the competencies of school sport managers. It is imperative to define the study population for the quantitative section of this study (Babbie & Mouton, 2008:174).

5.9.2 The Study population

In this study, the total population consists of 24 979 public and 1086 independent schools, making a total of 26 065 schools (Department of Education, 2009:4).⁸¹ The total of 26 065 schools comprised the following: 15 358 primary schools, 5 670 secondary schools, and 5 037 combined and intermediate schools. KwaZulu-Natal (6 057, or 23%) and the Eastern Cape (5 834, or 22%) had the highest and second highest number of ordinary schools; while the Northern Cape (613, or 2%) had the smallest number of ordinary schools in South Africa. Each province consists of a number of districts and each district of a number of areas (cf. Annexure N, on CD).

The reference to study population in this research refers to the members of a group of people defined as respondents to whom the research measurements refer by reported results, findings and inferences (Keeves, 1997:427,428; Hittleman & Simon, 2002:91,92; Babbie & Mouton, 2008:174; Babbie, 2010:199; Rubin & Babbie, 2010:139; 2011:359,361).

5.9.2.1 Selection and sampling

The *study population* of the quantitative research consisted of a non-probability, purposive selection of 108 schools from all nine provinces of South Africa (cf. Annexure N, on CD).

Sampling refers to the process of selecting a sample as a small portion or subset from a defined population – with the intention of representing the particular population (Black, 2002:48; Gall *et al.*, 2007:166; Hoy, 2010:51; Monette *et al.*, 2011:13; Neuman, 2011:241). However, the purpose of this research was not to make use of a sample to generalise the findings to a particular population, but to develop a sport management programme for educator training, in accordance with the diverse needs of South African schools. A *non-probability sampling procedure* was accordingly selected for the identification of schools, because the researcher had no guarantee that these schools were either representative of the population of schools (public and independent/private)⁸² in South Africa, or that they had an equal chance of being selected for this particular study.

⁸¹ The total number of schools seems to differ according to the source. The data on ordinary schools were collected via the 2007 SNAP survey conducted on the 10th school day, based upon approximately 94% of open ordinary schools having submitted the survey forms. The figures provided are final after the preliminary figures that appeared in the DoE's report *School Realities* were updated (Department of Education, 2009:4). According to Blaser (2008:341) there were 26 099 public and independent schools in 2007, while in 2009, there were 24 693 public schools and 1 174 private schools, thus a total of 25 867 (Burger, 2011:149). In statistics released in February 2012 by the DBE the number of ordinary schools had decreased to 25 850. Of these 25 850 schools, 1 397 were independent schools and 24 453 were ordinary public schools (Department of Basic Education (DoBE), 2012:3)

⁸² Cf. also par. 1.2.1.4, p. 4

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A purposive sample was selected from different schools, because the identified schools were accepted as the study population (target population) to determine general trends of school sport managers together with related aspects to manage school sport in a diversity of South African schools (Fogelman, 2002:99,100; Grinnell & Unrau, 2008:153; Leedy & Ormrod, 2010:206; Strydom, 2011b:232). According to Welman *et al.* (2009:69), purposive sampling is the most important type of non-probability sampling. Researchers rely on their experience, ingenuity and/or previous research findings to purposely obtain units of analysis in such a manner that the sample they obtain may be regarded as being representative of the relevant population. The adequacy of this kind of sampling for quantitative studies depends on the judgment of the researcher, and is therefore sometimes even called *judgment sampling*. In purposive sampling the researcher must first think critically about parameters and then choose the sample case accordingly. Criteria for the selection of the participants are therefore, of critical importance, understood as being dialectical and symbiotic.

The Provincial Education Specialists: School Sport was involved in the selection of the schools because of their knowledge and experience regarding the sport performance of the schools in their respective education areas. Based on their knowledge and experience, these specialists identified schools within their respective education areas, and as such, one hundred and eight (108) schools were purposely selected on a national basis, according to criteria related to the diverse context of South African schools and based on the schools' sport performances and achievements. Twelve schools per province were selected as follows:

- Eight (8) secondary schools: boys-only schools (1); girls only schools (1); ex-model C schools (1); technical schools (1); independent schools (1); combined schools⁸³ (1); rural schools (1); township schools(1).
- Four (4) primary schools: ex-model C schools (1); independent schools (1); rural schools (1); township schools (1).

Schools that met the following criteria to some extent were identified by the provincial Education Specialists: School Sport of the different provinces:

- Schools' sport accolades;
- Representation of learners in regional, provincial and national sporting codes;

⁸³ A combined school in this case refers to a school consisting of learners from both primary (Grade 1-7) and secondary school learners (Grade 8-9 or Grade 8-12)

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- The manifestation of the management of school sport is acknowledged;
- School leadership demonstrates an understanding of the concept of school sport management;
- Best practices occur in terms of the management of school sport;
- Qualities to manage school sport are demonstrated by school sport managers (educators);
- The importance of the management of school sport is acknowledged by the School Management team (SMT) and the School Governing Body (SGB);
- Proven leading role and involvement of school sport managers in coaching, management and officiating in various positions at school, regional, provincial, and national level; and
- Schools that had implemented a strategic management plan for the management of school sport.

The list of primary and secondary schools per province of South Africa (cf. Annexure N, on CD) was accepted as the *sampling frame* for the selection of schools that met the required criteria for the management of school sport (Keeves, 1997:428; Cohen *et al.*, 2007:117; McMillan & Schumacher, 2010:129,141; Monette *et al.*, 2011:136; Neuman, 2011:246). Five (5) respondents from each school were purposively selected. These included the school principal, the chairperson of the School Governing Body (SGB), the school sport manager/coordinator/director, as well as a female and male sport coach. These respondents were purposely selected because of their leadership positions and their close involvement in school sport.

The researcher identified contact persons at the different regional offices (cf. Annexure C2, on CD) who were in a position to assist with the distribution and collection of questionnaires from the study population – in particular where access was difficult for the researcher. This was done by contacting the identified persons telephonically and by e mail. Additionally, the provincial Education Specialists: School Sport of the different provinces was requested to assist where possible; and they proved helpful in providing the researcher with a contact list and the addresses of schools in their respective provinces.

5.9.2.2 Return rate⁸⁴

Irrespective of the sampling method used, one would have to confront the problem of non-responses to the survey. Non-responses would not matter if one could be certain that non-respondents are very similar to respondents on all relevant variables in that they would have

⁸⁴ Cf. par. 5.9.2.2, p. 337

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answered the survey similarly if they had taken part. *Welman et al.* (2009:73) further state that non-responses occur because participants refused to be involved in the research for various reasons. Non-responses may thus occur due to inter-related problems such as:

- Refusal to respond;
- Ineligibility to respond;
- Inability to locate participant; and
- Participant located, but unable to make contact.

A low response rate limits the generalisation of the results from the questionnaires. Based on the perception that low response rates make the final sample smaller, meaning less “statistical power” to test the hypotheses, a number of steps to maximize the response rates are suggested. These include:

- Keep the questionnaires sufficiently short and attractive;
- Minimise cost and effort to the respondents;
- Promise (and provide) feedback to all the participants in the study;
- Provide a reward (book tokens, vouchers and the like) for completion of questionnaires; and
- Follow-up phone calls and visits to the respondents (cf. Annexure E2, on CD).

For this study, questionnaires were distributed to public and independent secondary and primary schools located in the nine provinces of South Africa. In each of the provinces, the schools used for the study, were categorised as either secondary schools (boys only, girls only, ex-model C schools, technical schools, independent or private schools, combined schools, rural schools and township schools) or primary (ex-model C schools, independent or private schools and township schools).⁸⁵

The duration for completion of the questionnaire took 20 minutes on the average. In total 540 questionnaires were distributed of which 189 (55 schools) were returned. For purposes of this study these respondents were regarded as the study population (cf. par. 5.9.2, p. 335).

⁸⁵ Cf. par. 1.2.1.4, p. 4

5.9.3 The questionnaire as measurement instrument

Monette *et al.* (2011:164) regard a questionnaire as a way to collect data in survey research that contains recorded questions that people respond to directly on the questionnaire form itself, without the aid of an interviewer.

5.9.3.1 Advantages and disadvantages of questionnaires

Using the questionnaire as research instrument has definite advantages (Wilkinson & Birmingham, 2003:39; Best & Kahn, 2006:313; Muijs, 2011:38,39), but also has disadvantages (Wilkinson & Birmingham, 2003:39; Muijs, 2011:38,39), as will be pointed out below in Table 19.

Table 19: Advantages and disadvantages of questionnaires

ADVANTAGES	DISADVANTAGES
It is familiar to users and allows them to complete the questionnaire at their own convenience, while allowing some time to think about their answers.	Questionnaires often provide low response (return rates), time-consuming follow-up and data entry.
Questionnaires facilitate the collection of vast amounts of data with minimal effort.	Ease of production and distribution can result in the collection of far more data than can be effectively used.
The availability of a number of participants in one place makes possible economy of time and expense and provides a high proportion of useable responses.	Questionnaires are everywhere, competing for participants' time.
As research instruments, questionnaires can be used time and time again to measure differences between groups of people. They are thus reliable data gathering tools.	Lack of adequate time to complete the instrument may result in the return of superficial data.
The person administering the instrument has the opportunity to establish rapport, explain the purpose of the study and elaborate on the meaning of items that may not be clear.	Lack of personal contact (if the questionnaire is mailed) may mean that response rates suffer, necessitating the expense of follow-up letters, telephone calls and other means of <i>chasing</i> the participant.
Well- designed questionnaires can allow relationships between data to be identified. They are particularly useful to showing relationships with data that are easily quantifiable.	

5.9.3.2 The design of the questionnaire

Wilkinson and Birmingham (2003:19) state that when designing questionnaires, it is easy to overlook mistakes and ambiguities in question layout and construction. The design of the questionnaire affects the response rate (cf. par. 5.9.2.2, p. 337), the reliability and the validity of the data collected. Response rates, validity and reliability can be maximised by:

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- Careful design of individual questions;
- Clear layout of the questionnaire form;
- Lucid explanation of the purpose of the questionnaire; and
- Pilot testing.

The questionnaire was designed to be completed anonymously by the respondents. A covering letter for the attention of the respondents was written to accompany each questionnaire (cf. Annexure A, on CD), as well a letter to the school sport director/coordinator/sport organiser (cf. Annexure, E1, on CD). The covering letter explained the purpose of the research; and it contained important information for the completion of the questionnaire.

In relation to this study, a questionnaire was constructed in alignment with the literature overview (cf. Chap. 3, 4 and 5), the theoretical framework (cf. par. 4.9, p. 296; Fig. 15, p. 289), the semi-structured interviews [(qualitative research (cf. par. 5.8., p 327, 6.2.3, p 371)] and the research aims. As a result hereof subsequent quantitative data were “built” or developed and thus connected with the qualitative results (cf. par. 5.7.4.3, p. 326; 5.8.4, p. 330; 6.2.3, p. 372). Because an already existing or generally accepted instrument (questionnaire) was not available in the literature (practice), a related questionnaire developed by Toh (1997), validated by Hollander (2000) and refined by Gerber (2000; 2009) was adapted in alignment with the theoretical framework and qualitative findings (cf. par. 6.2.3, p. 372) according to the research aims (cf. par. 1.3.2, p. 12). Besides taking into consideration the existing questionnaires of Toh (1997), Hollander (2000) and Gerber (2000; 2009), the questionnaire was also developed while taking into consideration existing questionnaires relevant to sport management and school sport, e.g. questionnaires developed by De Villiers (2003); Camiré (2012); Camiré, Trudel and Forneris (2012b; 2012a); Forneris, Camiré and Trudel (2012); and Van der Merwe (2012:66).

The questionnaire items were developed to include responses of general information and responses in relation to the views and experience in accordance with the diverse needs of South African schools. Principles accounted for during the construction of the questionnaire were (Partington, 2003:100; Best & Kahn, 2006:319,320; Morris, 2006:42; Thiétart, 2007; Delport & Roostenburg, 2011b:192):

- The principle of economy, which would enable respondents to provide as much information as possible in the shortest possible time and space available;

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- The format of the questionnaire was developed to have a professional appearance with a clear, neat and easy to follow layout;
- Clear and precise instructions were provided for the completion of the questionnaire;
- The theoretical foundation (Chapters 2, 3 and 4) and the framework served as a parameter for the development of the questionnaire, in accordance with the research aims and purpose of this study (cf. par. 1.3.2, p. 12); and
- Particular and thorough attention was given to question formulation.

A brief outline of the different sections of the questionnaire is presented below:

- **Section A: General information** (Questions 1-13)
Questions in this section aimed to obtain some biographical information from the respondents as well as general information about the school setting.
- **Section B: Demographical information** (Questions 14-26)
The questions in this section were included to obtain demographical information from the respondents in order to describe the study population. These questions only had to be completed by the principal or his/her delegate (acting principal, deputy principal etc.).
- **Section C: Wished for (required) school sport management competencies**
The aim of the questions in section C was to collect information from respondents on the importance of school for sport management competencies required to manage school sport, in accordance with the diverse needs of South African schools. Closed-end questions were grouped in different related categories, which correlate with the core, functional and specialist school sport management competencies (cf. par. 4.8, p. 283).
- **Section D: Needs** (Question 1.1-1.25)
The questions in this section were included to obtain information about the extent of the specific needs and requirements of school sport managers, as well the extent of the utilisation of contemporary approaches.

It is imperative for the researcher to also take a decision regarding the recording technique for the responses on the questionnaire. In other words, the researcher should be clear in his mind regarding the particular rating scale to be utilized for the purpose of evaluation and quantification of the data.

As stated previously, a Likert scale as category partition method was adopted as recording technique for the responses on the questionnaire to capture the incidence, potency and intensity as

to what extent school sport is managed in the study population of schools. The Likert rating scale requires an indication of the extent of the respondent's agreement in relation to a particular question item on a given continuum. Scholars and researchers are unanimous in their view that the Likert rating scale is particularly useful for the purpose of evaluation of data as part of a research survey.

In this study, a four-point Likert scale was used to enable scores of either low or high values to represent the extent of the knowledge, opinion, judgment and experience of the respondents with regard to competencies required to manage school sport (Keeves, 1997:792-793; De Vaus, 2002:182; Anderson, 2004:111; Morris, 2006:42-44; Maree & Pietersen, 2007b:167; Delpont & Roestenburg, 2011a:211-212; Neuman, 2011:226). Usually a five-point-scale is used (Thomas *et al.*, 2011:208), but a seven-point scale (Hollander, 2000:142) was seen in the literature, while Van Vuuren (2008:8,197) used a four-point scale and De Villiers (2003:32) used a six-point scale. However, according to Delpont and Roestenburg (2011b:219), Faul (1995:51-54;276) recommends five, seven or nine as the ideal number of responses. The rationale for using a four-point-scale apart from the reasons stated earlier in this paragraph, was also to eliminate any easy (neutral) responses in case of tiredness, laziness and time constraints (Muijs, 2011:42; Gravetter & Forsano, 2012:209). For purposes of this research, the scale was constructed as in Table 20.

Table 20: Scale for questionnaire

NO EXTENT	LITTLE EXTENT	SOME EXTENT	GREAT EXTENT
1	2	3	4

5.9.4 Reliability

Salkind (2006:106; 2009:110; 2012:115) refers to *dependable, consistent, stable, trustworthy, predictable and faithful* as synonyms for reliability. More specifically, Delpont and Roestenburg (2011b:177) concede that reliability deals with what is being measured. Muijs (2011:61) states that whenever researchers want to measure something, there is some element of error what he calls measurement error. Reliability then refers to the extent to which test scores are free of measurement error.

Although it is rare to have perfect reliability, Neuman and Kreuger (2003:179,180), as well as Salkind (2006:108; 2009:112; 2012:118), suggest procedures to increase the reliability of measures. These can be summarised as follows:

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- Increase the number of items or observations, i.e. the use of multiple indicators of a variable;
- Eliminate items that are unclear;
- Increase the level of measurement;
- Standardize the conditions under which the test is taken;
- Moderate the degree of difficulty of the instrument;
- Minimise the effects of external events;
- Standardise instructions;
- Maintain consistent scoring procedures; and
- Use pre-tests, pilot studies and replications.

Several procedures exist for establishing the reliability of an instrument, such as the test-retest and alternate-form methods and the split-half technique (Gratton & Jones, 2010:92; Delpont & Roestenburg, 2011b:177). For the purposes of the current study, a pilot study was conducted; and the Cronbach alpha coefficient (Cronbach alpha) was used to measure the reliability of the measurement instrument (in this case the questionnaire).

5.9.4.1 Pilot study⁸⁶

Bless *et al.* (2006:184) define the pilot study as a small study conducted prior to a larger piece of research to determine whether the methodology, sampling, instruments and analysis are adequate and appropriate. Janesick (1994:213) concurs that the pilot test in qualitative research allows the researcher to make use of the actual qualitative interviews.

According to Wilkinson and Birmingham (2003:52), the researcher can begin to identify and correct imperfections by piloting or testing a questionnaire with a select few people in order to establish their clarity. Piloting further assists in eliminating ambiguous questions, as well as in generating useful feedback on the structure and flow of the intended interview. Welman *et al.* (2009:148) and De Vos *et al.* (2011a:237) summarise the purpose of the pilot study as follows:

⁸⁶A number of different opinions on and definitions of the pilot study exist. Some of these address one aspect of the pilot study, while others are more comprehensive. Sarantakos (2000:292-294), for instance, differentiates between aspects of the pretest and the pilot study. The former comprises the testing of one or more aspects of the subject, such as the questionnaire or the programme for the analysis of the data (Strydom, 2011a:237). Although concurring with De Vos, Strydom, Fouche and Delpont (2011a:237) who feel that the concept pilot study is the more correct and the more comprehensive, the concept pilot test and pilot study will be used interchangeably in the current study with pilot test referring to the trial run or pretest of the measurement instrument specifically as opposed to the comprehensive conceptualisation of pilot study as outlined in par. 5.9.4.1

- To detect possible flaws in the measurement process (such as ambiguous instructions, and inadequate time limits);
- To identify unclear or ambiguously formulated items. In such a pilot study the actual questions are put to the participants and they are then asked to indicate how they have interpreted the formulated questions; and
- An opportunity for researchers and assistants to notice non-verbal behaviour (on the part of participants) that may possibly signify discomfort or wording of the questions (Welman *et al.*, 2009:148).

The final questionnaire was discussed with as well as analysed and approved by the Statistical Consultation Services (SCS) at the Potchefstroom Campus of the North-West University (cf. Annexure R, on CD).

5.9.4.2 The Cronbach alpha coefficient

Internal consistency refers to the degree of correlation between the various items of a measuring construct (Sekaran & Bougie, 2010:162). The Cronbach alpha coefficient is widely used as a reliable procedure to indicate how well various items are positively correlated to one another (Drucker-Godard *et al.*, 2001:203; Sekaran & Bougie, 2010:162). The Cronbach alpha is based on the inter-item correlations. If the items are strongly correlated with each other, their internal consistency is high and the alpha coefficient will be close to one. On the other hand, if the items are poorly formulated and do not correlate strongly, the alpha coefficient will be close to zero. Guidelines for the interpretation of Cronbach's alpha coefficient have been suggested and the following seem widely and generally accepted by researchers:

- 0.90-high reliability
- 0.80-moderate reliability
- 0.70-low reliability

For this study a statistical method was used to calculate the Cronbach alpha coefficient (α) to assess the internal consistency of the various question items of the questionnaire (Santana, 2009:124; Sas Institute Inc, 2013b:363; 2013a:274). The Cronbach alpha coefficient was calculated for each group of items in order to illustrate the internal consistency of each subsection. It also served another purpose in indicating the level of measuring the same construct validity. In the different subsections the general coefficient was higher than the acceptable, which is 0.7 and

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above. The Cronbach alpha coefficient for the different subsections of the questionnaire follows. Firstly the Cronbach alpha for section C of the questionnaire is presented in Table 21.

Table 21: Cronbach Alpha coefficient for the constructs of the questionnaire in Section C⁸⁷

CONSTRUCT	N	ITEMS	A
Basic Fundamental Management	171	1.1.1-1.1.6;1.1.9;1.1.11;1.1.17	0.93
Strategic Planning	174	1.1.7-1.1.8;1.1.10;1.1.12-1.1.16	0.92
Fundamental Communication	183	1.1.18-1.1.23	0.88
Fundamental Governance	175	1.1.25-1.1.34	0.94
General Sport administration	178	1.2.1-1.2.5	0.92
Information management	180	1.2.6-1.2.11	0.91
Product, promotion marketing	168	2.1.1-2.1.11;2.1.14	0.97
Price, place marketing	180	2.1.12-2.1.13;2.1.15-2.1.18	0.93
Networking	179	2.2.1-2.2.2;2.2.4;2.2.6;2.2.10	0.84
Public relationships	171	2.2.3;2.2.5;2.2.7-2.2.8;2.2.11-2.2.15	0.93
Managing human behaviour	172	2.3.1-2.3.7	0.91
Attract, retain, develop human resource	169	2.3.8-2.3.19	0.95
Operational Maintenance and housekeeping	175	2.4.1-2.4.9	0.94
Operational Facility management	170	2.4.10-2.4.16; 2.4.26;2.4.28	0.96
Operational Risk management	175	2.4.17-2.4.24	0.95
Operational project and event management	180	2.4.25;2.4.27;2.4.29-2.4.31	0.92
Strategic Financial planning	174	2.5.1;2.5.5-2.5.10	0.92
Financial control	180	2.5.2-2.5.4	0.87
Purchasing management	178	2.6.1-2.6.8	0.94
Sport law and legal management	174	2.7.1-2.7.7	0.94
Health, wellness and fitness specialist	162	3.1.1-3.1.16	0.97
Human movement specialist	175	3.1.17-3.1.21	0.90
Sport medical services specialist	178	3.2.1-3.2.8	0.95

The alpha coefficient for the subsection of competencies (question items 1.1-3.2) was all higher than 0.7 in all items and was thus accepted for further analyses and interpretation. Hereupon after the Cronbach alpha for section D of the questionnaire (cf. Annexure D, on CD). The Cronbach alpha of section D is tabled in Table 22.

Table 22: Cronbach Alpha coefficient for the constructs of the questionnaire in Section D

CONSTRUCT	N	ITEMS	A
Training, resources and infrastructure needs	171	1.1-1.11;1.13	0.95
Support needs	175	1.14-1.15;1.17-1.18	0.87
Policy, structures, systems and processes needs	176	1.19-1.20;1.22-1.24	0.93
Specialists needs	178	1.16;1.21	0.70

⁸⁷ Not all the information on each questionnaire was completed in full, hence the difference in total responses at each question item

From Table 22, it is quite clear that the Cronbach alpha varied from 0.7 to 0.95 (≥ 0.7) for section D of the questionnaire and it was accordingly included for further analysis and interpretation (cf. par. 6.3, p. 431).

In total it could thus be said that the different subsections or constructs of the questionnaire yielded high scores with the general Cronbach alpha coefficient ranging between 0.84 and 0.97 which indicates a high level of reliability for each construct. Apart from the importance of the concept reliability in the context of measurement, validity is widely considered as important in the context of measurement to ensure the success of any study.

5.9.5 Validity

Validity is the primary concern of all researchers who gather educational data. Validity is the most important quality of a measured dependent variable. This is because validity refers to the extent to which an empirical measure accurately reflects the concept it is intended to measure, yielding scores that reflect the true variables being measured. In other words, validity refers to the soundness of the interpretation of scores from a test, the most important consideration in measurement.

A construct, concept or a theoretical construction is aimed at organising and making sense out of our environment. The main purpose is to use observed variables to describe a construct or concept which is an observable variable, e.g. school sport management and school sport management competencies (Pedhazur & Schmelkin, 1991:86; Ary *et al.*, 2006:38-39;243). Construct validity is the extent to which a questionnaire or test measures a theoretical concept or trait (cf. par. 5.9.5, p. 346; 5.9.5.3, p. 348).

Confirmatory factor analysis was used to determine the construct validity for each subsection of the questionnaire (cf. par. 5.9.5.3, p. 348; 5.9.6, p. 350; Annexure D, on CD). To determine whether a factor analysis may be appropriate, for the questionnaire, Kaiser's Measure of Sample Adequacy (MSA), was computed for each confirmatory factor. Kaiser's measure of sample adequacy gives an indication of the inter correlations among variables (cf. par. 5.9.6, p. 350). An MSA of 0.5 is an indication that the data are appropriate for factor analysis. A variance retained of more than 50% was considered to make the data reduction sufficient. The final communalities indicate the range of low and high contributions that each variable is making to the specific factor. The results of the factor analysis are presented in Table 23 below.

Table 23: Exploratory Factor Analysis

ITEMS ⁸⁸	MSA	NUMBER OF FACTORS RETAINED	% OF VARIATION EXPLAINED
C1.1.1-1.1.17	0.93	2	67.48
C1.1.18-1.1.24	0.85	1	59.10
C1.1.25-1.1.34	0.91	1	66.49
C1.2.1-1.2.11	0.92	2	73.46
C2.1.1-2.1.18-	0.95	2	74.41
C2.2.1-2.2.14	0.90	2	64.96
C2.3.1-2.3.19	0.93	2	67.51
C2.4.1-2.4.31	0.95	4	75.78
C2.5.1-2.5.10	0.90	2	72.93
C2.6.1-2.6.8	0.89	1	70.55
C2.7.1-2.7.7	0.93	1	74.62
C3.1.1-3.1.21	0.94	2	73.66
C3.2.1-3.2.8	0.94	1	76.15
D1.1-1.25	0.94	3	72.07

From Table 23 it is evident from the initial exploratory factor analysis, that the factors retained from the different sub sections of the questionnaire varied from one to four factors retained. The factors retained explain the percentage of variation in this situation and yielded different MSA scores. The MSA for the different sub sections of section of the questionnaire varied between 0.85 and 0.95, while for the subsections of section D of the questionnaire, the MSA score was 0.94, which is an indication that the data were appropriate for data analysis. All the factor analyses were therefore trustworthy and construct validity on all constructs was confirmed. The significance of the above Confirmatory factor analysis is the fact that it demonstrates the high level of construct validity of question items in being homogenous in relation to each other.

5.9.5.1 Internal validity

Internal validity is crucial to experimental research designs; and it may be obtained by using at least two groups that are equal in respect of both the dependent variable and all nuisance variables. Cozby (2009:86) believes that the internal validity of a research study is the extent to which its design allows the researcher to draw accurate conclusions about cause-and-effect relationships. To ensure the internal validity of research, the researcher needs to attempt to eliminate any other possible explanations for the results observed (Marczyk *et al.*, 2005:159; Devlin, 2006:76; Cozby, 2009:86).

⁸⁸ Cf. Questionnaire, Annexure B on CD

5.9.5.2 External validity

If a study lacks external validity, then one is not confident that the findings can be applied beyond the narrow confines of the study. One especially common threat to external validity is the lack of random selection. When the sample does not reasonably represent the population, external validity is lacking (Suter, 1998:132). Shadish, Cook and Campbell (2002:20-24;39;55;86-92;346-348;353-371;466-473) suggest four areas of doubt concerning the ability to generalize findings:

- The researcher's inability to conceptualize performance indicators, so that other researchers can replicate the experiment;
- The researcher's inability to ensure that the experimental and control groups are representative of larger populations;
- The researcher's inability to be confident that the operationalized variables in the experimental setting can be replicated in real-life situations; and
- The researcher's inability to be certain that internal validity variables such as history, maturation, pre-test sensation, test reliability and selection (Adams *et al.*, 2007:237-238; Borden & Abbott, 2011:116-117) will not detrimentally affect external validity.

5.9.5.3 Measurement validities

Neuman (2011:211) describes measurement validity *"as how well an empirical indicator and the conceptual definition of the construct that the indicator is supposed to measure fit together"*. Although there are many types of validity, authors are generally in agreement that there are a few common techniques used to assess the validity of a measuring instrument. With regard to **content validity**, Smit (1991:56) distinguishes three types of content validity, namely face validity,⁸⁹ sample validity and factorial validity. **Face validity**, according to Iacobucci and Churchill (2010:257), refers to the relationship (similarities/correlation) between the researcher's description of concepts and his/her description of the categories measured. In the light of the purpose of the current research (cf. par.

⁸⁹ The terms face validity and content validity are often used interchangeably in research literature, although some methodologists argue that they should not be thought of as synonymous. They claim that face validity is not technically a form of validation, since it does not refer to what an instrument "actually" measures, but rather to what it "appears" to measure (i.e. it appears relevant to those who will complete or administer it). Nevertheless face validity is a desirable characteristic of a measuring instrument. Without it, we may encounter resistance on the part of respondents, which may in turn adversely affect the results obtained. Consequently, it is important to structure an instrument so that it not only measures the attributes under consideration accurately, but also appears to be a relevant measure of these attributes. So whereas Smit (1991:56), considers face validity as a sub type of content validity, are Delpont and Van Roestenburg (2011b:173) and Neuman (2011:212-213), to name but a few, of the opinion that content and face validity should be seen as separate categories or types of validity underlying measurement. I therefore agree with the classification scheme of Delpont and Van Roestenburg (2011b:173) and Neuman (2011:212-213) to categorise validities underlying measurement as: content, face, criterion and construct validity

1.3.2, p. 12), face validity thus determines if a questionnaire after a superficial (on the surface/on the face of it) assessment, looks valid at first glance (the face of it) for a respondent (person) who has to complete the questionnaire. That is to say, that face validity does not refer to what items of a questionnaire really measure, but rather what the researcher wants it to measure at first glance. In other words, each question or item on the measurement instrument should have a logical link with an objective. Broadly, the establishment of the referred to link, is called face validity (Kumar, 2011:180). **Sample validity** (logical) of measuring instrument as for instance a questionnaire on the other hand, is grounded on a representative sample of the content subjacent to the concept about which information is obtained from. In this regard Guion (1965:124) alleges that "... *content validity is the degree to which the total variance of the sample (the actual questionnaire) is related to the variance in the total possible population of tasks or items*". Lastly, the **factorial validity** of a measuring instrument (questionnaire) refers to the loading of the questionnaire with a general factor – in other words, the relation (correlation) which exists between the questionnaire and a common factor, as measured by means of the questionnaire (Smit, 1991:56). Churchill and Lacobucci (2005:90,394,413); Devlin (2006:72), as well as Gravetter and Forzano (2012:381,391) implicitly purport, that there is a relation (correlation) between the questionnaire and a common factor which is measured by means of the questionnaire.

Two other forms of validity are construct validity and criterion validity. It has been the purpose to determine the perceptions of respondents on the importance of sport management competencies in developing a sport management programme for educator training, which would enable sport managers to manage school sport in accordance with the diverse needs of South African schools. **Construct validity** bears relation to assumptions underpinned by theory relevant to the concept. In an endeavour to ensure construct validity for the current study, the questionnaire items were developed in alignment with the theoretical underpinnings concerning school sport management (cf. par. 4.8, p. 283; 6.3.2, p. 454). **Face validity** was optimised by the conduct of a pilot test to verify the relevance and representativeness of the various items to the intended setting (Bush, 2002:61; Roberts *et al.*, 2006:43). **Criterion validity** is seen as the ability of a measure to correlate with other standard measures of similar constructs or established measures. Given the fact that no other standard measure of similar constructs or established criteria was available, criterion validity was not established. Subsequently, it is in line with the research design adopted for this research (cf. par. 5.7.4.2, p. 325). The **external validity** was optimised by the selection of schools where sport is managed according to criteria relevant to the research aims (cf. par. 1.3, p.12; 5.9.5.2, p. 348). **Internal validity** was ensured by means of a substantial theoretical framework, initial qualitative data and an adapted existing questionnaire.

5.9.6 Statistical analysis

Descriptive statistical techniques were applied to organise, analyse and interpret the quantitative data. Measurements were recorded as scores indicated by a four-point Likert scale with a range from a low to a high level of the variable of interest (cf. par. 5.9.3.2. p. 339; Annexure D, on CD). Measurements of central tendency were applied to describe the average of selected sets of scores to obtain indications of typical tendencies and outliers. Data from the questionnaire (cf. Annexure, D, on CD) were statistically interpreted, analysed in collaboration with the Statistical Consultation Services of the North-West University, Potchefstroom Campus. The gathered data from the questionnaire were statistically converted by means of the SAS (Sas Institute Inc, 2010; 2011) computer software programmes to obtain related scores for the purpose of quantitative interpretation (cf. par. 6.3., p. 429). A two-stage statistical procedure was followed:

- In the initial stage an exploratory factor analysis was done on all the items of Section C and D of the questionnaire (cf. Annexure D, on CD) as a means of data reduction and to ensure construct validity. The factors retained by these factor analyses were then named and constructed; the value of a factor was defined by taking the mean of all the items comprising each construct. Thereafter the Cronbach alpha coefficient was calculated to ensure and determine the reliability of each new defined construct of the various subsections of the questionnaire (cf. par. 5.9.4.2, p. 344). To determine whether a factor analysis may be appropriate, Kaiser's Measure of Sample Adequacy (MSA), which gives an indication of the inter-correlations among variables, were computed (Tabachnick & Fidell, 2012:191) for each confirmatory factor. Guidelines according to Hair, Black, Babin and Anderson (2010:9;14;20;90-150) were used to confirm that the MSAs were appropriate (cf. par. 6.3.2, p. 454).
- Secondly, the statistical procedure involved the use of descriptive statistics in graphical and numerical ways to present and analyse the gathered data of this research (cf. par. 6.3, p. 426). Two-way frequency tables or cross tabulations were used to explore response patterns of different subgroups (Pietersen & Maree, 2007:185). Central tendency measures (e.g. mean, frequencies and ranking) were applied to describe the distribution of responses and to identify characteristic values. The spread of distribution (e.g. standard deviation) was described by numerical variances to the extent to which data measures tend to cluster close together or are widely spread over the range of values (Pietersen & Maree, 2007:188). Individual or raw scores which point to a relative distribution were also employed to indicate how far the individual score is either below or above the midpoint of a four-point Likert scale, namely 2.5.

The preceding descriptions of par. 5.9 provide an exposition of the quantitative component of the empirical section of the research. In the next section ethical considerations and ethical aspects relevant to this research are dealt with.

5.10 ETHICAL CONSIDERATIONS AND ASPECTS

Ethics is a philosophical term derived from the Greek word *ethos*, meaning character or custom and connotes a social code that conveys moral integrity and consistent values (Partington, 2003:22). More in relation to the ethics of science, Mouton (2001:238) is of the opinion that the ethics of science concerns what is wrong and what is right when conducting research. To this end all researchers, regardless of research designs, sampling, techniques and choice of methods, are subjected to ethical considerations (Gratton & Jones, 2010:121).

The following ethical aspects were adhered to in this research:

- A detailed, prescribed application was submitted to the Research Ethics Committee of the North-West University for approval to conduct the research. Approval was granted (cf. Annexure Q, on CD);
- Superintendent Generals of the Department of Basic Education from six provinces granted their consent and approval for the research in schools (cf. Annexure P, on CD). Superintendent Generals from three provinces have failed to date to respond. This letter was presented to the respondents with the questionnaires to encourage their participation in the research. Information was also provided to the participants concerning the nature of the study, participation requirements (e.g. activities and duration), confidentiality and contact information of the researcher;
- Permission was obtained from the provincial Departments of Basic Education, different district offices and the selected schools;
- Consent and approval for the research in selected HEIs by the appropriate university authorities were granted (cf. Annexure F, on CD);
- Consent, permission and approval for the research were obtained from the principal of each selected school (cf. Annexure E, on CD);
- Informed consent was obtained from participants and respondents (cf. Annexure G,H, I,J, L on CD);
- Participants and respondents were not subjected to any risk of unusual stress, embarrassment or loss of self-esteem;
- The researcher ensured that participants and respondents would remain anonymous;

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- The right to professional privacy and confidentiality of information obtained was guaranteed by a written statement in the cover letter (cf. Annexure D, E on CD); and
- The research was conducted in accordance with the ethical requirement to report the findings in a comprehensive and honest way.

Ethical issues and considerations have mainly to do with permission to carry out the research, the participation of respondents, the community and public as well as the process employed to analyse data (Keeves, 1997:257-260; Busher, 2002:81). Caution was taken to avoid any harm to participants in the light of sensitivity of the research theme concerning responses about the sport management competencies required by school sport managers to manage school sport and which should thus inform a sport management programme for educator training in accordance with the diverse needs of South African schools.

5.11 ADMINISTRATIVE PROCEDURES

Permission to conduct the research in a purposive sample of schools in all nine provinces of South Africa was obtained by the Superintendent General of the Department of Basic Education from all nine provinces (cf. Annexure C1, on CD).. Only six provinces (cf. par. 5.10, p. 351; Annexure, P, on CD) responded positively and gave their written consent. An organised administrative system was developed for the completion and filing of questionnaires and interview data. A covering letter (cf. Annexure E, on CD) with clear guidelines and instructions was also provided with each questionnaire. The researcher collected questionnaires from schools after completion by the respondents (cf. par. 5.9.2.2, p. 337), while the posted questionnaires were collected from the post office. Finally, arrangements were also finalised with the Statistical Consultative Service of the North-West University (Potchefstroom Campus) for statistically processing the gathered data.

5.12 SYNOPSIS

In this chapter the research design and methodology were set out. A specific, related research design was identified to ensure the accomplishment of the set aims for this study, namely to determine the needs and competencies required by educators to manage school sport effectively in accordance with the diverse needs of South African schools (cf. par. 1.3.2, p. 12, research aim 4). In conclusion, it may be stated that the research design and related methodologies were developed with the aim of obtaining reliable and valid data to develop a sport management programme for educator training in accordance with the diverse needs of South African schools. Ultimately, this would help current and prospective school sport managers to deal with the demands of managing sport in public and independent (private) primary and secondary schools.

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In Chapter Six, the data from the qualitative and quantitative research are presented, analysed, described and interpreted in a systematic manner to provide a methodological structure for the unfolding of the empirical section of this research to enable the researcher to develop a sport management programme for educator training in the diverse South African context (cf. par. 1.3.2, p. 12, research aim 5; 7.5, p. 547) after the programme design process has been discussed in Chapter Seven. Firstly the analysis and interpretation of the qualitative data are looked at.