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Philosophical Paradigms and Other Underpinnings of the Qualitative and Quantitative Research Methods: An Accounting Education Perspective

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ABSTRACT The methods followed in educating society, together with the phenomena shaping them in the process, is a major area for research, specifically in the field of accounting education. The main purpose of this paper is to provide the novice accounting education researcher with some guidelines on the research methodologies that could be applied in the field of accounting education, as well as to highlight some best practices. This paper, therefore, explores various research paradigms and their ontological, epistemological and methodological assumptions and methods in an attempt to guide the accounting education researcher in selecting a research design. This is achieved by investigating quantitative and qualitative research methodologies and the theories associated with them. Recommendations are made on the way forward for the novice accounting education researcher and a final conclusion is drawn from findings of the paper.

INTRODUCTION

Accounting education, in the broader sense of accounting and educational research, is defined by Van der Merwe (2013) as research, performed mainly with an academic objective in mind, of which the findings should add to the growth of the accounting sector, whether in education or society as a whole. Fouché (2013) noted that the present content of accounting education has remained markedly the same over the last half decade, and is now largely insufficient for the accounting student entering the professional accounting field. Research in this field should, therefore, receive the attention it demands currently.

Elliot (2010) and Fouché (2013) viewed that a gap existed between researchers and practitioners in accounting education and research, because research seems too technical for practitioners to understand and too many of the research objectives seem irrelevant to the problems experienced in practice. In an attempt to partially fill this gap, this research has a twofolded objective. The first is to present the novice accounting education researcher with some guidelines on the philosophies and intricacies of the science of research methodology so as to equip them with a point of reference when doing research and interpreting results, specifically in the social sciences. Secondly, this paper aims to highlight some best practices in conducting research that are also applicable to accounting education in general.

McKerchar (2008) pointed to various philosophical research paradigms, which form the foundation of any research project, and methods of collecting data that a good researcher should be able to understand. To develop a philosophical perspective, Burrell and Morgan (1979) recommended that researchers make assumptions regarding two dimensions, namely i) the nature of society and ii) the nature of science. Although Burrell and Morgan (1979) developed a comprehensive philosophical framework based on these assumptions, the essence of this paper is the nature of the social sciences, which include accounting education.

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In an attempt to define the term "philosophy", Singh (2006) stated that we might gain understanding if we define what philosophy is not:

"Philosophy is not a speculative discipline in the sense that it begins with gratuitous assumptions about man or the universe. It is not religion, although the philosopher may be deeply concerned about the nature of God or the possibility of immortality of man. It is not a way of life, in the sense in which we sometimes refer to a person's "philosophy of life". It is not the poetic appreciation of a beautiful sunrise. Philosophy is a disciplined, orderly, logical study of the universe, thus, literally everything that constitutes reality" (Singh 2006).

Siti (2010) added that philosophy involves thinking about assumptions as to how one observes the social world, because this will affect the choice of method according to which a researcher thinks about the research process. From these views and definitions, it is clear that the term "philosophy" is not a confined concept and should be considered in more detail, specifically, in connection with its significance in designing, deducting and writing up of research in accounting education. The philosophical paradigms of research that are traditionally considered to be applicable in the field of accounting education research will be discussed next. This is followed by a discussion on how these philosophies are applicable to accounting education research and research design. The methods of data collection in respect of qualitative and quantitative methodologies are discussed, followed by an investigation of the mixed-method approach. The paper concludes with a summary of the key issues discussed, the value of the study, and recommendations on the way forward for the novice accounting education researcher.

PHILOSOPHICAL PARADIGMS AND RESEARCH DESIGN IN THE SOCIAL SCIENCES

Researchers often start by considering whether their research methodology should be i) quantitative in nature, using numerical data obtained from a sample in a population (Maree 2010; or ii) qualitative in nature, producing non-numeric, descriptive data (Brynard and Hanekom 2010). There is, however, more to research than these two choices. To comprehend the philosophical underpinnings of qualitative "versus" quantitative research methodologies, the researcher needs thorough understanding of what a paradigm is.

Kuhn (1970) noted that a paradigm is a set framework that makes different assumptions about the social world, about how science should be concluded and about what constitutes legitimate problems, solutions and criteria of proof. Barker (2003) defined a paradigm as a model or pattern containing a set of legitimate assumptions and a design for collecting and interpreting data. Based on these definitions, the qualitative and quantitative research methodologies come to mind together with the fact that all research, whether of a qualitative or quantitative nature, is based on the underlying assumptions about what constitutes valid research.

Research in education and other fields can be conducted in a number of competing paradigms (Coll and Chapman 2000), which are all grounded in their own ontological and epistemological assumptions. All assumptions are based on conjecture; therefore, the philosophical foundations of each paradigm can never be confirmed or disproven empirically (Delport et al. 2013). Different paradigms naturally hold opposing ontological and epistemological outlooks, which means they have differing assumptions of reality (ontology) and knowledge (epistemology) that underpin their particular research method (Maree 2012; Mouton 2012). This is reflected in their methodology and methods. Grix (2002) identified a directional and rational relationship between these main components of research. He stated that our ontological and epistemological thoughts assist us in formulating the research questions we ask and the methodology we will follow in addressing them (Grix 2002).

In summary, ontology can be described as the researcher's view of the world, whether from a realist perspective where an external reality exists objectively from the researcher, or from a relativist perspective where reality depends on various circumstances and factors. Ontology then translates into epistemology where the questions regarding how the researcher views knowledge are determined. This knowledge can either be based on the experience of the senses which can be observed and obtained by experiments, or be seen as multi-layered and complex

where a single phenomenon can be interpreted in several ways. The outcome of the epistemology decisions determines the research paradigm in which the researcher will conduct research. This is followed by the decision on how we can go about obtaining the required knowledge (methodology) and determining the method of data collection pertaining to a research paradigm.

McKerchar (2008), together with Roth and Mehta (2002), mentioned a robust number of research paradigms that are discussed, debated and argued in current literature pertaining to the social sciences. However, there are two main research paradigms that have come to the fore in existing literature, namely positivism and interpretivism. Other less distinct paradigms form a continuum between positivism and interpretivism, for example, critical realism, post-positivism, constructivism, feminism and post-modernism (Delport et al. 2013; McKerchar 2008). Although, some of these paradigms can be applicable to accounting education research, the focus of this paper is only on these two common paradigms and their relation to qualitative and quantitative research methods.

The researchers choose methodologies according to their different ontological and epistemological positions towards the research question or phenomenon they are investigating (Scotland 2012). Thus, the research paradigm selected by the researcher will depend on these ontological and epistemological components and will affect the methodology that is selected. It should also be noted that good researchers would be able to choose the correct research paradigm and methodology to suit their particular study. The correct fit between study and paradigm will become clear in the following discussion.

Investigation into the Positivism Paradigm

The positivist paradigm, as introduced by Auguste Comte, emerged in the 1920s and 1930s as a result of a discussion group of philosophers, mathematicians and scientists who investigated scientific language and methodology (Juma'h 2006). Since then, the word "positivist", like the word "bourgeois", has been used derogatively and not to refer to an expressive paradigm that can clarify a particular type of assumption in the social sciences (Burrell and Morgan 1979). Delport et al. (2013) stated that many writers have abused the term "positivism" by using it superficially and indiscriminately. In this paper, the term referred to an expressive paradigm to explain the ontological, epistemological and methodical components of research within the positivist paradigm.

The ontological component of positivism is one of realism or common sense (Hudson and Ozanne 1988; Scotland 2012). Greener (2008) stated that the only phenomena that positivists believe can produce knowledge are those which they can know through their senses, namely by sight, touch, smell, taste and hearing. McKerchar (2008) concurred by stating that the positivist attitude is based on a realistic foundationalism ontology, which sights the world as existing independently of our knowledge of it, that is, objective and apart from the researcher.

Epistemology, on the other hand, is described generally as the positivist entering the world independently, ascertaining absolute knowledge about an objective reality; thus, the researcher and what is being researched are independent. Walliman (2011) described epistemology as the theory of knowledge, specifically in connection with its validation and methods used. He further claimed that this component of research is concerned with how we know things and what we regard as acceptable in a discipline. The approach used in positivism to acquire this knowledge is one of empiricism, which constitutes that observation and measurement are at the core of the scientific endeavor (Walliman 2011). This approach entails deductive reasoning whereby the researcher's thoughts are structured, leading the researcher to identify spontaneous connections through observations and to draw reasonable conclusions about a phenomenon (McKerchar 2008; Repko 2012).

Deductive reasoning is usually informed by deductive logic; beginning with what is known about a phenomenon and moving to the unknown, which leads researchers to develop a hypothesis (Loseke 2013). Sarantakos (2005) and Walliman (2011) are of the opinion that deductive reasoning starts with a general statement and is used to suggest theories (that is, hypotheses) that can be tested and be concluded on; thus, moving from the general to the particular (Brynard and Hanekom 2010). An instance of how the positivistic paradigm can be applied in the field of accounting education is as follows:

Example 1: A Positivist Approach to Accounting Education Research

All auditing students with no practical experience will eventually struggle to master the robust volume of study material. (General statement)

This student is registered to study auditing with no practical experience. (Contingency)

Therefore, this student will eventually struggle to master the robust volume of study material. (Conclusion)

(*Source:* Author; Brynard and Hanekom 2010; Walliman 2011 – adapted)

This instance consisted of a general statement followed by a more specific statement contingent from the first, and then a conclusion based on the logic of the two statements.

Quantitative research performed in the sciences relied on deductive reasoning and is empirical in nature (Sarantakos 2005). Based on these assumptions and those made in the ontological and epistemological components of the positivist paradigm as noted above, the research methodology commonly used in this paradigm is quantitative in nature (Maree 2012; Repko 2012; Sulkowski 2010). Although, a quantitative approach is based on scientific and empirical methods of collecting and interpreting data on a specific phenomenon, it is not without limitations, specifically in the field of accounting education where the simplification and controlling of variables is tremendously challenging (Scotland 2012).

In summary, positivism is about the discovery of truth and demonstrating this through empirical methods. Research performed in this paradigm is, therefore, objective and encompasses deductive reasoning, which results in research that defines, clarifies and, in some designs, predicts the phenomena we experience. A researcher choosing this paradigm strived to apply a model typically associated with research in the natural sciences to investigate social phenomena and to obtain explanations of the social world.

The positivists, according to Bogdan and Taylor (1984), sought the facts and causes of social phenomena apart from the subjective states (a variable) of individuals, making the use of quantitative research methods a bit more challenging for the accounting education researcher. These limitations have led to further developments towards paradigms that lend themselves to qualitative work, such as the interpretive paradigm, which is considered next (Depledge et al. 2013).

Investigation into the Interpretivism Paradigm

Interpretivist researchers aim to see the world through the eyes of the participants, allowing them numerous viewpoints of reality and not only the one reality that a positivist researcher aims to achieve (Greener 2008). Thus, the interpretivist researcher cannot be detached from the subject being studied. From an ontological perspective, interpretivists are not concerned with the objective reality that is "out there" but instead, with knowing and investigating specific subjective realities that exist "in here" (Manroop et al. 2011). Smith (2006) and Geele (2010) concurred by claiming that the ontological position of interpretivists are generally subjective or based on internal realism that sees reality as an intersubjective construction or a personal construction respectively; thus, making sense of the world through continuously interpreting, creating, defining, justifying and rationalizing the daily actions of phenomena in the social sciences.

Besides, the epistemological position of interpretivism is one of subjectivism, which is grounded in actual world phenomena. Although, the world does not exist freely of our knowledge of it, it can be interpreted on an individual basis, but can never really be known (Repko 2012). The interpretivist paradigm is one of realism and does not provide a hard and vast explanation from which spontaneous connections or predictions can be made (McKerchar 2008; Walliman 2011). That is, the interpretivist uses inductive reasoning, starting from specific observations that is repeated and then drawing a general conclusion based on these; thus, moving from the particular to the general (Brynard and Hanekom 2010; Walliman 2011). In an attempt to clarify the aforementioned in the context of the accounting education field, refer to example 2:

Example 2: An Interpretivist Approach to Accounting Education Research

Auditing student 1, with no practical experience, was observed struggling to master the robust volume of study material. (Repeated observation)

Auditing student 2, with no practical experience, was observed struggling to master the robust volume of study material. (Repeated observation)

Auditing student 3, with no practical experience, was observed struggling to master the robust volume of study material. (Repeated observation)

Therefore, I conclude that all auditing students with no practical experience will struggle to master the robust volume of study material. (Conclusion)

(*Source:* Author; Brynard and Hanekom 2010; Walliman 2011 – adapted)

This instance and the assumptions of the ontological and epistemological components of the interpretivist paradigm point to qualitative research methodology, because these are all characteristics associated with this type of methodology. When conducting research in a qualitative matter, the researcher intends to approach the world "out there" (not confined to settings such as laboratories) and to define, comprehend and clarify the social phenomena "from the inside" in a number of different ways (Bogdan and Taylor 1984; Flick 2008).

In conclusion, by means of inductive reasoning the qualitative researcher can understand what is distinctly human and come to grips with understanding social society. They follow an approach that aims to understand people, their actions and methods of reasoning. The researcher in this paradigm is exposed to observations of social behavior and is in direct contact with the participants for prolonged periods of time in an attempt to develop deep understanding of their behavior or to make sense of subtle non-verbal communication. Table 1 summarizes the differences between the positivist and interpretivist paradigm in relation to their ontological, epistemological and methodological components.

The following sections deal with quantitative and qualitative research methodologies, as well as with their methods of data collection. This is followed by a discussion of the use and utility of mixed methods.

QUANTITATIVE RESEARCH METHODOLOGY

Maree (2010) viewed that quantitative research is a method for using numerical data obtained from a sample in a population in order to generalize the results to the field that is being explored. Adams et al. (2009) concluded that quantitative research contained characteristics of quantitative width, implying that statistical analysis would be performed. Therefore, undertaking quantitative research can be defined as drawing a conclusion based upon evidence obtained from data (usually in numeric form) and statistical analysis by means of deductive reasoning. This whole process is, thus, empirical in nature. Following a quantitative research methodology as a research design includes the use of various methods of data collection, for instance, experiments, surveys (questionnaires), statistical analysis and mathematical modelling (Hammersley 2012; McKerchar 2008; Repko 2012). To perform a comprehensive investigation by employing quantitative measurement, the variables affecting the investigation need consideration because only they will allow research-

Table 1: Positivism and interpretivism: Ontological, epistemological and methodological components

	Positivist paradigm	*Interpretivist paradigm*
Ontology (Nature of Reality)	The world exists independently of our knowledge of it, i.e. an objective reality and apart from the researcher	The world does not exist independently of our knowledge of it, i.e. a subjective reality and not independent from the researcher
Epistemology (Relationship with Researcher)	The researcher and what is being researched are independent from each other	The researcher and what is being researched interact
Methodology (Research Process)	Deductive process that is quantitative in nature	Inductive process that is qualitative in nature

Source: Brynard and Hanekom 2013; Bogdan and Taylor 1984; Burrell and Morgan 1979; Depledge et al. 2013; Delport et al. 2013; Flick 2008; Greener 2008; Hudson and Ozanne 1988; Juma'h 2006; Manroop et al. 2011; Maree 2012; McKerchar 2008; Repko 2012; Sarantakos 2005; Scotland 2012; Smith 2006; Sulkowski 2010 – Summarized

ers in the accounting education field to detect any changes in the results produced (Hammersley 2012).

Repko (2012), and Brynard and Hanekom (2010) observed that the researcher needed to consider the relevant independent and dependent variables to design a suitable data collection method, whether experimental or in the form of a survey (questionnaire). Independent and dependent variables have a cause-and-effect relationship, where the dependent variable is affected because of the introduction of the independent variable (Repko 2012).

Brynard and Hanekom (2010) further stated:

The dependent variable varies with the introduction or removal (manipulation) of the independent variable. An independent variable is that factor which is deliberately varied, manipulated or selected by the researcher in order to determine the relationship to an observed phenomenon, which constitutes the dependent variable (Brynard and Hanekom 2010).

Returning to the instances posed above, the question is whether any variables can be identified in these problems. In these instances, two variables apply: one is the practical experience of auditing students, and the second is their ability to master the robust volume of study material. The independent variable in this case is the practical experience of working in public practice. This is the factor that is selected by the accounting education researcher (author) to determine the relationship to an observed phenomenon, namely the ability of auditing students to master the robust volume of study material. The latter constitutes the dependent variable and varies with the introduction of the independent variable.

The introduction or removal of practical experience, namely the independent variable that is likely to cause the outcome under consideration, will have an effect on the ability (dependent variable) of auditing students to master the robust volumes of study material. This indicated the cause-and-effect relationship between the two variables.

An integral weakness of this methodology is the ability of the researcher to control the mediating variables, which McKerchar (2008) mentions. Mediating variables are those associated with the demographics such as age, race, gender and level of education of the participants, together with those that influence the participants' behavioral intentions such as emotions, according to Chung et al. (2013) and McKerchar (2008). These authors cautioned against confusing the mediating factors with the cause of a particular type of behavior which, in its own, is seen as an independent variable, for instance practical experience in the example posed previously.

Although, the researchers acknowledged the significance of variables, several limitations and constraints need to be considered in order to avoid bias. Owing to time and cost restraints – such as a phenomenon that is present only at a certain point in time, or the cost of studies involving global populations – it is usually very difficult to include the entire population in a study (Maree 2012). In the field of accounting education, the population under scrutiny usually includes students. As stressed by Brynard and Hanekom (2010), when students are used as a population to investigate a certain phenomenon, all relevant levels of students should be included so as to prevent biased results.

The following sections discuss the use of surveys (questionnaires) as a quantitative research method in the field of accounting education. Although, the other quantitative methods, such as experiments, also apply to the accounting education field, they fall beyond the scope of this paper, because the focus is on investigating phenomena pertaining to the social sciences, and experiments are usually associated with natural sciences.

Use of Questionnaires as a Quantitative Method

Questionnaires in the field of accounting education have been used in various studies, such as those performed by Van der Merwe (2013), Fouché (2006) and Tonge and Willett (2012). These studies have proven this type of quantitative method to be a valuable tool in not only evaluating students' (respondents) views and perceptions, but also in collecting data about a phenomenon affecting students; thus, in investigating the cause-and-effect relationship of phenomena affecting students.

The questionnaires come in different forms, such as group-administered questionnaires, postal surveys, telephone surveys and direct-interview questionnaires, each with its own set of advantages and disadvantages (Abdel-kha-

lik and Ajinkya 1979; Blair et al. 2014; Maree 2012; Smith 2011). Group-administrated questionnaires can cover many respondents in a short timeframe and is not cost intensive, whereas, postal surveys are also relatively cheap to administer, but the response rates are typically very low (Maree 2012; Smith 2011). The cost of telephone surveys and interview questionnaires are frequently very high, but these methods rarely produce low response rates (Maree 2012; Smith 2011).

The question remains as to which type of survey will be most effective in the field of accounting education, specifically, in the light of factors such as the sample population, its size, sampling rate, means of selection, sampling bias and response rates. Based on the assumption that accounting education researchers have adequate opportunities to administer the questionnaire to the respondents (students, that is, sample population), it is clear that group-administered questionnaires would be the most effective tool (with reference to cost and time) in the given circumstance due to the following:

i. The sample population is easy to identify based on the phenomena that are investigated;
ii. The sampling rate limitations would be addressed, because the whole population affected by the phenomena under investigation would be considered;
iii. Means of selection would be based on the phenomena under study;
iv. Sampling bias is restricted; and
v. Response rates would be extremely good.

Despite these advantages, surveys are often criticized as being the "poor man's experiment" due to its internal control weakness of not being able to assign subjects randomly to treatments, the resulting inability to exclude competing hypotheses, and the presumption that all respondents' interpretation of the questions are standardized (McKerchar 2008; Smith 2011). These possible limitations or weaknesses in the design of the questionnaire stress the significance of using a properly designed questionnaire and its effect on the validity and reliability of the data obtained from respondents. The researchers must approach the task of constructing a questionnaire not as an isolated effort, but as one informed by the research objectives (Blair et al. 2014). In doing so, the structure, purpose, validity and reliability of the questionnaire design needed consideration.

McKerchar (2008) identified two different structures of questionnaire designs that are applicable to the quantitative research methodology. The first is the structured questionnaire, followed by the semi-structured questionnaire. Both these types can be administered to obtain empirical data, which are based on closed-ended questions, and non-empirical data, which are based on open-ended questions (Maree 2012; McKerchar 2008). The latter is viewed as a respected instrument in making generalizations to the broader population and testing hypotheses (Maree 2012; McKerchar 2008). Structured questionnaires will, therefore, consist of closed-ended questions, whereas semi-structured questionnaires contain both open and closed-ended questions. Example 3 and Example 4 below illustrate the use of open and closed-ended questions in the field of accounting education.

Example 3: Closed-ended Questions

Please answer the following questions with regard to pre-engagement activities in the audit process by using the following scale:

1. *Not at all*
2. *Very little*
3. *Somewhat*
4. *Quite a bit*
5. *To a great extent*

The manner in which auditing was taught (the teaching methodology) up to now effectively assisted me in understanding:

- *The audit process as a whole.*
- *The various types of assurance services that are available.*
- *The various types of other services (non-assurance) that are available.*

(*Source:* Author)

Example 4: Open-ended Questions

Please list the reasons you believe students in general struggle to master the robust volume of study material included in the audit subject. (*Source:* Author)

The two factors of validity and reliability are fundamental to the structuring of questionnaires (Delport et al. 2013). Further, because the results were based on statistical evaluation, proper balance should be established between the validity and reliability of the questionnaire adminis-

trated to obtain data (Abdel-khalik and Ajinkya 1979; Maree 2012; McKerchar 2008).

To produce valid results, the questionnaire should measure the phenomenon in the questions accurately (Delport et al. 2013). Brynard and Hanekom (2010) found that validity referred to the "what" of data collection, whereas Henning (2013) defined validity as a measure of whether the researcher is investigating what he or she intends to investigate. The validity of a questionnaire will, therefore, depend on whether it does what it intends to do, that is, obtain the required information about the phenomenon under investigation.

Further, the reliability of a questionnaire will depend on whether the questionnaire, if measuring the same phenomenon more than once, would render the same outcomes (Delport et al. 2013). Reliability, thus, related to the accuracy and consistency of the questionnaire design, together with the uniformity and precision of the questions included in the instrument (Bryman and Bell 2007; Brynard and Hanekom 2010). A questionnaire is deemed reliable if it produces the same results when administered more than once to one or many populations affected by the same phenomenon.

In an attempt to mitigate these design threats to validity and reliability, the researcher can implement several techniques or procedures. In respect to validity, piloting of the questionnaire can be useful in addressing any misinterpretations of words and the meaning of questions (McKerchar 2008; Smith 2011; Van der Merwe 2013). Blair et al. (2014) compiled a simple guide to minimise the risks of misinterpretations in questions and words included in a questionnaire, for instance:

- Specify who, what, when, where and how;
- Specify how the answer should be given;
- Use simple language;
- Try to use words with only one meaning;
- Use numbers (instead of indefinite adjectives) to measure magnitudes; and
- Ask only one question at a time.

The most common measure to mitigate the risks affecting the reliability of questionnaire data is referred to as Cronbach's alpha coefficient (Delport et al. 2013; Peterson 1994). This is a statistical measure where the alpha coefficient ranges between 0 and 1, with questionnaire alpha coefficients closer to 1 representing higher reliability. Peterson (1994) stated that Cronbach's alpha coefficient is not only the most widely used estimator of reliability, but has, over the last twenty years, received substantial attention from those involved in methodological matters.

That said, although numerous statistical packages such as IBM SPSS are available on the market and can be utilized in the social sciences to calculate this trusted reliability measure, Delport et al. (2013) stressed the use of other procedures such as using two or more questions in a questionnaire to measure each aspect of a variable, eliminating items that are unclear and could result in different responses at different times, and standardizing the conditions under which the questionnaire is administered.

In summary, there are clearly many factors of which the researcher in the accounting education field needs to take note of before employing questionnaires as research method in collecting data about a phenomenon affecting the population (students). By paying specific attention to details in the development of a questionnaire and considering its suitability in the given circumstances, this type of instrument is and can continue to be appropriate in the exploration of phenomena affecting students.

QUALITATIVE RESEARCH METHODOLOGY

In recent years, qualitative research has experienced unparalleled growth and change as it became a recognized and valued research approach across a variety of disciplines, such as anthropology, sociology and education (Damico and Tetnowski 2001; Flick 2008; McKerchar 2008). Bogdan and Taylor (1984) describe the term "qualitative method", as research that produced descriptive data, which consist of people's own spoken and transcribed words and observable behavior. Brynard and Hanekom (2010) add that qualitative research does not usually include any numeric specifications or models. Maree (2012) described qualitative research as research that attempted to collect rich descriptive data in respect of a specific phenomenon with the aim to gain understanding of what is being observed or studied and not necessarily to proof a hypothesis. The qualitative research methodology can, therefore, be described as research that yields evocative data that is obtained by the researcher's experiences and perceptions that were put in writing.

The label "qualitative research methodology" has, due to its development over time, been used to encapsulate a number of theoretical frameworks (Flick 2008; Shank 2006). Ravitch and Riggan (2012) defined "theoretical framework" as a way of linking all the elements of the research process, that is, a specific research design within the qualitative research methodology. Shank (2006) conceptualised the term as being a condition of data gathering and interpretation, whereas McKerchar (2008) mentioned explicitly that it referred the theoretical tradition of the methodological criteria used. Based on these distinct interpretations, a theoretical framework can be described as the backbone of the research design and a point of departure when conducting qualitative research into specific phenomena.

Theoretical frameworks in qualitative research include grounded theory, phenomenology, case study, narrative biography and ethnography (Delport et al. 2013; Flick 2008; McKerchar 2008). The experienced researchers and students who use qualitative research methods typically struggle to recognise and use theoretical frameworks in their research (Anfara and Mertz 2006). In an attempt to put these frameworks into perspective for the novice accounting education researcher, the following sections elaborate on each of the mentioned frameworks, with accompanying illustrations in the research area of accounting education.

Grounded Theory

The Grounded Theory was developed in 1967 as an alternative approach within the positivist paradigm with its preference for quantitative methods of obtaining and analyzing data. However, since then, variations of this theory have been developed, such as the commonly referenced theory of Strauss and Corbin developed in 1990, now frequently used in qualitative research in the field of accounting and other social sciences (Maree 2012; Smith 2011). Strauss and Corbin (1998) opined that, given the way it is constructed, grounded theory is a suitable tool to offer insight, to deepen understanding of data, and to guide action.

By using grounded theory as a research design, the researchers attempted to formulate a common but intangible theory of a process, action or interaction that is "grounded" in the opinions of the participants in the research (Delport et al. 2013; Maree 2012; McKerchar 2008). Grounded theory, in general, is based on two principles, the first being constant comparison, followed by theoretical sampling of different groups to maximize the similarities and differences in data (Delport et al. 2013; Maree 2012; McKerchar 2008; Smith 2011). Grounded theory can, therefore, be defined as theory analysis, where theory develops during data analysis and is then tested continuously against additional qualitatively sampled empirical data so as to refine the theory about a specific phenomenon.

In the field of accounting education, Hamid et al. (2012) performed a study based on the principles of grounded theory. This study aimed to investigate, by means of face-to-face interviews, observations and online interviews, the outcome of Activity Based Costing (ABC) training to form a theory on the transfer of training. The conclusions drawn in this study indicated that, although some methodological problems were experienced in the attempt to adopt grounded theory as a research methodology, it still proved appropriate for use in the field of accounting education research.

Phenomenology

Phenomenology is a philosophy, an approach and a method (Lin 2013). In the broader sense, phenomenology is a fairly simple notion (Shank 2006), with the emphasis on attaining understanding of a phenomenon through the perception of the participants who are exposed to the phenomenon (Delport et al. 2013; McKerchar 2008). In this case, the researcher is interested in how people interpret their worlds and how we can interpret their interpretations in turn (Shank 2006). McKerchar (2008) and Lin (2013) summarized these views by stating that phenomenology seeks to identify the essence of human experiences regarding a specific phenomenon, as interpreted by the participants in a study. That is, phenomenology is a research design where the participant views are obtained regarding a specific phenomenon, which are then interpreted by the researcher.

The data collection methods used in the field of phenomenology usually included focus groups, structured and semi-structured interviews, as well as case studies (McKerchar 2008; Shank 2006). Some of these methods have been used effectively in the field of accounting edu-

cation in recent years. A study performed by Lucas (2012), analyzing lecturers' conceptions of teaching introductory accounting, applied a phenomenological research design in a qualitative research methodology. The results indicated the need for further research. The study also provides a conceptual framework through which lecturers might reflect upon the manner in which introductory accounting is, and can be taught. Thus, the phenomenology is a useful research design in the field of accounting education.

Case Study

A case study is a common approach in social sciences and education (Rule and John 2011). Multiple definitions and interpretations of this research method can be found in the literature and based on the underlying philosophical assumptions of the researcher, case study research can be applied in both the interpretivist and positivist research paradigms (Maree 2012). McKerchar (2008) viewed a case study as a framework that explores a program, event, or one or more individuals. Delport et al. (2013) pointed out that a case study is an exploration and description of a case that is occurring through a variety of data collection techniques such as interviews, documents, simulations and observations. Thus, a case study is a research methodology that investigates a phenomenon within its real-life context by means of different data collection techniques.

Rule and John (2011), together with Delport et al. (2013), identified two distinct types of case studies, namely, the descriptive and the instrumental case study. The descriptive case study, also referred to as the intrinsic case study, aims to describe, analyze and interpret a specific phenomenon (Delport et al. 2013), whereas an instrumental case study, commonly used for explanatory purposes, aims to build and test theory (Rule and John 2011). Van der Merwe (2013) developed a case study and business simulation assignment as an educational device to assess and strengthen the students' technical and generic skills. This case study proved to be valuable and generated positive feedback from the respondents in their journey of becoming chartered accountants.

Narrative Biography

McKerchar (2008) described narrative biography as a theoretical framework where the lives of individuals are under scrutiny and data is collected usually in the form of interviews or by means of a written account. Delport et al. (2013) added that the "life world" of a person can best be understood from his or her own account or perspective. Narrative biography, therefore, focuses on the life experiences and interpretations of individuals themselves. A possible study in this regard could pertain to the effect of personal issues, such as finances and religion, on the ethical foundation of accounting educators and students.

Ethnography

Ethnography is commonly associated with anthropology. The term has its origin in the Greek words, *ethnos* (people) and *graphein* (to write) and in its simplest form, denote "writing about people" (Maree 2012). McKerchar (2008) emphasizes that ethnography is the study of an intact group in their natural setting over time, based on the assumption that all human behavior is intentional and observable. Thus, the research should aim to understand the reasons behind individuals' actions (Flick 2008; Maree 2012). Methods of data collection in this type of design include case studies, interviews, focus groups and observations (Flick 2008; Maree 2012; McKerchar 2008). An inherent limitation of this design is that the researcher, when using a case study, can become too attached to the participants, which could result in bias (Maree 2012). This limitation, together with the fact that it focuses more on anthropology, makes the application of ethnography in the field of accounting education very rare.

The following section shifts attention to interviews and focus groups as data collection methods in the science of accounting education research.

Use of Interviews and Focus Groups as Qualitative Methods

The interview as a method of data collection is properly the most frequently used method in qualitative studies. Interviews can be described as a conversation between two or more individuals where the interviewer obtains data by asking questions to the participant(s) (Maree 2012). Delport et al. (2013) labeled interviews as being an approach where the researcher obtained data and other information by means of interaction

with an individual or group of individuals who is known to have or is expected to have the information that the researcher requires. An interview can, thus, be viewed as a method of obtaining qualitative information by means of interaction with one or more participants exposed to the phenomenon under investigation.

Although, interviews are very common and easy to use, the researcher should decide on what interview technique to use, because this will influence the quality of data obtained. Interviews can be conducted by means of three basic techniques, namely, structured, semi-structured, and unstructured.

Structured interviews are deemed to be the most limiting in respect of obtaining quality information from the participants (Smith 2011), because of closed-ended questions that inhibit probing, together with the fact that these questions are set in advance (as in the closed-ended questionnaire of the positivist paradigm) (Maree 2012). These limitations do, however, have their advantages. Closed-ended questions restrict bias by ensuring consistency and they eliminate any interpretation errors that can occur due to the use of open-ended questions (Maree 2012; McKerchar 2008; Smith 2011).

Semi-structured interviews, on the other hand, allow for probing and clarifying answers, which gives the interviewer the opportunity to investigate other issues that emerge during the interview (Delport et al. 2013; Smith 2011). Delport et al. (2013) noted that semi-structured interviews are particularly appropriate in a situation where the phenomenon is controversial or personal to the participant(s). In contrast, the unstructured interview embarks on a series of themes to be discussed without predetermined questions that are, in some cases, very limiting (Smith 2011). This interview technique takes the form of a conversation, with the aim of obtaining participants' views, beliefs, attitudes and ideas about the phenomenon under investigation, and allows for continuous dialogue (Delport et al. 2013; Maree 2012).

In light of the above, it is imperative that the interviewer be suitably skilled and able to build a relationship with the participants. McKerchar (2008) advocated the use of unstructured interviews by stressing that interviews should follow a theme list set up prior to the interview, allowing for the interview to be shaped according to the experiences of the participants. In this way, the interviewer can take notes and listen actively to what is said by the participants, as well as observe their behavior. The prime risk when using this technique is that the discussion can derail. It is, therefore, vital that the interviewer steer the conversation back on track to ensure that all the themes have been covered at the end of the interview (Smith 2011).

Methods in documenting the interview include transcription, taking field notes and tape recording (Delport et al. 2013; McKerchar 2008). It is important that all ethical issues, such as obtaining the participants' permission for tape recording, have been addressed prior to the interview, as this will have a direct effect on the openness of the participant towards the interviewer and the phenomenon under investigation. The various studies in the field of accounting education have been conducted by using interviews as a method of data collection, for instance, Donmez et al. (2012) and McPhail et al. (2010). In both of these studies, this method proved to be of great value in furthering the science of accounting education research.

The term "focus groups" should not be confused with interviews conducted with groups, although there are similarities between the two techniques. In the words of Maree (2012):

Inexperienced researchers often confuse group interviews with a focus group. With a group interview, a group of participants are asked a set of structured or semi-structured questions without debating or arguing about the responses being generated. It is generally agreed that the distinguishing features of the focus group are that the discussion is focused in a particular topic, where debate and even conflict is encouraged and that the group dynamics assist in data generation (Maree 2012).

Shank (2006) describes the focus group as an expansion of the interview that is frequently used in qualitative research. Delport et al. (2013) observed that a focus group is a tolerant environment that encourages participants to share their perceptions, experiences, points of view and concerns. Thus, a focus group is a tool that generates an extra dimension where participants can express their views and experiences about the phenomenon under discussion more freely. However, focus groups pose the threat of participants' wandering of the topic. However, the researcher should apply the same prevention strategies used for an unstructured interview.

The techniques used for data collection are predominately the same in focus groups as for interviews and allow for rich data generation (Maree 2012; McKerchar 2008). In the qualitative methodology, the methods of data analysis and procedures to ensure the quality (validity and reliability) of qualitative data differ from those found in the quantitative methodology of data gathering and analysis. While the quantitative method tends to make generalizations that are proven statistically, the qualitative approach seeks to understand and explain phenomena instead of attempting to obtain a specific answer (McKerchar 2008). This made the generalization of findings by means of qualitative analysis beyond the boundaries of the study more challenging.

In an attempt to reduce this limitation regarding the generalization of qualitative research results (and, therefore, increase the validity and reliability of the findings), prominent qualitative researchers such as Lincoln and Guba (1985) proposed alternative constructs to validity and reliability, namely *credibility*, *transferability*, *dependability* and *conformability* which they believed reflected the assumptions of the qualitative approach more accurately. Maree (2012) and Delport et al. (2013) also acknowledged the use of Lincoln and Guba's constructs as a reliable method in improving the validity and reliability of qualitative research findings.

Delport et al. (2013) elaborated on these constructs as follows:

Credibility: This is an alternate to internal validity in which the goal is to validate that the inquiry was conducted in such a manner as to ensure that the subject has been accurately identified and defined. This approach will contain, setting the parameters of the study, the population and the theoretical framework together with a report of the difficulty of the variables and interactions that is so rooted in the data gathered that it cannot help but to be valid.

Transferability: Here the researcher asks whether the results of the research can be transferred from a specific situation or case to another, thus, determining the external validity of the study conclusions.

Dependability: The researcher asked whether the research process is rational, well documented and audited. This is a substitute to reliability wherein the researcher attempts to account for changing conditions in the phenomenon selected for the study as well as changes in the design shaped by an increasingly sophisticated understanding of the setting.

Conformability: In this last construct, the researcher needed to capture the traditional notion of objectivity. The researcher thus needs to deliver evidence that corroborates the findings and interpretations by means of auditing.

Although these constructs are appropriate means with which to defend the validity and reliability of information obtained through interviews or focus groups in the field of accounting education, other techniques do exist. Mouton (2012) identified *triangulation* as a tool to ensure the validity and reliability of qualitative findings. The key concept in this approach is to use different methods or multiple sources of data collection based on the assumption that various methods or sources can complement one another and, therefore, mitigate one another's weaknesses (Mouton 2012). Alternatively, McKerchar (2008) supported the use of *cumulative* and *communicative validation*. Cumulative validation takes place when the findings of a study are corroborated with results and conclusions from similar findings in other studies of a parallel nature. McKerchar (2008) described communicative validation as a process of including the participants in the study in the subsequent review of the data gathered.

Following the considerations with regard to validity and reliability of qualitative data, the analysis of qualitative data now deserves attention. Currently, there are many software packages like ATLAS.ti that serve as a powerful workbench for the qualitative analysis of large bodies of textual, graphical, audio and video data (Henning 2013). Other more conventional approaches to analyzing textual data include open coding, axial coding and selective coding (Heath and Cowley 2004).

Coding, in general, is the process of reading cautiously through the transcribed data and separating all the data into meaningful themes (Maree 2012). Open coding is an analytical technique to classify the themes in order to conceptualize the organization of data in general, whereas axial coding requires a more in-depth examination of the details within one theme (Delport et al. 2013; Heath and Cowley 2004). Selective coding, further, is the procedure of selecting the core themes and methodically relating them to other themes by taking a bigger view again

(McKerchar 2008). It might be necessary to move between these three methods throughout the coding process in order to authenticate the relationships and develop and fine-tune themes (Delport et al. 2013; McKerchar 2008).

Maree (2012) identified three phases in which data are analyzed:

- *Phase 1*: Orientation to the data;
- *Phase 2*: On the way – working the data; and
- *Phase 3*: Final composition of the analyzed textual data.

Although these phases seem simple, the analysis of qualitative data must fit the research design (theoretical framework) and method. Thus, an appropriate data analysis strategy needs to be implemented, taking into account the phases identified by Maree (2012). This is best illustrated by considering a number of diverse qualitative data analysis strategies, such as grounded theory analysis, content analysis, conversation analysis, discourse analysis and narrative (story) analysis (Henning 2013; Maree 2012). Table 2 illustrates how these three phases are implemented by the strategies for qualitative data analysis.

Drawing conclusions that can be corroborated does indeed require researchers to demonstrate methodological consistency (McKerchar 2008). Basing qualitative findings on a proper research design (theoretical framework) and data analysis strategy will mitigate the internal weaknesses of a qualitative methodology in investigating a specific phenomenon pertaining to accounting education. Some phenomena or topics, such as student failure, could be too sensitive for participants to freely participate in the group or even arrive at the group for the discussion, as was seen in the study done by Van der Merwe (2013). Nevertheless, focus groups and interviews continue to be valuable in the field of accounting education research and could be used as a single method of data collection or as a starting point for mixed methodologies and triangulation.

MIXED METHODOLOGIES

The use of a mixed methodology, consisting of both quantitative and qualitative methods of collecting data, is increasing in the field of accounting education; hence the numerous studies and literature available in this regard. Various studies, including those of Donmez et al. (2012) and McPhail et al. (2010) have successfully employed mixed methodologies in contributing to the science of accounting education. McKerchar (2008) concurs by stating that, while each of the methodologies can be applied in its respective positivistic or interpretivist paradigms, there is increasing proof of researchers' drawing from both of these paradigms as a method of data collection.

The incorporation of qualitative and quantitative methods is an exciting issue and continues to be one of much discussion due to the diverse epistemological and ontological assumptions (components) and paradigms related to these two methods (Aagaard et al. 2014; Kidd et al. 2011). Mengshoel (2012) defended mixed methodologies by claiming that researchers conducting mixed-method research can manage these paradigmatic issues by drawing from the strengths of both data collection methods to mitigate their individual weaknesses.

When investigating the ontological and epistemological components of mixed methodologies, the pragmatic paradigm comes to the fore. This paradigm allowed for some amount of generalization, usually associated with the positivist paradigm, and context consideration typically related to the interpretivist paradigm (Aagaard et al. 2014). Mengshoel (2013) elaborates on the use of the pragmatic paradigm by stating that this paradigm is a material, objective reality, as well as a constructed mental and social reality.

Therefore, this paradigm does not indicate which kind of research methodology a researcher should apply; hence everything is acceptable. The research in the pragmatic paradigm ultimately moves beyond quantitative versus qualitative arguments and admits the value of both paradigms in order to exploit the strengths and reduce the weaknesses of each (Aagaard et al. 2014; McKerchar 2008).

That said, the main challenge with mixed methodologies is the choice of data collection techniques to achieve a triangulation of results and, therefore, improving the validity of the research findings. Triangulation, as discussed previously, is the use of mixed methods in order to validate results so that they are varied from one another with respect to their inherent strengths and limitations or biases, and that each of the methods be used to assess the same phenomenon (Aagaard et al. 2014). It is, therefore, crucial

Table 2: Strategies for qualitative data analysis

Grounded Theory Analysis	*Description of analysis*	Emerging theories (themes) are grounded in the researched reality. The researcher makes a distinct effort to identify relationships between different themes, as well as explanations and clarifications of phenomena that might be in the data.
	Phase 1	Textual data are read and segmented for open coding.
	Phase 2	Texts are coded by means of axial coding and then divided into themes, working iteratively by comparing and contrasting themes. This is followed by selective coding to reach higher levels of abstraction.
	Phase 3	The researcher's understanding of the phenomenon is presented in grounded theories developed from the data analysis.
Content Analysis	*Description of analysis*	This is an inductive and interactive approach with emphasis on identifying similarities and differences in texts that could corroborate or disconfirm a theory. Usually applied in analysis of books, brochures, written documents, transcripts, news reports and visual media. Also applied in analysis of open-ended questions on questionnaires, interviews or focus groups.
	Phase 1	Reading or studying the textual data to form an overview and to better comprehend the context of the data.
	Phase 2	Coding the segments of meaning, followed by categorizing the related codes into groups. Seek relationships between these categories to form thematic patterns. [Open and axial coding]
	Phase 3	Writing the final themes identified in the data analysis while presenting the pattern of the related themes. [Selective coding]
Conversation Analysis	*Description of analysis*	The researcher attempts to describe the order, structure and sequential patterns of a conversation. The conversation is studied through inspection of tape recordings and transcriptions made from such recordings and relies on the patterns, structures and language used in speech and written word.
	Phase 1	Sets of transcribed data are developed and notes on observations are made.
	Phase 2	The sequence of the conversations such as turn taking, overlap, simultaneous utterance, tone, pitch, intervals and other actions are marked as they are noted. [Open coding]
	Phase 3	The conversations are discussed, indicating how the data explicate the set patterns of the conversations and how this contributes to social structures. [Axial and selective coding]
Discourse Analysis	*Description of analysis*	Where conversation analysis focuses on talking in conversations, discourse analysis focuses on the meaning of the spoken and written word, and the reasons why they have been uttered in that way. It is concerned with studying written texts and spoken words to reveal the discursive sources of power, inequality and bias, and how these sources are initiated, maintained and transformed within a specific social context.
	Phase 1	Texts are read, and coding of the socially constructed unit of meaning in written texts takes place. [Open coding]
	Phase 2	Relevant language markers in the text are identified and relationships with the rest of the text are sought. [Axial coding]
	Phase 3	The discursively marked themes are collated and discussed. The discourse is then interpreted, indicating how the discourse itself had an impact on the making of the text's content. [Selective coding]
Narrative Analysis	*Description of analysis*	Narrative analysis is seen as a specialized form of discourse analysis, because it searches for the way participants make sense of their lives by representing themselves in a story.
	Phase 1	The narrative structure may be in segments that will be analyzed. It may be in an entire interview or sets of interviews and focus groups.
	Phase 2	For narrative analysis the way in which the narrative is presented is analyzed, thus identifying the narrative discourse. [Open coding]
	Phase 3	The narrative structures are collated and discussed, showing how the style and structure of the narrative itself strengthened or weakened the meaning if the text. [Axial and selective coding]

Source: Author's own interpretations; Henning 2013; Maree 2012 – summarized

to apply the correct "mix" of methods so as to enhance and not diminish the validity of the research findings.

These mixed techniques of data collection might be applied consecutively or simultaneously, and might serve a dual purpose that successfully allows the results of one data collection method to inform another (McKerchar 2008). This means that the researcher might use the results of (for example) a focus group to inform the questions for a questionnaire as a method for final data collection to test a hypothesis about a specific phenomenon, as was the case in the study performed by McPhail et al. (2010). The same could be said for using interviews and other qualitative research methods of data collection to inform the use of other quantitative methods, and vice versa.

An instance of how mixed-method research could be applied in the field of accounting education is discussed next.

Example 5: Mixed Method Research

The use of interviews could be to identify obstacles that auditing students at higher educational level perceive to be hindering their passing the audit subject. The results or themes that emerged as reasons for student failure in the audit subject can then be used to develop a questionnaire for all the auditing students in the same population, including the students who failed the audit subject. (**Source:** Author)

In this way, the views of students currently failing the audit subject can be corroborated. Hence, endless possibilities of combinations exist.

CONCLUSION

The knowledge and methods we apply in discovering knowledge are subjective. This study's first objective was to provide the novice accounting education researcher with guidelines on the philosophies and intricacies of the science of research methodology so as to equip them with a point of reference when doing research and interpreting results, specifically, in the social sciences. Secondly, the research aimed to highlight some best practices in conducting research that are also applicable to accounting education research in general.

The research commenced with an investigation of the positivist and interpretivist paradigms, exploring their ontological, epistemological and methodological assumptions. Based on these assumptions, researchers in the field of accounting education will each have their own preferences to conduct research, whether in the positivist or in the interpretivist paradigm. Some instances of the practical application of these research paradigms within accounting education research were illustrated.

The different methodologies applicable to these paradigms were further explored, concluding that both the qualitative and quantitative research methodologies have their advantages and limitations and would be suitable for investigating certain phenomena in the field of accounting education. The different methods of data collection in each of these research methodologies came under scrutiny, where the suitability of each was discussed, together with its own set of strengths and weaknesses. Various instances of how these methodologies are and can be applied in the field of accounting education were also provided.

The importance of research design and the theoretical frameworks that the accounting education researcher can apply while conducting qualitative research was discussed. These theoretical frameworks serve as the foundation on which every research project should be built. Mixed methodologies were discussed, together with the philosophical paradigm they belong to. Various methods in combining quantitative and qualitative methodologies were observed, and a motivation was provided for the use of mixed methods as to maximize research contributions in accounting education. The overarching conclusion is that researchers in accounting education have to apply a research methodology that is applicable and feasible in investigating the specific phenomenon requiring attention. The choice of research method will, therefore, depend on what the researcher wants to achieve ultimately.

It can, therefore, be concluded that a number of paradigms, methodologies, methods and theoretical frameworks can be applied in accounting education research. None of these methods are superior to the other, as no one phenomenon has its own methodology for discovery and explanation. Albert Szent Gyorgyi said, "Research is to see what everybody else

has seen and to think what nobody else has thought". This implied endless possibilities for the innovation of the methods for investigating phenomena affecting accounting education, which could in turn close the gap between what occurs in practice and what is researched in this field. The researchers in the accounting education field should, therefore, attempt to investigate phenomena by means of using different research designs and combinations thereof, by applying the best practices highlighted throughout this research and the recommendations made. This may contribute to the robustness of research in this field, and develop the novice accounting education researcher into an established well-rounded scholar in this field.

This study contributed to the existing literature by simplifying the paradigmatic issues found in the field of accounting education today. It further presented a guideline for the novice researcher in the field of accounting education with regard to selecting a paradigm and methodology when investigating phenomena affecting students. The reader of this study, will, thus, have a deeper understanding of how the choice of methodology can affect the outcome of a study. The instances provided should assist the novice accounting education researcher to apply the principles highlighted and discussed throughout this paper.

RECOMMENDATIONS

As a starting point on this road to scholarship, it is recommended that the novice accounting education researcher realized and made an effort to understand that research in accounting education, as in any research field, has a philosophical perspective, and involves thinking about assumptions as to how one observes the social world. It is, therefore, imperative that any research project in accounting education start, by first, determining how the researcher views the phenomena under investigation (ontology), whether from a realist perspective where an external reality exists objectively from the researcher, or from a relativist perspective where reality depends on various situations and factors. The ontological position should then translate into epistemology where the questions regarding how the researcher views knowledge (that is, how the researcher came to know about the phenomenon) are determined. This knowledge can either be based on the experience of the senses which can be observed inside or outside of the classroom setting, or be seen as multi-layered and complex where a single phenomenon, such as the observation that audit students with no practical experience struggle to master the robust volume of study material, can be understood in numerous ways. The outcome of the epistemology decisions should determine the research paradigm in which the accounting education researcher conducts research so as to obtain an understanding of the observed phenomenon. This should be followed by the decision on how the accounting education researcher can go about obtaining the required knowledge (methodology), either through forming a hypothesis (deductive) to be tested, or making general conclusions based on repeated observations (inductive). Finally, the accounting education researcher should only then select the method of data collection pertaining to the specific research paradigm, whether it is in the form of a questionnaire, a focus group discussion, an interview or a combination thereof.

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