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Dr. Reckonel Simpson, PhD

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Dr. Reckonel Simpson, PhD

Email of the Corresponding Author: reckonelsimpson@gmail.com

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Abstract

In research, quantitative and qualitative methods are both useful and both serve their different purpose to each researcher, each operating within different assumptions. Quantitative just like qualitative research methods in educational research have brought about a number of debates. Some contending researchers seek to prove the underlying factor of whether or not research methods, be it quantitative or qualitative, can actually be value-free. In order for us to make sense of this complex world, we must as researchers have some underlining concept of some phenomena. If there isn't, then how can I make sense of the world? The truth of the matter is we can only know facts about reality and its existence through theories which we ourselves construct. It is my belief that these theories in and of themselves constitute values which impact on our research. So then to make sense of the research, we must clearly understand that the researcher affects the research process and thus the researcher and the research process are interdependent.

Introduction

Quantitative just like qualitative research methods in educational research have brought about a number of debates. Some contending researchers seek to prove the underlying factor of whether or not research methods, be it quantitative or qualitative, can actually be value-free. For those who argue value-free they tend to support the Positivist's perspective which suggests that the researcher's viewpoint must be separated from the research based on the assumption that this will make the research value neutral. This value neutrality they argue will provide universal truth. They hold to the view that the researcher and the object are two separate and independent things (Greenback 2003). This ontological argument as coined by positivist researchers seems to be dual in nature. According to Cohen et al. (2000) as cited in Greenback (2003) "the ontological and epistemological basis of positivism is a belief in a single independently existing reality that can be accessed by researchers adopting an objectivist approach to the acquisition of knowledge." This acquisition of knowledge will be generated through scientific methods which deal with experimentations.

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On the other hand, those who argue that research can never be value-free take the viewpoint of the Interpretivist. They are of the assumption that reality and the researcher cannot be separated. They theorize that the data that is collected is tainted by our own values. They go on to postulate that our beliefs and goals as well as how we generate the data, our working and analyzing make the research value-laden. From observation, it is my strong belief that the world which we exist in has both subjective and objective characteristics. Therefore, those agreeing to an interpretivist approach would “accept subjectivity and the idea that research can result in different or multiple realities” (Greenback 2003). Their arguments are further strengthened by the notion that data in Social Science research cannot be value-free (Richardson 2003).

In this paper, I will scrutinize the intrinsic differences between qualitative and quantitative research methods in education. First and foremost, I will carefully inquire into the concepts behind both research approaches in particular focusing on the background of each, and looking at the strengths and weaknesses of each. I will then proceed to justify my conclusion that whatever method or approach is used by researchers, none can be value-free.

The Concept of Quantitative Research in Education

According to Babbie (1992) quantitative research is defined as “the numerical representation and manipulation of observations for the purpose of describing and explaining the phenomena that those observations reflect.” According to Kuhn (1970) the decision as to which approach should be used in any research depends to a great extent on the research subject, the aim, and the researcher’s values and beliefs rather than a rational or logical analysis of both paradigms. Hence, choosing a particular approach depends largely on the given situation, the goals or objectives of the research and the decision of the researchers.

Quantitative research as used in education is developed from natural science. The concepts, purposes and methods of quantitative research used in natural science are quite applicable to educational research areas as it provides logical standards for educational research (Carr & Kemmis, 1986).

In my estimation, quantitative research is used to find out certain facts and to explain statistical truths. It involves the use of structural questions where the response options have been predetermined and a large number of respondents are involved. In simple terms, quantitative research is about figures. Smith (1983) places quantitative research as a “journey of the facts.” He theorises that ‘neutral scientific language’ is pertinent in quantitative research as it is used to find out precise facts.

Quantitative research embraces the deductive approach which seeks to test an already existing theory in order to provide some sort of evidence as to whether or not the hypothesis can be justified. This approach lends itself to the idea that science is an objective truth or fact. Babbie (2004) theorized that deductive reasoning moves from the general to the specific and that it provides a logical pattern. He further went on to say that the aim is to prove whether or not these patterns through observations actually occurred. Based on this notion, it seeks therefore to start with pre-specified objectives that are focused on proving through different tests these preconceived outcomes. Thus, the bases for the Positivists’ view point of value free research.

In my view some of the common assumptions of quantitative research include:

- The notion that reality is objective and independent of the researcher,
- The researcher should remain distant of what is being researched.
- The values of the researcher should not interfere with or become part of the research, thus research is seen as value-free.

Looking at the Positivists' perspective as it relates to values in research, it would be prudent to note their background. Their case is "based largely on the epistemology of positivist researchers which consists of scientific evidence, empirical and reliable data" (Brown 2008). These assumptions are the standpoint of the Positivists, which will be argued on later in this paper.

The Concept of Qualitative Research in Education

Babbie (1992) describes qualitative research as "the non-numerical examination and interpretation of observations, for the purpose of discovering underlying meanings and patterns of relationships." Qualitative research seeks to collect, analyze, and interpret data by observing what people do and say (Babbie, 2001). In contrast to quantitative research in education, it seeks to identify the researcher's voice and hence the researcher's subjectivity deeply affects the research process. It maintains that the researcher's subjectivity is central and is closely linked to the inductive approach, which at its core, starts with making observations of the world. It would seem to suggest that this observation seeks to develop a new hypothesis or better yet to make some significant impact on a new existing theory.

This induction as stipulated by Babbie (2004) is "the logical model in which general principles are developed from specific observations." It takes a unique approach by first looking subjectively at observations and doing some analysis to develop a particular pattern and processes that will explain the rationale of certain questions. As Babbie (2004) puts it, it seeks to develop a pattern that provides representation as it relates to order among all given events.

This idea supports Janesick's (2000) view that theorised that qualitative researchers hold to the fact that their research is ideologically driven. Her viewpoint is that there is no value-free or bias-free design. It would seem to suggest then, that in critically analyzing qualitative research, it is more subjective than quantitative research and therefore, uses very different methods of collecting information; that is, small numbers of people are interviewed in depth and/or a relatively small number of focus groups are conducted. Thus, whoever the researcher interviews, the wording used will to a great extent be related to his/her value judgment. As Bogdan and Biklen (2003) and Denzin and Lincoln (2000) allude that qualitative research methods are very useful in discovering the meanings and interpretations that people provide about events they experienced.

In qualitative research, the researcher's aim is fully explained in details, as the researcher is seen as the key person in the research and the process. Therefore, his/her personal experiences, assumptions and expertise would in effect influence the research process in one way or the other. This view is also supported by (Maanen 1979) who postulates that the researcher's personal knowledge and research experience fully influence the research.

Therefore, the basic assumptions of qualitative research lie in the ideology that multiple realities exist in any given situation, that is, the researcher's, the individuals being investigated and those interpreting the research results (see also Pring, 2000; Cohen *et al.*, 2000). The researcher also interacts with those being studied and actively works to reduce the distance between him/herself and those being researched and the researcher explicitly recognizes and acknowledges the value-laden nature of the research. These assumptions will be discussed later in this paper.

Research Methods: Can they be value-free?

As researchers undertaking research, be it qualitative or quantitative research, we should be aware of the effects of our values, ideologies, beliefs, goals, on the decision we make in regard to the data we collect, how we organize our data, the wording we use, and so on.

Even though the Positivists promote value free research, the underlying assumption in my mind is the idea that one's epistemological stance will take precedence in any given situation. Hence our political, language, cultural factors will all colour the prism through which researchers look. Can we say then that language is value free? The fact that the researcher is going to make sense of the data then it is automatic that he/she brings his /her values to the research table in one way or the other. Can anyone really understand human behaviour without first gaining insight into how we interpret our thoughts, emotions, feelings and actions? As researchers we need to understand this framework and, in my view, in order to do so we must make value judgments. Marshall & Rossman (1980) seem to suggest that even the 'objective' scientist, by coding, and standardising, may destroy valuable data while imposing his/her world on the subject.

Owing to the fact that research is loaded with these values, it automatically applies to everyone. Whenever a researcher is contemplating a particular research method to adopt, this will be influenced by his/her "underlying ontological and epistemological position" (Greenback 2003). If this is the case, then it is my opinion that before the researcher embarks on a particular research he or she brings his or her own values, ideologies, concerns, and sometimes answers into the research to either give support to a new or existing argument.

If as researchers we already have the answers, why do we need to conduct research? For some it is to convince others, others might say that researcher's arguments will only be valid when there is data to back it, which can be captured through primary or secondary research (Kothari, 2006). The obvious question then is, how is this data generated? Through research, and if it is through research then I question the premise of value-free as I wonder if research can truly be value-free when our beliefs and values infringe on our research.

Carr (1995) as cited in Greenback (2003) theorized "those who profess to carry out value-neutral research are deluding themselves. Also, MacDonald (1993) as cited in Greenback (2003) theorized that "they are also misleading others by presenting their research as depersonalised and value-free."

I believe it would be fair at this point to say that all quantitative data has some basis on qualitative judgement. My reason for this is that quantitative research by far deals with numbers/figures and numbers of themselves cannot be understood unless interpreted in a particular context. They must be interpreted to give meaning to the researcher. Only when it is interpreted will there be a clear or common understanding underlining the rationale of these numbers.

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Trochim (2006) provided a vivid example of the above concept when he put forward the statement which spoke to the fact that capital punishment is the best way of dealing with convicted murderers. Here, the respondent was provided with a key rating from 1 to 5 as follows:

1 Strongly Disagree 2 Disagree 3 Neutral 4 Agree 5 Strongly Agree

The respondent answered **2**, which is **disagree**. The underlining questions in my mind are: what does these 2 means? How can it be interpreted? In order to make sense of this response, there needs to be some interpretation of the value “2” and for us to do this, the idea is that some amount of judgement and assumptions must be made and therefore, these assumptions would heavily influence our underlying epistemological views (Greenback 2003). It would also require that we interpret this result and report them to others.

Even in the communication of language, the researcher’s values would have some impact on the interpretation hence, making it value-laden. It is my view that our faculty of language including critical thinking skills is affected by political, sociological and cultural factors which in and of themselves have values, and if this is the case, the notion that research is value-free is a myth as our own values in one way or another infringe upon the interpretations we make when we conduct our research. Thus, making it value-laden.

It was Weber who argued that social scientists should not let their personal values influence their scientific research, but he further allured to the importance of meaning and consciousness in understanding social actions. Is not this consciousness an act of value?

This argument is further strengthened owing to the fact that as researchers conducting research we cannot fully understand the functions of humans and their behavior without first gaining insight into the framework in which we operate, how we feel, think and act. In my view it is important to understand this framework in order to make sense of the world in which we live. Marshall and Rossman (1980) stated that in making sense of our world we have to code, standardise, and interpret data and while doing so we may impose our values thus affecting the research process.

Comte and Durkheim, well-known Positivists, held the belief that human studies should adopt the methods of the physical sciences. Deep in this belief is the fact that there is detachment and impartiality in the research thus making it value-free. In my view, it would seem that research methodology has its roots in philosophy and philosophy is entrenched in one’s epistemological view as it seeks to guide the construct of knowledge and this foundation of epistemology comes with its own value judgement.

In research, quantitative and qualitative methods are both useful and both serve their different purpose to each researcher, each operating within different assumptions.

Generally, qualitative research seeks to generate rich, detailed and valid data that contribute to an in-depth understanding of the matter being studied (Babbie, 2001). On the other hand, quantitative research generates reliable, generalised data that can establish cause and effect relationships. Babbie (2010) claims that, quantitative research methods are concerned about measuring and analyzing data collected through mathematical or numerical analysis. However, researchers argue that quantitative research fails because it cannot actually define or measure enough of the variables

to understand natural interactions and that qualitative researchers cannot rigorously examine the detailed structures underlying complex natural interactions.

In any event it would seem to me that research cannot be value-free, for a number of reasons. One reason is that quantitative research may reflect researcher-values and subjectivity in ways that make it value-laden. First, a critical aspect of this type of research is the setting of a hypothesis, a statement suggesting that one variable causes/is related to another. Babbie (2004) alludes deriving a hypothesis stems from one's idea or attention or philosophy. Hence, a researcher's desire to prove the hypothesis may result in flawed or invalid research, which may take the form of asking leading questions or otherwise influencing the responses of the participants.

Secondly, in order to measure the variables in quantitative research, the concepts have to be operationalised. Henslin (2006) posited that "an operational definition is a precise way used to measure variables". Hence, in my view this operationalisation of terms is a process that is subjected to the researcher's definition of the concepts. Thus, the study may measure the researcher's definition of the concepts rather than the concepts themselves; this is another way in which the values of the researcher can interfere with the research and make it value-laden.

Thirdly, although quantitative data is more objective than other data, It is often times seen as being more precise or valuable than qualitative research. As Payne and Payne (2004, p. 180) stated "Quantitative methods (normally using deductive logic) seek regularities in human lives, by separating the social world into empirical components called variables which can be represented numerically as frequencies or rate, whose associations with each other can be explored by statistical techniques, and accessed through researcher-introduced stimuli and systematic measurement." Therefore, it can be more quantified in determining patterns. However, it can still lead to subjectivity in regard to interpretation problems, as quantitative researchers may interpret the data in any way they wish, which is often associated with proving a hypothesis. That is, a researcher may interpret the data in such a way that proves his/her hypothesis when it may not.

By just choosing a particular method over another or a particular field of study over another already paints his/her value judgments on the research. The fact is whatever we choose to study stems from our own interests and preferences which in itself in my view is expressing a value judgement. Markham (2007) seems to support this view when he theorized that "no context is value-free". Therefore, one's academic discipline will impact on the way we make our interpretation, observations, and conclusions. This we do in order to make sense of phenomena under investigation. See also (Hammersley and Atkinson, 1994; Yanow and Schwartz-She, 2006). The bottom line is that our research objectives will have significant impact on the value judgements we make which undoubtedly, will impact on the research outcome, which in my mind, will make the research value-laden.

Although the assumption is that both approaches are different, the underlying factor is that researchers, who choose a particular approach, all have the same underlying goal that is; all are concerned in my opinion with trying to give an understanding of the world around them. That is, they all set out to prove a hypothesis. In proving this hypothesis, as they undertake the research they all bring their own biases and prejudices to the research.

Thus, the underlying difference it seems to me is not clear as each perspective draws from the other in one way or the other. Whether in the interpretation, analysis or gathering of data, the

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Interpretivist model at times draws from the Positivists' model and vice versa. An example of this is viewed by Lee (1989) who put forward the point that ethnographers in collecting large sums of data within an interpretivist tradition may still use inferential statistics to try to determine whether selected behaviors' (not all behaviors) of some group manifest certain kinds of regularities. This method according to Lee (1989) epitomizes a Positivistic method of data analysis.

Therefore, whichever research method that researchers tend to adopt the commonality in my mind is to justify the phenomena we seek to investigate, as each researcher will adopt specific methods be it qualitative or quantitative based on a number of factors that will enhance their objectives. All these factors will in one way or another influence the process of the research, the design of the research as well as the outcome. Hence making it value-laden

Conclusions

In putting the whole matter to perspective, I wish to emphasise that researchers will always come to the research arena with their own beliefs and value system and thus these values and beliefs will undoubtedly influence the research process in some way or another. No matter how hard we try there will always be the researcher's values imposing on the research we conduct as we cannot divorce ourselves from the world and its constructs.

In order for us to make sense of this complex world, we must as researchers have some underlining concept of some phenomena. If there isn't, then how can I make sense of the world? The truth of the matter is we can only know facts about reality and its existence through theories which we ourselves construct. It is my belief that these theories in and of themselves constitute values which impact on our research. So then to make sense of the research, we must clearly understand that the researcher affects the research process and thus the researcher and the research process are interdependent.

The very research topic that we formulate is often related to our individual interests and desires. Therefore, it is time that as researchers, we end the research debate of whether or not research can be value-free or value-laden and seek to adopt a combined method of research that will evidently seek to come up with the best solution using different research perspectives, as this can provide greater insight and knowledge of areas under investigation. Though they are underlying barriers, what is required is a reflexive approach where credence will be given to the acknowledgment of education and research and their importance to society. The fact is there can be great improvement if qualitative and quantitative researchers adopt this combined method.

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