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Qualitative and Quantitative Approaches to Educational Research and the Possibility of Mixed Methods

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Abstract

There are some philosophical underpinnings that are associated with the researcher's personal and professional autobiography play crucial role in giving headway into the research. The paper will discuss the two dominant research methods; quantitative and qualitative approaches, which are necessary for most current research practice as being an educational researcher. Therefore, their strengths are exploited to apply into the data collection techniques although both of them have advantages and disadvantages and receive much criticism. Besides that, the ontological, epistemological and axiological assumptions are also mentioned briefly to highlight their importance in terms of providing the values and beliefs for a novice researcher.

Keywords: quantitative; qualitative; assumption; philosophical underpinnings

1. Introduction

The author in [2] says that qualitative research provides a case study of a case, a group, a situation, or an event and qualitative research is defined as "the study of cultural pattern and perspectives of participants in their natures". In quantitative research, the data are "numbers represent quantities of whatever was measured" [2].

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Quantitative research is done to identify the relationships, causes and effects of social phenomena [19]. From their distinct nature, the philosophical bases are quite different causing the reason why it is helpful to discuss their nature in a comparative way [20]. The author in [20] claims that qualitative research is from a phenomenological position of some areas including grounded theory, symbolic interaction and ethnography while quantitative research is centered on a positivist position. Phenomenological position see the person 'as having no existence apart from the world, and the world as having no existence apart from the person' [8]. Moreover, qualitative research sees the world in action whereas quantitative research cannot capture the subjects 'perspective' [5]. Qualitative inquiry relies on subject-subject relation so the researchers look into things in their nature but quantitative inquiry depends on a subject-object relation so the researchers are less concerned with things in the nature [3]. The author in [20] argues that 'the qualitative paradigm emphasizes the importance of subjectivity experience of individuals unlike the quantitative paradigm. In this sense, qualitative research is not a search for knowledge for knowledge sake, but a search for the significance of knowledge. Thus, the qualitative researchers like a theory coming from the contextual context better while quantitative researchers like using 'deductive reasoning' [3]. To understand if the generation of existing theory is working, the quantitative inquiry is 'based on testing and measuring a theory through statistical procedures' [4].

2. The relationship between quantitative and qualitative paradigm

It is necessary to discuss the assumptions of quantitative and qualitative paradigm to explain the relationship between them. According to the authors in [10], a paradigm is defined as 'a set of overarching and interconnected assumptions about the nature of the reality'. However, the term 'axiom' is used as synonymous with assumptions and defined as 'the set of undemonstrated basic beliefs accepted by convention or established by practice as the building blocks of some conceptual or theoretical structure or system' [8]. The author in [20] says that when discussing the postulates she will draw on three basic references including ontological, epistemological and axiological assumptions. The author in [10] argues that the first one deal with the questions about the nature of reality, the second one concern the origins of the knowledge and the relationship between the knower and the known; the last one answers the questions what is worth knowing and why? As for ontological assumptions, "the quantitative researcher views reality as 'objective', 'out there' independent of the researcher. Something can be "measured objectively by using a questionnaire or an instrument" [4]. Whereas, multiple realities have been believed by qualitative researchers and these realities 'should be studied holistically in any given situation' [8]. In terms of epistemological assumptions, the quantitative researchers remain distant but qualitative researchers' interact with those they study through the forms of living with, observation, or actual collaboration' [20]. What is about the values in the research, the author in [4] argues that the value-laden nature of the study, the values and information collected from the field are admitted by qualitative researcher.

The idea of combining qualitative and quantitative approaches in a single study owes much to past discussions about mixing methods, linking paradigms to methods, and combining research designs in all phases of a study. In terms of mixing methods, in 1959 Campbell and Fisk sought to use more than one method to measure a psychological trait to ensure that the variance was reflected in the trait and not in the method. By 1987 the author in [5] used the term triangulation, a term borrowed from navigation and military strategy, to argue for the combination of methodologies in the study of the sample phenomenon. The concept of triangulation was based

on the assumption that may bias inherent in particular data sources, investigation and method would be neutralized when used in conjunction with other data sources, investigators, and method [12]. A combined method study is one in which the researcher uses multiple methods of data collection and analysis. These methods might be drawn from “within methods” approaches, such as different types of quantitative data collection strategies. Alternatively it might involve “between methods”, drawing on qualitative and quantitative data collection procedures. The author in [6], for example, cited numeral illustrations of combinations in the literature, ranging from observations, the mixing of ethnography and experimental research, and the successful combination of survey research and qualitative procedures.

3. Criticisms on quantitative and qualitative paradigm

Even though there are some ideas for quantitative and qualitative paradigm, there are also some criticisms. The authors in [3] argue that:

“Positivist approach fails to take account of our unique ability to interpret our experiences and represent them to ourselves. We can, and do construct theories about ourselves and our world; moreover, we act on these theories. In failing to recognize this, positivist social science is said to ignore the profound differences between itself and the natural sciences”

Moreover, positivism’s assumptions get much criticism as they are hard and difficult to maintain [20]. At the same time, qualitative paradigm is considered to have the shortage of objectivity, reliability and validity and the quality techniques are not associated with measurement that is less structured than quantitative techniques [19]. Yet, qualitative findings are convincing to a reader [12].

Clearly, each type of research has strengths and weaknesses and each one consists of unique case study, data collection, semi and unstructured interviewing, surveys, questionnaires and observations, content analysis and statistics. According to the authors [9], ‘combined studies have made important contributions to program evaluation, organizational studies and the like’. Linking data can reduce the weaknesses of each method. Furthermore, the validity of findings and the degree of confidence will be enhanced by the use of multiple data collection [20]. The author [2] recommends that the broad conduct of research is easier if some groups may be more receptive to a qualitative than to a quantitative component or vice versa. However, combined designed could be a headache for novice researchers and combined research cannot be unproblematic [2]. There have been some suggestions of ways of linking quantitative and qualitative approaches. The author in [20] recommends four models of linking. The first model is qualitative case studies illustrate the quantitative findings. Using the qualitative results to give an explanation for the findings of quantitative research is the second way. The third model is that hypotheses can be produced by the use of qualitative evidence. The last model is to use qualitative studies to produce typologies. The author in [2] ensures that:

“Employing both quantitative and qualitative research may provide a means of bridging the macro-micro gulf since quantitative research often studies large-scale structural features of social life, while qualitative research

represents small-scale, behavioral aspects. Another use for combined research is to employ quantitative and qualitative in different stages of a longitudinal study”.

4. Conclusion

This paper has just mentioned the nature, advantages, disadvantages, the criticisms and the possibility of linking two paradigms, they are, quantitative and qualitative paradigms, which has the contribution to providing researchers with the philosophical underpinnings to form the background as “the researcher you are is the person you are”. Both of these paradigms focus on generating knowledge, so researchers should exploit their strengths in their future research.

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