THE PLACE OF MIXED METHODS RESEARCH IN THE FIELD OF ADULT EDUCATION: DESIGN OPTIONS, PROSPECTS AND CHALLENGES

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Abstract

There is a long and rich history of scientific inquiry in the field of adult education. Such inquiries have culminated in the development of theories and models that have shaped the field. In order to conduct a successful study aimed at enhancing learning among adults, adult educators have generally employed conventional research approaches namely qualitative and quantitative with the former being perhaps the most preferred approach. Such approaches with fixed paradigmatic inclinations restrict practitioners and scholars alike in getting broader perspectives on adult education problems. This paper argues that adult education research should adopt a more flexible approach to research that allows the researcher the freedom of using methods that transcend the quantitative and qualitative research divides hence the need for mixed methods research. This paper therefore sought to identify the prospects and challenges of employing the mixed methods research approach in the field of adult education. It also looks at the various design options available to adult education practitioners, scholars, and researchers.
Keywords: Research, mixed methods, adult education, approach, paradigm

INTRODUCTION

The significance of research in any field of study and/or practice cannot be understated. As such scientific inquiry is considered a *sine qua non* in all academic and professional fields. In conducting research, researchers employ different approaches in order to find solutions to their central research problem. Approaches to understanding social phenomena are guided by certain philosophical underpinnings normally referred to as paradigms. Two main approaches (quantitative and qualitative) have gained popularity and have widely been employed by researchers in the social sciences. Adult education, even though a

relatively young field of study and practice, has enjoyed a long and rich history of research on the many pressing issues in the field. Many scholars have also written extensively about procedures in conducting adult education research. This has contributed immensely in shaping the way in which research is conducted in the field.

Research in adult education like other fields has been influenced by paradigmatic debates about the nature of reality and knowledge, how research must be conducted, and the relationship between researchers and researched. Such debates have historically resulted in two main philosophical divides – quantitative and qualitative. Researchers employing such approaches have to a large extent monopolized their respective methods. This implies that researchers are obliged by philosophical underpinnings and predetermined steps and guidelines under which the study of social phenomena must be carried out. The author is of the view that such limitations affect the researcher's ability to study a phenomenon using different lenses and elicit diverse information.

There is therefore the need for researchers and for that matter, adult education researchers to adopt a more flexible approach to the study of social phenomena instead of the rigidity which had hitherto been placed on researchers by the two conventional approaches hence the need for mixed methods research approach. This paper therefore sought to explore the challenges and prospects of employing mixed methods research approach in researching adult education problems. The various design options available to the adult education researcher were also examined to give an insight to how adult education practitioners can practically employ mixed methods research in empirical studies.

MIXED METHODS RESEARCH – A LITERATURE REVIEW

The mixed methods research method implies the use of both quantitative and qualitative research methods in a single study. Mixed methods research has been defined by Tashakkori and Creswell (2007:4) as research in which the investigator collects and analyses data, integrates the findings, and draws inferences using both qualitative and quantitative approaches and methods in a single study programme. Both qualitative and quantitative research methods have their inherent strengths and weaknesses. While the quantitative research approach can be construed as a research strategy that entails quantification in the collection and analysis of data, qualitative research approach can be seen as a research strategy that usually emphasizes words rather than quantification in the collection and analysis of data (Bryman, 2012:35). Commenting on the inherent weaknesses of both quantitative and qualitative research, Brady and Collier (2004:5) noted that:

> …a meaningful discussion of methodology must be grounded in the premise that strengths and weaknesses are to be found in both the qualitative and quantitative approaches. Regarding the weaknesses…qualitative researchers are perhaps 'handicapped by a lack of quantification and small numbers of

observations', whereas quantitative researchers may sometimes suffer from 'procrustean quantification and a jumble of dissimilar cases'.

In order to circumvent the various limitations of quantitative and quantitative research approaches, there is the need to adopt a methodological stance that reconciles both approaches in a single study. The idea behind this stance is that the two approaches have the potential to complement each other. Neuman (2006: 177) could not agree more with this view when he argues that:

> the qualitative and quantitative distinction is often overdrawn and presented as a rigid dichotomy. Too often, adherents of one style of social research judge the other style on the basis of the assumptions and standards of their own style….The well-versed prudent social researcher understands and appreciates each style on its own terms and recognizes the strengths and limitations of each. The ultimate goal of developing a better understanding and explanation of the social world comes from an appreciation of what each has to offer.

As such a combination of the two in a single study would enable the researcher to elicit rich information on the topic under investigation. As has been noted quantitative and qualitative research approaches are guided by basic ontological and epistemological positions which distinguish one from the other. However, there are many instances where such positions either overlap or are overlooked in the conduct of social research. This position is shared by Platt (1996) when he makes the following observation:

> research methods may on the level of theory, when theory is consciously involved at all, reflect intellectual 'bricolage' or 'post hoc' justifications rather than the consistent working through carefully chosen fundamental assumptions. Frequently methodological choices are steered by quite other considerations, some of a highly practical nature…In many cases general theoretical/methodological stances are just stances: slogans, hopes, aspirations, not guidelines with clear implications that are followed in practice (pp. 275).

In line with Platt's observation, the study of social phenomena should be premised on the belief that the conduct of research should not be informed by clearly laid down methodological guidelines which must be followed to the letter, instead social phenomena should be studied in the best way possible. This calls for adult education practitioners, scholars, and researchers to take an unbiased stance to the study of problems within the field. Again, mixed methods research presents the researcher with many benefits. The following benefits have been advanced by Venkatesh et al (2013) cited in Caruth (2013:113):

- Complementarity - to obtain mutual viewpoints about similar experiences or associations. The use of different methods from both the quantitative and qualitative

divides enables the researcher to obtain various viewpoints which augments information elicited from either side.

- Completeness - to ensure total representation of experiences or associations is attained.
- Developmental - to build questions from one method that materialize from the implications of a prior method or one method presents hypotheses to be tested in a subsequent method.
- Expansion - to clarify or elaborate on the knowledge gained from a prior method.
- Corroboration/Confirmation - to evaluate the trustworthiness of inferences gained from one method. This means that the findings obtained from quantitative data analysis can help to validate the qualitative findings.
- Compensation - to counter the weaknesses of one method by employing the other. The inherent weaknesses of both qualitative and quantitative research methods are adequately taken care of by either method.
- Diversity - to obtain opposing viewpoints of the same experiences or associations. Through the mixed methods research the researcher was able to obtain different information from the different data collection tools employed. This enabled the researcher to gain rich insight into the problem under investigation.

PARADIGMS UNDERPINNING MIXED METHODS RESEARCH APPROACH

Mixed methods research approach is based on certain paradigms. Such paradigms have sought to depict mixed methods research as a legitimate and distinct approach to understanding social phenomena. According to Bryman (1988a:4) a paradigm is "a cluster of beliefs and dictates which for scientists in a particular discipline influence what should be studied, how research should be done, and how results should be interpreted". Paradigms thus define different views of the social world based upon different meta-theoretical assumptions with regard to the nature of science and society (Pansiri, 2005:192). Paradigms can also be considered as philosophical perspectives that guides scholars and for that matter, researchers in their work. As has been noted by Savin-Baden and Major (2013:18), "without philosophical underpinning, technique can become an empty process, therefore, understanding the origins of and circumstances under which different philosophies developed can help researchers to ascertain which philosophies are compatible with their own, which in turn can help them to make better research choices and ultimately do better research".

The mixed methods research approach borrows from both qualitative and quantitative philosophies. As such in order to properly understand the main paradigm behind the approach there is the need to understand the paradigms that have shaped the quantitative and qualitative research divides.

- **Positivism**

The term positivism was first coined by the founder of positivism, Auguste Comte, the French philosopher who believed that reality can be observed (Mack, 2010:6). Cohen, Manion, and Morrison (2007:9) claim that "Comte's position was to lead to a general doctrine of positivism which held that all genuine knowledge is based on sense experience and can be advanced only by means of observation and experiment". Positivist paradigm has guided the conduct of research in the natural sciences. According to Onwuegbuzie (2002) modern day "positivists" claim that science involves confirmation and falsification, and that these methods and procedures are to be carried out objectively. The positivists believe that the assumption and methods of the natural sciences can be applied in the social science. Babbie and Mouton, (2011:21) confirm this view by noting that those who support positivism argue as follows:

> the natural sciences have made spectacular progress especially since the scientific revolution of the seventeenth century, and it is reasonable to assume that this progress is largely due to its particular methodology. The social sciences on the other hand have not yet made similar advances and are therefore, when compared with the natural sciences, still in a stage of relative underdevelopment and immaturity. The only solution to this problem lies in the application of the methodology of the natural sciences in social science research.

According to Neuman (2003) cited in Tuli (2010:100) positivism sees social science as an organized method for combining deductive logic with precise empirical observations of individual behavior in order to discover and confirm a set of probabilistic causal laws that can be used to predict general patterns of human activity. It is the belief of positivists that the methods employed in the natural sciences can be applied to the study of social phenomena. This means that analysis of social phenomena should be expressed in laws or law-like generalisations of the same kind that have been established in relation to the natural sciences (Cohen, Manion, and Morrison, 2007:10).

Kolakowski (1972) cited in Krauss (2005:761) states that positivism embraces a four point doctrine: (1) the rule of phenomenalism, which asserts that there is only experience; all abstractions be they "matter" or "spirit" have to be rejected; (2) the rule of nominalism – which asserts that words, generalizations, abstractions, etc. are linguistic phenomena and do not give new insight into the world; (3) the separation of facts from values; and (4) the unity of the scientific method. Positivists contend that reality is objective and that the researcher is an independent observer of such reality. As such positivists believe that different researchers observing the same factual problem will generate a similar result by carefully using statistical tests and applying a similar research process in investigating a large sample (Creswell, 2009 cited in Wahyuni, 2012:71). Such beliefs have guided quantitative researchers for many years and have motivated the use of the scientific method in the study of social phenomena.

On the other hand qualitative researchers posit a different view about reality, ethics, knowledge, and methodology. Many qualitative researchers have adopted Interpretivism as the underlying paradigm behind their studies.

- **Interpretivist Paradigm**

According to Bryman (2012:28) interpretivists share a view that the subject matter of the social sciences – people and their institutions – is fundamentally different from that of the natural sciences. This means that the study of social phenomena should not be done in a manner that depicts the social world as following a set of rules. This is because human beings are not objects and for that matter, do not respond to stimuli mechanically. They are conscious of the environment and make decisions based on mental processes. Therefore in order to understand social phenomena, there is the need to understand the subjective meaning of human experience. The view of Cohen, Manion and Morrison (2007:21) best describes the role of the researcher in the interpretive paradigm. They assert that:

> to retain the integrity of the phenomena being investigated, efforts are made to get inside the person and to understand from within. The imposition of external form and structure is resisted, since this reflects the viewpoint of the observer as opposed to that of the actor directly involved.

The above assertion brings to the fore the idea that the goal of interpretivism is to understand the meanings people give to objects, events in the environment and human behaviour. It is however important to stress that meaning making is subjective and that different people will make different meanings of a particular social phenomena. This means that meaning making is not universal but multiple. By multiple meaning making the author means that reality is informed by individual constructions and as such are varied and many. Interpretivism falls under the qualitative research approach and entails an in-depth understanding of social phenomena in order to interpret how the people concerned make meaning of their experiences.

- **Pragmatism – the Philosophical Basis for Mixed Methods Research**

The positivist and interpretivist paradigms discussed above have distinct assumptions about the nature of reality, knowledge, and research which put them opposite sides of the paradigmatic argument. The various assumptions have to a large extent shaped the manner in which research is conducted. However, in the late 19th century scholars began to question the various assumptions and polarity of the positivist and interpretivist paradigms. This led scholars to suggest an alternative paradigm that sought provide a distinct view about the nature of reality, knowledge, and research. Pragmatism – the alternative philosophical orientation emerged in the United States in the late 19th to early

20th centuries through the writings of Peirce, James, Dewey and Mead among others (Goldkuhl, 2012:7).

According to Kloppenberg (1996:101), the early pragmatists sought to reorient philosophy away from interminable and fruitless debates by insisting that ideas should be tested in practice. Pragmatists are of the view that, not only are things worthless if they are not acted upon, but that in the absence of actions they fail to have an existence (Joas, 1987). Pragmatists reject the various assumptions of the positivists and interpretivists. In showing the distinctiveness of pragmatism from positivism and interpretivism, Powell (2001:884) argued that:

> whereas positivism emphasizes the objective, law-like properties of a brute reality independent of observation (Donaldson, 1992; Wicks and Freeman, 1998), anti-positivism emphasizes the creative role of active, subjective participants, none of whom owns a privileged claim on truth (Burrell and Morgan, 1979; Astley, 1985; Martin, 1990). Pragmatism, on the other hand, rejects positivism, on grounds that no theory can satisfy its demands (objectivity, falsify-ability, the crucial experiment, etc.); and rejects anti-positivism, because virtually any theory would satisfy them. As such, the pragmatist proposes to reorient the assessment of theories around a third criterion: the theory's capacity to solve human problems (Rorty, 1989; Stich, 1990).

The above argument suggests that pragmatists are more interested in employing approaches that best solves the research problems. In this regard, pragmatism has been hailed as the foundation of mixed methods research. The focus of pragmatism is on solving practical problems in the "real world" (Feilzer, 2010, p8). Johnson and Onwuegbuzie (2004: 17) in support of the above views notes:

> we agree with others in the mixed methods research movement that consideration and discussion of pragmatism by research methodologists and empirical researchers will be productive because it offers an immediate and useful middle position philosophically and methodologically; it offers a practical and outcome- orientated method of inquiry that is based on action and leads, iteratively, to further action and the elimination of doubt; and it offers a method for selecting methodological mixes that can help researchers better answer many of their research questions.

This paradigm enables a researcher to view the world in two lenses namely the positivist and interpretivist. As such the researcher gains a better understanding of the world in general and in particular the phenomenon under investigation.

RESEARCH DESIGN OPTIONS IN MIXED METHODS RESEARCH

Leech and Onwuegbuzie (2009:267) provide the procedure for the use of both quantitative and qualitative research methods in a single study. They state that "when undertaking a

mixed methods study, the researcher uses qualitative research methods for one phase or stage of a research study and quantitative research methods for the other phase or stage of the research study. Thus, a qualitative and a quantitative research study are conducted either concurrently or sequentially." In mixed methods research, there are various design options available to the researcher. Design options provide a researcher with a framework of how the two distinct approaches should be practically employed in a single study.

Mixed methods research designs are based on two main factors; dominance and sequence. By dominance the researcher asks the question of which of the two approaches should take supremacy in the study. In other words, which approach over the other should widely be used in the study? On other hand with sequence the question posed is: which of the approaches would be used in the initial stages and which one would be used in latter stages of the study? On dominance, an approach can either be dominant or equal. Sequence on the other hand can either be simultaneous or sequential. Simultaneous implies that both approaches are employed at the same time. Other researchers have opted to use words such as "parallel" (Teddlie and Tashakkori, 2009, Mertens, 2010) and "concurrent" (Creswell, 2009) in place of simultaneous. On the contrary, sequential implies the use of one approach followed by the other. In other words, one approach precedes the other in employment.

In line with the explanations given above, the following designs as suggested by Johnson and Onwuegbuzie (2004) can be employed in adult education research:

1. **Dominant sequential mixed methods design**: involves the use of both quantitative and qualitative research methods at different stages of a study and where one approach takes precedence over the other. This can be depicted as follows: **QUAN qual** or **QUAL** **quan.** $\longrightarrow$

2. **Equivalent sequential mixed methods design**: involves use of both quantitative and qualitative research methods at different stages of a study and where both approaches have equal status in the study. i.e. **QUAN** $\longrightarrow$ **QUAN** or **QUAL** $\longrightarrow$ **QUAN.**

3. **Dominant simultaneous mixed methods design**: involves the use of both quantitative and qualitative research methods at the same time in a single study and where one approach takes precedence over the other .i.e. **QUAN + qual** or **QUAL + quan.**

4. Equivalent simultaneous mixed methods design: involves the use of both quantitative and qualitative research methods at the same time of a study and where one approach takes precedence over the other i.e. **QUAN + QUAL or QUAL + QUAN**

According to Teddlie and Tashakkori (2009) cited in Mertens (2010:298) two other designs can be suggested. One of such designs entails the conversion of qualitative data to quantitative form or vice versa. This they refer to as conversion design. The other design which they refer to as multilevel design involves the collection of quantitative data at one

level of an organisation (e.g., student level) and qualitative data at another level (e.g., administrator level) (Mertens, p. 298).

SAMPLING IN MIXED METHODS RESEARCH

Sampling constitutes a very crucial stage in any research endeavour. Since mixed methods research borrows from two different approaches, Mertens contend that mixed methods researchers cannot escape the complexities in sampling for either quantitative or qualitative research; rather their challenges are compounded by having both sets of issues as well as the complexity of mixed methods to deal with. However mixed methods researchers have sought to devise various sampling strategies that satisfy the needs of the researcher. Mertens further suggests four sampling strategies as follows:

1. Identical sampling (same people in qualitative and quantitative samples).
2. Parallel sampling (Different people in quantitative and qualitative samples, but both from the same population, e.g., adult learners in a district),
3. Nested sampling (a subset of those in one method of the study are chosen to be in the other part of the study), and
4. Multilevel sampling (different people from different populations are chosen for the different approaches of the study).

Depending on the researcher's interest these strategies can enable the researcher to select an appropriate and mover diverse sample.

PROSPECTS

The mixed methods research approach holds great prospects for the adult education researcher. Adult education research concerns itself with not only understanding problems in the field but also seeks to find solutions to such problems. Adult education practitioners are interested in finding out amongst others, how best to promote effective learning amongst adults and how to enhance of the conditions of life of adults through education. The two conventional research approaches (quantitative and qualitative) as has been noted places certain restrictions on the choice and subsequent use of methods due mainly to their paradigmatic inclinations. This paper argues that in order to find answers to the many problems facing adult learners, adult education practitioners need flexibility in the choice and use of research methods. It is important to note that the use of many and different strategies would enable to practitioner to gain a greater insight into the problem under investigation. This view is supported by the Morse (2003:189) when he as argues that:

> By combining and increasing the number of research strategies used within a particular project, we are able to broaden the dimensions and hence the scope of our project. By using more than one method within a research study, we are able to obtain a more complete picture of human behaviour and experience. Thus, we are better able to hasten our understanding and achieve our research goals more quickly

The various design options discussed provide the adult educator with options as to the dominance and sequence of the approaches. This ensures uniformity and rigour in the research endeavour and promotes credibility of the research findings. The various sampling techniques hold great potential for the adult education mixed methods researcher in the sense that the researcher is not restricted to conform to sample selection guidelines as depicted by either of the two approaches. Through mixed methods research, the researcher is able to select a wider and more diverse sample and to elicit similarly diverse information on the topic under study. The use of the mixed methods research approach enables the researcher to counter the inherent weaknesses of both the qualitative and quantitative research approaches.

CHALLENGES

The mixed methods research approach presents some challenges to the researcher and for that matter the adult education researcher. Bryman (2012:629) discusses two main arguments against mixed methods research. The first argument which he terms the embedded methods argument implies that "research methods are ineluctably rooted in epistemological and ontological commitments… as such the decision to employ, for example participant observation is not simply about how to go about data collection but a commitment to an epistemological position that is inimical to positivism and that is consistent with interpretivism". The second argument which Bryman calls the paradigm argument "conceives of quantitative and qualitative research as paradigms in which epistemological assumptions, values, and methods are inextricably intertwined and are incompatible between paradigms" (p. 269). Bryman continues by arguing that "when researchers combine participant observation with a questionnaire, they are not really combining quantitative and qualitative research, since paradigms are incommensurable – that is, they are incompatible: the integration is only at the superficial level and within a single paradigm".

Taking Bryman's argument as a case in point, the crux of the arguments against mixed methods research has more to do with philosophical inclinations of the quantitative and qualitative research approaches rather than practicality. Even though the philosophical arguments against mixed methods approach are to some extent logical, mixed methods researchers subscribe to a more practical approach to conducting research i.e. what works best must be employed in a research study.

CONCLUSION

The increasing complexity of adult education issues requires an approach to research which promotes flexibility and workability in studying such issues. Mixed methods research has the potential of providing adult education practitioners with the needed versatility and usefulness in approach. Practitioners in the field of adult education can employ mixed

methods research as a viable approach to understanding and solving the various issues within the field. Its methods would add depth and rigour to any empirical study in adult education.

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