Journal of Emerging Trends in Educational Research and Policy Studies (JETERAPS) 5(2): 272-281
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jeteraps.scholarlinkresearch.org

Ensuring the Quality of the Findings of Qualitative Research: Looking at Trustworthiness Criteria

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Abstract
This paper identifies that masters of education students at the University of Dar es Salaam School of Education and Open University of Tanzania are faced with a challenge of deciding which trustworthiness criteria to employ between the qualitative and quantitative criteria in ensuring the genuineness of qualitative enquiry. This paper used 323 students' masters of education dissertations employing the qualitative research methodology and examined the trustworthiness criteria used by students to ensure the rigour of the findings of those dissertations. The findings indicated that most of the students in their dissertations incorrectly employed the quantitative trustworthiness criteria such as reliability and validity to ensure the rigour of their dissertations findings employing the qualitative research methodology. In the sampled masters of education dissertations only 21 out 323 employed the correct qualitative trustworthiness criteria, such as credibility, transferability, confirmability and dependability. This study finding suggests that the authenticity of some dissertations submitted for master's degree award their findings are questionable. The study recommendations were that research methodology course lecturers are encouraged to strengthen teaching of the qualitative research approach as well as dissertation supervision to guide students to apply correct trustworthiness criteria for qualitative research methodologies.

Keywords: trustworthiness, qualitative, quantitative, credibility, dependability, confirmability, transferability.

INTRODUCTION

Graduate research students studying for their master's degrees in education at the University of Dar es Salaam and Open University of Tanzania face challenges in deciding which criteria to use between the qualitative and quantitative criteria to ensure the trustworthiness of their research findings. Any inquiry, irrespective of its approach, is usually evaluated by peers, readers and sponsors or grant providers (Krefting, 1991). The evaluators of research projects or findings usually adopt some trustworthiness criteria that have been agreed on the literature in relation to a particular research approach, such as qualitative, quantitative and mixed methods research. Each research approach employs different evaluation criteria to ensure the rigour of the inquiry because of different philosophical and methodology assumptions guide each approach. These major distinctive features of qualitative and quantitative inquiry are summarized in Table 1

For example, quantitative researchers take into consideration the *reliability, objectivity* and *validity (i.e. internal and external)* to ensure the trustworthiness of the inquiry findings (citation). In contrast, qualitative researchers consider that *dependability, credibility, transferability and confirmability* as trustworthiness criteria ensure the rigour of qualitative findings(Guba, 1981; Schwandt, Lincoln, & Guba, 2007). The criteria for assessing quantitative research are well established in the research literature and it was the dominant approach for more than a century. However, this has resulted in their erroneous use by graduate research students for assessing the rigour of qualitative inquiry, although its philosophical and methodological assumptions are different from those of the quantitative approach, because these criteria for assessing quantitative inquiry have been challenged by qualitative researchers on the grounds that they do not ensure the trustworthiness of qualitative findings. Therefore, this study was intended to find out why masters of education students at the *University of Dar Es Salaam School of Education* and *Open University of Tanzania* are using quantitative trustworthiness criteria (validity and reliability) in ensuring authenticity of the findings qualitative enquiry.

STATEMENT OF THE PROBLEM

Qualitative research approaches are diverse, consisting of a variety of philosophical paradigms, such as interpretivism, phenomenology, semiotic, ethnographic, ethnomethodology, feminism, constructivism, social realism, contemporary hermeneutics and critical theory, symbolic interactionism and others (Avramidis & Smith, 1999; Blaikie, 2010; Bryman, 2008; Guba & Lincoln, 1994).Thus, novice researchers are often confused by the diverse nature of qualitative research, thereby of relying totally on the quantitative research

trustworthiness criteria, which have dominated the research field for almost a century. As a result, novice researchers, in particular master's education students at the University of Dar es Salaam and Open University of Tanzania, have been inaccurately using quantitative criteria to ensure the trustworthiness of their qualitative research. Although qualitative inquiry is becoming more popular, the criteria for assessing qualitative research and naturalistic inquiry are sometimes not taught or given little emphasis during course work. The trend shows that most research methodology instructors are from an educational psychology background and so they tend to cover the quantitative research methodology more, which has acumulative impact on graduates' future research career(Gelo, Braakmann, & Benetka, 2008; Ponterotto, 2005). This has resulted in most students opting to use the quantitative approach in their thesis/dissertation,although they might not be interested in doing quantitative researchbut leaning more to using the quantitative approach as a major one because of the influence of the course lecturer.As result of the dominance of quantitative research the qualitative research methodology has suffered and students lack a critical understanding of the qualitative research methodology. Therefore, this paper seeks to address the current gap in practice experienced by graduate research students in developing countries, who erroneously use quantitative trustworthiness criteria to ensure the credibility of qualitative findings.

Table 1: Distinctive features of qualitative and quantitative inquiry

Assumptions	Quantitative (positivist)	Qualitative (naturalistic)
The nature of reality	There is one reality and the inquiry process can be converged; reality can be manipulated and separated into common parts such as variable.	There is no one reality, as reality consists of interrelated parts that do not necessarily influence other parts of the inquiry. In other words reality is divergent.
The nature of the inquirer-object relationship.	There is an independent relationship between the inquirer and objects	There researcher and the participants depend on each other or there is a relationship between the inquirer and participants and they influence each other.
The nature of truth statements.	They believe that there is absolute truth in the inquiry and an inquiry that is not generalizable is unworthy. Thus the aims of quantitative inquiry are to develop nomothetic knowledge.	There is no absolute truth and qualitative inquiries are not generalizable. They assume that the purpose of inquiry is to develop idiographic knowledge.

Source: Guba (1981) and Krefting (1991)

METHODOLOGY

The researcher did a library-based empirical investigation into the masters of education dissertations submitted at the Faculty/School of Education of the University of Dar es Salaam and the Faculty of Education of Open University of Tanzania during from2007-2012. The researcher randomly selected 245 dissertations from the University of Dare Salaam and 78 dissertations from the Open University of Tanzania and purposively checked the dissertations' research methodology chapter and those that the used the qualitative research methodology were selected for this present study. The dissertations that used the quantitative research methodology were returned to the library because the researcher wanted to find out if students had used the correct trustworthiness criteria of qualitative research methodology. The researcher then skimmed sections that addressed the trustworthiness criteria used by the student for ensuring the trustworthiness of the data and the dissertations that used quantitative criteria to ensure rigour of qualitative findings were selected and extracts were taken and used as data.

RESULTS AND DISCUSSION

The results from the selected dissertations of students from the School of Education of the University of Dar es Salaam–showed that most of them who opted to use the qualitative inquiry approach used quantitative trustworthiness criteria to ensure the integrity of their research findings. The findings indicated that of 245dissertations that employed the qualitative methodology, 238 used the quantitative trustworthiness criteria of validity and reliability to ensure the credibility of the research instruments and the authenticity their findings, while only 7 dissertations used the qualitative criteria. Likewise, dissertations from the Open University of Tanzania revealed similar results as 64 dissertations used the quantitative criteria to ensure the authenticity of the instruments and findings, while only 14dissertations used the correct qualitative criteria of dependability, confirmability, credibility and transferability. The extracts from students' dissertations are presented in Tables 2 and 3 from Faculty/School of the University of Dar es Salaam and Open University of Tanzania. The researcher did not present all the extracts from the dissertations because the data had reached saturation point since all the students had used similar strategies in their dissertations. The findings indicated that the rigorous strategies used by

education research students to ensure credibility of qualitative findings at the School of Education of the University of Dar es Salaam and Faculty of Education of the Open University of Tanzania are alike. This implies the problem of inbreeding because the Open University of Tanzania sometimes employs University of Dar es Salaam School of Education lecturers as part-timers

Table 2: Extract of methodology and instruments validation criteria (School of Education University of Dar Es salaam)

Author[1]	Research design /Approach	Instruments validation
Vuta	… in this study a qualitative research approach was adopted … (Vuta, 2011, p. 43)	… the validity of instruments was done in various ways, the researcher presented the questionnaires and interviews to the supervisors for comment (Vuta, 2011, p. 54).
Kitu	The study was guided mainly by qualitative research…. (Kitu, 2011, p. 32)	… the researcher developed draft of research instruments and asked postgraduate students to review (Kitu, 2011, p. 37)
Dell	This study employed qualitative research paradigm … (Dell, 2011, p. 32)	Interview questions were piloted with a small sample of the Open University of Tanzania students and fellow masters' students (Dell, 2011, p. 35).
Leno	The study employed qualitative approach… (Leno, 2010, p. 31)	Prior to the fieldwork…. data collection instruments were reviewed, discussed and refined by the researcher's supervisor (Leno , 2010, p. 47)
Kaki	The study adopted case study … qualitative research was suitable approach… (Kaki, 2009, p. 25)	… the instruments were jointly validated by fellow postgraduate students…(Kaki, 2009, p. 39)
Keki	…specifically the studyadopted ethnographic qualitative approach (Keki, 2008, p. 38)	… to improve efficiency of collecting relevant data…classmates, and the supervisor proofread and commented on the questionnaires to be used in this study (Keki, 2008, p. 43)
Edu	The study employed mainly qualitative research approach to investigate the manner in which public teachers colleges cope with limited physical facilities…(Edu, 2012, p. 26)	To ensure that the data collected were valid, the researcher prepared appropriate research instruments such as interviews, observation, and focus group discussion…. The research asked advice and comments from the supervisor of the study, language specialist and fellow students to ensure the accuracy of the research instruments …the researcher decided to use Swahili language (Edu, 2012, p. 35).
Halu	This study adopted qualitative research approach. The qualitative approach enabled the researcher to collect and analyse the respondents' views…	To ensure validity and reliability of the study, the instruments were reviewed by supervisor, other lecturers, and fellow members (Halu, 2012, p. 51).
Lazo	This study employed the case study design. The study employed mainly the qualitative research approach in examining stakeholders'conception of … (Lazo, 2012, pp. 29-30)	To ensure validity, the researcher prepared research instruments that were used to collect data and such instruments were read and checked by supervisor as well as her fellow post-graduate students (Lazo, 2012, p. 41).

Source: Graduate students dissertation

1 The names used are pseudonym to cover the identity of the real name of the dissertation author where the extract was taken for ethical reasons

Table 3: Extract of methodology and instruments validation criteria (Open University of Tanzania)

Kami	This study used qualitative exploratory research design … (Kami, 2010, p. 48)	The validation of instruments was done in the following ways: first all tools namely questionnaires, interview, focus group discussion guide were shown to some scholars, who teach at MUCE, Iringa University College, Tumaini University ... Supervisor was consulted and the trial test of the instruments was piloted at micro level of few purposively selected sample… Kami, 2010, p. 56).
Ingi	This study was a qualitative design (Ingi, 2010, p. 32).	The data collection instruments were validated in order to obtain relatively reliable responses, the validation of the data collection instruments was intended to make them clear and unambiguous. During the pilot study the questions and interview guide were administered to five teachers of Songeagirl's secondary schools (Ingi, 2010, p. 41).
Samu	The nature of the study, area and kind of instrumentation needed to answer research questions necessitated the use of qualitative descriptive approach … the analysis itself is a qualitative (Sam, 2010, p. 78)	The validation was done through use of two methods. In the first method, items were presented at a secondary school in Dar es Salaam. The validation of instruments was also done through the use of different data collection techniques (Sam, 2010, p. 91)
Hindu	This present study employed correlation qualitative design with some quantitative elements… (Hindu, 2010, p. 23)	As regards this present study, prior to fieldwork, the researcher and her colleagues studying masters in linguistics reviewed initial drafts of instruments. Finally the researcher contacted her supervisor for further refinement of instruments (Hindu, 2010, p. 27)
Yap	This study is a case study following a qualitative approach (Yap, 2010, p. 37).	In order to ensure validity and reliability of the instruments … a pilot study was conducted in 5 community secondary schools in Ilala municipality. The supervisor assisted to refine the instruments focusing on the study research tasks and questions (Yap, 2010, p. 51)

Source: Open University dissertations

This challenge of using incorrect criteria to ensure rigour of the inquiry was also observed by Anfara, Brown, and Mangione (2002). They reported that early qualitative research proposals addressed the validity criteria by focusing "on four issues — internal validity, external validity, reliability and objectivity - that are traditionally addressed in quantitative studies" (Anfara et al., 2002, p. 29).

It is more than three decades since Guba (1981) and Guba and Lincoln (1982) publications on trustworthiness criteria for qualitative research, but the problem of using incorrect criteria for evaluating qualitative inquiry still persists. This paper asks why this is so after 30 years? This paper suggests three major reasons. First, scholars and students in universities of developing countries lack access to current academic journals and books relating to qualitative research methods. This is contributed to by the fact that people dealing with the acquisition of research books belong to the traditional quantitative research orientation, which was the dominant approach for more than a century.

Secondly, many research professors/lecturers in developing countries were trained between the early 1970s and late 1990s, during when there was a strong debate between quantitative scholars and the emerging qualitative scholars on the criteria for assessing the integrity of qualitative research findings. The arguments of the traditional quantitative scholars prevailed over those of the qualitative scholars, as their approach was in its infancy at the time of the debate. In addition, the qualitative approach was not given much encouragement by the universities of developing countries. Thirdly, graduate students, either because of the shortage of resources or lack of a reading culture, rarely studied original sources. Practice indicates that students used previous theses/dissertations as their primary material when writing up their proposals and dissertations and these previous dissertations were generally affiliated to quantitative research practice that dominated the field for quite a long time.

This paper does not intend to continue this debate between qualitative and quantitative research approaches but looks at how to apply the qualitative research trustworthiness criteria already established in the literature (Cutcliffe & McKenna, 1999; Graneheim & Lundman, 2004; Guba, 1981; Guba & Lincoln, 1982; Rolfe, 2006; Wallendorf & Belk, 1989)for assessing the findings of qualitative inquiry. The intention is to improve the current practice and help graduate students to understand and apply the correct evaluation criteria for legitimating their research project. Therefore, what are the relevant qualitative criteria? The next sections of this paper present the origins of qualitative trustworthiness criteria and briefly discuss some of those used to ensure the trustworthiness of qualitative enquiry

Roots of Qualitative Research Trustworthiness Criteria

In his first publication Guba (1981) raised four trustworthiness concerns that any researcher needs to address irrespective of his/her research paradigm. These questions are:

i. How can a researcher establish confidence in his/her findings? Or how do we know if the findings presented are genuine? (Truth value concern)
ii. How do we know or determine the applicability of the findings of the inquiry in other settings or with other respondents? (Applicability concern)

iii. How can one know if the findings would be repeated consistently with the similar (same) participants in the same context? (Consistency concern)
iv. How do we know if the findings come solely from participants and the investigation was not influenced by the bias, motivations or interests of the researchers? (Neutrality concern).

Wallendorf and Belk (1989), building on Guba's ideas, added a fifth concern that was not addressed in Guba's original paper by expanding the fourth question. According to Wallendorf and Belk (1989) the researcher needs to ask:

v. How do we know if the findings are not false information from given by the study participants? (Integrity concern)

The questions raised by Guba (1981) and Wallendorf and Belk (1989) are pertinent to a researcher in his or her investigation. As Lincoln and Guba (1985)and Schwandt et al. (2007) and Wallendorf and Belk (1989) argued, each research approach develops its own criteria of answering the five questions raised. For example, Lincoln and Guba (1985)claimed that positivist researchers have developed a set of criteria for the four questions they proposed and the answers fit the ontological and epistemological assumptions of the positivist perspective. The positivist criteria include *internal validity, external validity, reliability* and *objectivity,* but these are not relevant for assessing the rigour of naturalistic inquiry because it makes different ontological and epistemological assumptions (Lincoln & Guba, 1985; Wallendorf & Belk, 1989). For example, according to Lincoln and Guba (1985), positivist inquiry (quantitative)assumes a single reality and inquiry findings are based on a single reality, while naturalists consider multiple realities as an alternative explanation for social reality. In addition, positivist assumes the knower and known are independent (Wallendorf & Belk, 1989), and objectivity is ensured by the methodology of the inquiry while naturalistic inquiry assumes that the knower and known are not completely independent. These clear ontological and epistemological differences suggest that assessing the rigour of qualitative inquiry requires different criteria for answering the four questions proposed byGuba (1981) and question proposed by Wallendorf and Belk (1989). As a result, Guba and Lincoln (1982) proposed that "internal validity should be replaced by that of credibility, external validity by transferability, reliability by dependability and objectivity by confirmability"(pp. 3-4).This paper therefore briefly discusses each of the suggested qualitative research trustworthiness criteria and how to apply them during research.

Credibility

Credibility is defined as the confidence that can be placed in the truth of the research findings(Holloway & Wheeler, 2002; Macnee & McCabe, 2008). Credibility establishes whether or not the research findings represent plausible information drawn from the participants' original data and is a correct interpretation of the participants' original views (Graneheim & Lundman, 2004; Lincoln & Guba, 1985). A qualitative researcher establishes rigour of the inquiry by adopting the following credibility strategies: prolonged and varied field experience, time sampling, reflexivity (field journal), triangulation, member checking, peer examination, interview technique, establishing authority of researcher and structural coherence. Each strategy is discusses in detail in the sub-sections below.

Prolonged Engagement in Field or Research Site: Qualitative research data collection requires the researcher's self- to immerse him or herself in the participants' world (Bitsch, 2005).This helps the researcher to gain an insight into the context of the study, which minimizes the distortions of information that might arise due to the presence of the researcher in the field. The researcher's extended time in the field improves the trust of the respondents and provides a greater understanding of participants' culture and context(Onwuegbuzie & Leech, 2007). For example, a doctoral student doing an intervention study concerning teachers' professional development would mean that the investigation would involve assessing the needs of teachers, followed by professional development training and evaluation. This means that the researcher would be required to stay in the field for almost 8 months and evaluation should be done 6-8 months after the intervention. The purpose of giving this gestation time is to see if there is any change as a result of the engagement in professional development.Krefting (1991) observed that "extended time period is important because as rapport increases, informants may volunteer different and often more sensitive information than they did at the beginning of the research project" (pp. 217-218). Thus, prolonged engagement in the fieldwork helps the researcher to understand the core issues that might affect the quality of the data because it helps to develop trust with study participants.

Use of peer debriefing: According to Guba (1981), peer debriefing "provides inquirers with the opportunity to test their growing insights and to expose themselves to searching questions"(Guba, 1981, p. 85).A qualitative researcher during the research process is required to seek support from other professionals willing to provide scholarly guidance, such a members of academic staff, the postgraduate dissertation committee and the department. Feedback from peers also helps the researcher to improve the quality of the inquiry

findings. This means that a qualitative researcher when writing his/her report should present his/her study findings to peersto receive their comments. In other words, a researcher should obtain the perceptions of peers in developing the conclusion of the study (Bitsch, 2005).Such an investigator looks at background information, data collection methods and process, data management, transcripts, data analysis procedure and research findings (Pitney & Parker, 2009).

Triangulation: Triangulation "involves the use of multiple and different methods, investigators, sources and theories to obtain corroborating evidence" (Onwuegbuzie & Leech, 2007, p. 239).Triangulation helps the investigator to reduce bias and it cross-examines the integrity of participants' responses. There are three major triangulation techniques. The: first is investigator triangulation that uses multiple researchers to investigate the same problem, which brings different perceptions of the inquiry and helps to strengthen the integrity of the findings. The second is data triangulation/informants triangulation that uses different sources of data or research instruments, such as interviews, focus group discussion or participant observation, or that utilizes different informants to enhance the quality of the data from different source. The third is methodological triangulation that uses different research methods (Denzin & Lincoln, 2005; Lincoln & Guba, 1985; Patton, 2002; Phillimore & Goodson, 2004). For example, in the recent study by Anney, Hume, and Coll (2012) that interviewed different informants (headmasters, licensed teachers and district education officials) on the effectiveness of licensed science teachers, the district education officials claimed that licensed science teachers were supported by the district through continuous professional development, but the findings from headmasters and licensed teachers indicated that there was only professional development support for unqualified licensed science teachers. Therefore, it is recommended that qualitative research should include one or two triangulation techniques.

Member Checks: Another strategy for improving the quality of qualitative data is allowing member checks. Member checks mean that the "data and interpretations are continuously tested as they are derived from members of various audiences and groups from which data are solicited" (Guba, 1981, p. 85). Member checks is a crucial process that any qualitative researcher should undergo because it is the heart of credibility (Lincoln & Guba, 1985; Onwuegbuzie & Leech, 2007). Researcher(s) are required to include the voices of respondents in the analysis and interpretation of the data. The purpose of doing member checks is to eliminate researcher bias when analyzing and interpreting the results. This means that the analyzed and interpreted data is sent back to the participants for them to evaluate the interpretation made by the inquirer and to suggest changes if they are unhappy with it or because they had been misreported. Informants may reject an interpretation made by the researcher, either because it was socially undesirable or because of the way in which it was presented by the researcher(Schwandt et al., 2007). The member checks strategy involves establishing structural corroboration or coherence, i.e. testing all the data to ensure that there is no internal conflict or inconsistencies, and establishing referential adequacy, i.e testing the analysis and interpretation against the documents that were used during data collection before producing the final document (Guba, 1981).

v. Negative Case Analysis: Negative case analysis is when data emerging from the inquiry contradicts the researcher's expectations (Bitsch, 2005). If this happens during the investigation, the researcher is required to conduct negative case analysis of the cases emerging from the study. Reporting negative cases improves the credibility of the study because the researcher accounts for the contradiction that emerged from the data, which could provide a plausible alternative explanation. In other words, negative case analysis helps to reformulate the research questions and improve the rigour of the study. According to Wallendorf and Belk (1989), negative case analysis helps to control the temper and natural enthusiasm of the researcher.

vi. Persistent Observation: Persistent observation "poses the question as to whether the researcher or the research team have done an in-depth study to gain detail" (Bitsch, 2005, p. 83). Persistent observation helps discover participants' qualities and unusual characteristics. Extended interaction with the context and participants is of advantage to the inquirer, because it helps him/her gain an understanding of the essential characteristics of the setting (Guba, 1981). Miles and Huberman (1994) reported that data collected on entry to the field is weaker than that collected near the end of the study. This suggests that persistent observation gives an understanding of participants' world view and effects of the researcher's presence during fieldwork are minimized.

Transferability

Transferability refers to the degree to which the results of qualitative research can be transferred to other contexts with other respondents – it is the interpretive equivalent of generalizability (Bitsch, 2005; Tobin & Begley, 2004). According to Bitsch (2005), the "researcher facilitates the transferability judgment by a potential user through 'thick description' and purposeful sampling" (p. 85). This

means that when the researcher provides a detailed description of the enquiry and participants were selected purposively, it facilitates transferability of the inquiry.

Provide thick description: According to Li (2004), thick description "enables judgments about how well the research context fits other contexts, thick descriptive data, i.e. a rich and extensive set of details concerning methodology and context, should be included in the research report" (p. 305). Thick description involves the researcher elucidating all the research processes, from data collection, context of the study to production of the final report. Thick description helps others researchers to replicate the study with similar conditions in other settings.Shenton (2004) argued that "without this insight [thick description], it is difficult for the reader of the final account to determine the extent to which the overall findings "ring true"(p. 69). Therefore, to ensure transferability of qualitative inquiry the researcher must "collect thick" descriptive data which allows" comparison of this context to other possible contexts to which transfer might be contemplated" and produce a thick description of the context in order to make a judgment about it fitting in with other possible contexts(Guba, 1981, p. 86). It is the qualitative inquirer's role to provide thick descriptions of the study to ensure its transferability.

ii. Do Theoretical/Purposive Sampling: Purposive sampling is the technique mainly used in naturalistic inquiry studies, and is defined "as selecting units (e.g., individuals, groups of individuals, or institutions) based on specific purposes associated with answering a research study's questions" (Teddlie & Yu, 2007, p. 77). It helps the researcher focus on key informants, who are particularly knowledgeable of the issues under investigation(Schutt, 2006), because purposive sampling allows decisions to be made about the selection of participants (Ary, Jacobs, Razavieh, & Sorensen, 2010; Bernard, 2000). In addition, it allows the researcher to decide why she or he wants to use a specific category of informants in the study (Bernard, 2000), and it provides greater in-depth findings than other probability samplings methods(Cohen, Manion, & Morrison, 2011).

Dependability

According to Bitsch (2005), dependability refers to "the stability of findings over time" (p. 86). Dependability involves participants evaluating the findings and the interpretation and recommendations of the study to make sure that they are all supported by the data received from the informants of the study (Cohen et al., 2011; Tobin & Begley, 2004). Dependability is established using an audit trail, a code-recode strategy, stepwise replication, triangulation[2] and peer examination or iterator comparisons (Ary et al., 2010; Chilisa & Preece, 2005; Krefting, 1991; Schwandt et al., 2007).

i. An Audit Trail: An audit trail involves an examination of the inquiry process and product to validate the data, whereby a researcher accounts for all the research decisions and activities to show how the data were collected, recorded and analyzed (Bowen, 2009; Li, 2004).In order for an auditor to conduct a thorough audit trial the following documents should be kept for cross-checking the inquiry process: raw data, interview and observation notes, documents and records collected from the field, test scores and others (Guba & Lincoln, 1982). The audit trail also establishes confirmability of the study (Guba & Lincoln, 1982; Tobin & Begley, 2004). According to Wallendorf and Belk (1989),judging the dependability of an inquiry requiresa thorough observation of the informants for an extended period in order to learn of any changes and give explanations for the changes,(Wallendorf & Belk, 1989) and findings need to be audited for sincerity.

ii. Stepwise Replication: Stepwise replication is a qualitative research data evaluation procedure where two or more researchers analyze the same data separately and compare the results (Chilisa & Preece, 2005). Any inconsistences that arisefrom these separateanalyses need to be addressedto improve the dependability of the inquiry, and if the results of analyses are similar, then dependability of the inquiry is achieved(Ary et al., 2010).

iii. Code-Recode Strategy: The code-recode strategyinvolves the researcher codingthe same data twice, giving one or two weeks' gestation period between each coding. The results from the two codingsare compared to see if the results are the same or different(Chilisa & Preece, 2005).The code-recode strategy is also referred to as *code agreement,*whereby the research process allows multiple observations by the researcher, suggesting that the inter-rater or inter-obsever code the data and compare the coding done by the inter-rater(Ary et al., 2010). If the coding results are in agreement it enhances the dependability of the qualitative inquiry.This helps the researcher gain a deep understandingof datapatterns and improves the presentation of participants' narrations.

2discussed in credibility section

iv. Peer Examination: Peer examination in principle is no different from the member checks strategy employed to enhance the credibility of the inquiry(Bitsch, 2005; Krefting, 1991). During peer examination the researcher discusses his/her research process and findings with neutral colleagues, such as doctoral students, who are either doing qualitative research or have experience of qualitative research. According to Bitsch (2005) and Krefting (1991), peer examination helps the researcher to be honest about his/her study and peers contribute to his or her deeper reflexive analysis. In addition, colleagues help to identify the categories not covered by the research questions or help to identify negative cases.

Confirmability

Confirmability refers to the degree to which the results of an inquiry could be confirmed or corroborated by other researchers (Baxter & Eyles, 1997). Confirmability is "concerned with establishing that data and interpretations of the findings are not figments of the inquirer's imagination, but are clearly derived from the data" (Tobin & Begley, 2004, p. 392). Studies suggest that confirmability of qualitative inquiry is achieved through an audit trial, reflexive journal and triangulation(Bowen, 2009; Koch, 2006; Lincoln & Guba, 1985).According to Bowen (2009) an "audit trail offers visible evidence—from process and product—that the researcher did not simply find what he or she set out to find" (p. 307).

i. Reflexive Journal or Practice: Confirmability also can be established using a reflexive journal (Koch, 2006; Wallendorf & Belk, 1989). Wallendorf and Belk (1989)described a reflexive journal as "reflexive documents kept by the researcher in order to reflect on, tentatively interpret, and plan data collection" (para. 77).The researcher is required to keep a reflexive journal,which should include all events that happened in the field, personal reflections in relation to the study, such as the 'ah' phenomenon that arisesduring the investigation. In other words, according to Krefting (1991), reflexivity is "an assessment of the influence of the investigator's own background, perceptions and interests on the qualitative research process" (p. 218) that includes the researcher's personal history.

Assessing Integrity of Research Findings

The concept of integrity of the research findings was first raised by Wallendorf and Belk (1989). They argued that the challenge facing qualitative researchers is how to ensure that the data provided by the informants were not fabricated by them. Since qualitative research investigates informants' world view, they might not be happy supplying information to the researcher or they might take a dislike to the researcher, and so might decide to provide false information. For qualitative researchers, the best strategy for dealing with misinformation, evasion and lies is to be skeptical about information what they feel might not be correct. Other strategies include prolonged engagement and building rapport and trust, triangulation (across sources, methods and researchers), good interview technique, safeguarding informants' identity, researcher's self-analysis and navel-gazing(Wallendorf & Belk, 1989).

CONCLUSION

As the findings of this paper have indicated, graduate students still use quantitative criteria to assess the rigour of qualitative inquiry. Shenton (2004) tasked qualitative research methodology instructors to ensure that researchers "contemplating undertaking qualitative research are not only aware of the criticisms typically made by its detractors but they are also cognizant of the provisions which can be made to address matters such as credibility, transferability, dependability and confirmability" (p.73). These findings are in line with the work of Shenton (2004) and Tobin and Begley (2004), who reported that the debate has not yet finished as opponents of the qualitative approach continue to disbelieve the trustworthiness of the criteria for assessing the authenticity of the findings of qualitative inquiry. This suggests that proponents of qualitative research should be more active in strengthening the trustworthiness of the criteria for assessing qualitative research and reducing the impact of critics espousing the quantitative approach.

Tobin and Begley (2004) asserted that "we advocate a move from narrow methods of assuring rigour gleaned mainly from the positivist tradition to a more pluralistic approach as a means of legitimizing naturalistic inquiry" (p. 394). Despite the slow takeoff in use of qualitative trustworthiness criteria, there is strong evidence that the findings that adopted the criteria discussed in this paper are conceivable.

This paper recommends that qualitative researchers adopt the trustworthiness criteria and strategies discussed in this paper as this will improve the believability of qualitative inquiry. More importantly, the findings have implication for qualitative research students and qualitative methodology lecturers, particularly in terms of addressing the criticism, of quantitative researchers and improving the teaching of qualitative research methodology.

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