

Ensuring the quality of the findings of qualitative research: Looking at trustworthiness criteria

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Abstract

This empirical library research paper examined Masters Student's dissertations that employed qualitative research methodology and immersed into understanding of trustworthiness criteria used to ensure the quality of the findings of those dissertations. The findings have indicated that most of the students' in their dissertation reports employed the quantitative trustworthiness criteria such as reliability and validity to assess the rigor of qualitative inquiry. In the sampled Masters of education dissertation no dissertation that employed qualitative trustworthiness criteria such as credibility, transferability, confirmability and dependability. This finding has practical implication for postgraduate training at the school of Education of the University Dar es Salaam, in particular, to improving the teaching of qualitative research methodology.

Key words: trustworthiness, qualitative, quantitative, credibility, dependability, confirmability, dependability

Introduction

Any inquiry irrespective of its approach are usually evaluated by peers, readers and sponsors or grant providers (Krefting, 1991). The evaluators of research endeavor usually adopt some trustworthiness criteria that are agreed in the literature in relation to existing research approaches such as qualitative, quantitative and mixed methods research. Trustworthiness is defined as a methodological (research design, data gathering, data analysis) accuracy (soundness) and adequacy of the research inquiry (Holloway & Wheeler, 2002) Each research approach employs different evaluation criteria to ensure the rigor of the inquiry. For example, quantitative researchers put into consideration the *reliability, objectivity and validity (i.e. internalⁱ and externalⁱⁱ)* as means of

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ensuring the trustworthiness of the inquiry. In contrast qualitative researchers' consider *dependability, credibility, transferability and confirmability* as trustworthiness criteria for qualitative investigation (Guba, 1981; Schwandt, Lincoln, & Guba, 2007). The criteria for assessing quantitative research are well established in the quantitative research literature and have been in use for more than a century. This strong establishment of quantitative evaluation criteria has resulted to its erroneous use in assessing rigor of qualitative inquiry although both qualitative and quantitative inquiries have different philosophical and methodological assumptions. These major distinctive features of qualitative and quantitative inquiry are summarized in Table 1.

Table 1. Distinctive features of qualitative and quantitative inquiry

Assumptions	Quantitative (positivist)	Qualitative (naturalistic)
The nature of reality	There is single reality and the inquiry process can be converged; reality is separable and manipulatable into common parts such as variable.	There is no single reality, reality consists of interrelated parts and do not necessarily influence other parts of the inquiry. In other words reality is divergent.
The nature of the inquirer-object relationship.	There is independent relationship between the inquirer and objects	There researcher and the participants depends each other or there is interrelation between the inquirer and participants and are influencing each other.
The nature of "truth statements.	They believe that there is absolute truth in the inquiry and 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 Krefling (1991)

Why the qualitative research trustworthiness criteria?

The purpose of this paper is to present some glimpses that could be used by research students to put into practice the qualitative research trustworthiness criteria in their research projects. Qualitative research trustworthiness criteria are of interest in this paper because there is a lot of debate and also critics from quantitative researchers on integrity of qualitative findings (Hedrick, 1994; Ortlipp, 2008; Sale, Lohfeld, & Brazil, 2002; Smith & Heshusius, 1986). In addition, qualitative research approach is diverse, consists of 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). Combined with diverse nature of qualitative research which is also confusing researchers' and given the impact caused by over-establishment of quantitative research approach the paradigm shift from quantitative to qualitative is also a barrier for advancement of qualitative research methodology. This challenge is getting strengths because teaching of the criteria for assessing for assessing qualitative inquiry has been given little attention in some universities, in particular, in the developing countries

Likewise, the wisdom of practice suggests that research course instructors are usually biased toward the extremes of their research specializations of either qualitative or quantitative approach depending on his/her area of specialization. The trend shows that if the course instructor is from the educational psychology background they tend to cover more quantitative research methodology and this has accumulative impact on graduate future research career (Gelo, Braakmann, & Benetka, 2008; Ponterotto, 2005). The example of cumulative impact is that most students in their graduate thesis/dissertation usually opt for quantitative approach although they might not be interested doing quantitative research or choosing mixed methods research but leaning more to quantitative approach as a major approach. As Gelo et al. (2008) asserted that:

Psychology has been a highly quantitative field since its conception as a science Psychological research has relied heavily on experimental and correlational techniques to test theory using quantitative data. This is because psychology, like other behavioural disciplines, has been dominated by a positivist.... (p. 266)

Surprisingly, those few graduate students who opted for qualitative inquiry approach some had used quantitative trustworthiness criteria instead of qualitative criteria in ensuring the integrity of the findings of their studies. To elucidate this argument the author of this paper randomly selected 245 Masters of education dissertations submitted to the Faculty/School of Education of the University of Dar es Salaam between 2007 and 2011 and examined for their respective trustworthiness criteria used. The findings indicated that 245 dissertations that employed qualitative methodology adopted quantitative trustworthiness criteria of

validity and reliability to ensure the validity of the research instruments and to address the authenticity their findings. The quantitative criteria cited in some of these dissertations include validity and reliability with no reference to *objectivity* or unpacking of validity into internal validity or external validity. In fact, the issues which were raised during the validation of instruments in the dissertation examined was generally aimed to ensure there is no ambiguity that might arise because of research instruments instead of looking deeply to the candid process of the inquiry. For the purpose of elucidating this claims researcher extracted few samples from the students' dissertations and are presented in the Table 2.

The few extract referred suggests that, these researchers validated their instruments in order to minimize ambiguity of their research instruments but the pertinent issue remain unanswered because none have been reported on strategies that were used to ensure the findings of the qualitative inquiry are not biased by personal prejudices. Also, the extracts suggests that these researchers adopted quantitative trustworthiness criteria such as validity and reliability to legitimate the findings of their studies which in principle is inapplicable for assessing the qualitative inquiry.

Table 2. Extract of methodology and instruments validation criteria

Author	Research design	Instruments validation
Vuta ²	“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 comments” (Vuta, 2011, p. 54)
Kitu ³	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 ⁴	“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” (p. 35)
Leno ⁵	“the study employed qualitative approach...” (Leno, 2010, p. 31)	“Prior to the field work data collection instruments were reviewed, discussed and refined by the researcher’s supervisor” (Leno , 2010, p. 47)
kaki ⁶	“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 ⁷	“... specifically the study ethnographic approach” (keki, 2008, p. 38)	... to improve efficient of collecting relevant data ... classmates, and the supervisor proofread and commented on the questionnaires to be used in this study” (Keki, 2008, p. 43)

Source: Graduate students dissertation

² Vuta is pseudonym to cover the identity of the dissertation cited for ethical reasons

³ Kitu is a pseudonym to cover the identity of the dissertation cited for ethical reasons

⁴Dell is a pseudonym to cover the identity of the dissertation cited for ethical reasons

⁵ Leno is a pseudonym to cover the identity of the dissertation cited for ethical reasons

⁶ Kaki is a pseudonym to cover the identity of the dissertation cited for ethical reasons

⁷ Keki is a pseudonym to cover the identity of the dissertation cited for ethical reasons

The similar trend was also observed by Anfara, Brown, and Mangione (2002) and 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” (p. 29).

It is almost three decades since Guba (1981) and Guba and Lincoln (1982) publication of qualitative research trustworthiness criteria but problem of using incorrect criteria in evaluating qualitative inquiry still unresolved. Therefore, why this controversy for almost 30 years? This paper speculates three major reasons for this controversy as elaborated below:

First, scholars and students in most universities of the developing countries do lack access to current academic journals and books related to qualitative research, therefore, lack access to relevant qualitative materials. This stand is contributed by the fact that people who are dealing and proposing research books acquisition belong to the traditional quantitative research orientation which was the dominant approach for more than a century.

Secondly, many research professors/instructors in developing countries were trained during the early 1970s and late 1990s, at this time there was a strong debate between the quantitative scholars’ critics and the emerging qualitative scholars on criteria of assessing integrity of qualitative research. Therefore, traditional quantitative endeavor overweighed the perspective of qualitative scholars since the later was in juvenile stage at this time of debate and new qualitative approach received little advocacy in the universities of developing countries.

Thirdly, graduate students either because of shortage of resources or lack of reading culture they rarely read original sources. The wisdom of practice indicates that they have been using previous thesis/dissertations as their primary framework during their proposals and thesis writings. The paper is not intending to continue with this debate but it looks on how to apply the already established qualitative research trustworthiness criteria in the literature (Cutcliffe & McKenna, 1999; Graneheim & Lundman, 2004; Guba, 1981; Guba & Lincoln, 1982; Rolfe, 2006; Wallendorf & Belk, 1989) for assessing findings of qualitative inquiry. The

intention is to add to the current practice and help the graduate students to understand and apply the correct evaluation criteria in legitimating their research works

Qualitative research trustworthiness criteria

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

1. How can a researcher establish confidence of his/her findings or how do we know if the findings presented are genuine? (Truth value concern)
2. How do we know or determine the applicability of the findings of the inquiry in other settings or with other respondents? (Applicability concern)
3. How can one know if the findings would be repeated consistently with the similar (same) participants in the same context? (Consistency concern)
4. How do we know if the findings are solely from participants and the investigation was not influenced by biases, motivations or interests of the researchers? (Neutrality concerns).

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

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

Any sincere inquiry need to address these basic concerns ~~ed~~ raised in the literature. As Lincoln and Guba (1985) and Schwandt et al. (2007) and Wallendorf and Belk (1989) argued that each research approach and philosophy of science develops its own criteria of answering the five questions raised above. Lincoln and Guba (1985) claimed that positivist researchers have developed the set of criteria answering the four questions they proposed and the answers fit the ontological and epistemological assumptions of positivist perspective. The positivist criteria include *internal validity*, *external validity*, *reliability*, and *objectivity*. These positivist criteria are not relevant for assessing rigor of naturalistic inquiry because naturalistic inquiry has different ontological and

epistemological assumptions (Lincoln & Guba, 1985; Wallendorf & Belk, 1989). For example, according to Lincoln and Guba (1985) positivist inquiry trustworthiness criteria differ in the following ways with naturalistic/post-positivist;

- Internal validity- which assumes of a single reality and inquiry findings are based on the single reality, while naturalists do consider multiple reality and alternative explanation for the social reality.
- External validity- assumes that research “be conducted in ways that make chronological and situational variations irrelevant to the findings” (Guba, 1981, p. 80), and generalization is permanent or not affected by time, while post-positivists assumes that generalization is unbearable because phenomena changes with time and context.
- Reliability- it assumes that research instruments must produce unchanging if those results were to be considered significant; and any convergence in results is considered instrumental error because the strand is single reality. In contrast, positivist assumes that deviation in results is not because of error of instruments but because of existence of multiple realities and using human as an instrument there is evolving intuitions and feeling that affects the results.
- Objectivity assumes the knower and known are independent (Wallendorf & Belk, 1989), and objectivity ensured methodology of the inquiry. In contrast naturalist assumes that knower and known are not solely independent.

These clear ontological and epistemological differences suggest that assessing rigor of qualitative inquiry require different criteria to answer the five questions proposed by (Guba & Lincoln, 1982; Wallendorf & 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” (p. 3-4) as shown in Table 3. The next section of this paper discusses each of the suggested qualitative research trustworthiness criteria and how to apply these criteria during the research processes.

Table 3. Positivist and naturalistic terms appropriate to the aspects of trustworthiness

Aspects	Quantitative term/positivist paradigm	Qualitative term/naturalistic
Truth Value	Internal validity	Credibility
Applicability	External validity or generalizability	Transferability
Consistency	Reliability	Dependability
Neutrality	Objectivity	Confirmability
-	-	Integrity

Source: Guba (1981, p. 80) and Wallendorf and Belk (1989)

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). In qualitative inquiry researcher establishes rigor of the inquiry by adopting the following strategies:

i. Prolonged engagement in field or research site

Qualitative research data collection requires researcher's self-immersion into the participants world view (Bitsch, 2005). The immersion of inquirer into the participants' world helps the researcher to understand context of the study and minimize the distortions of information that might arise due to the presence of the researcher in school or site. Researcher extended time in the field improve trust with respondents and also extends understanding of participants' local construction and culture context (Onwuegbuzie & Leech, 2007). For example, assume you are a doctoral student doing intervention study that involved teachers into professional development, it means that the investigation will involve needs assessment, followed by professional development training and then evaluation.

This process means that the researcher is required to stay in the field for almost 8 months and evaluation should be done after 6-8 months of the intervention. The purpose of giving this gestation time is intently to see if there is phenomenon change as a result of engagement into the professional development. There is

some unseen contextual factor that affects data collection processes, for example, in one of the doctoral study that investigated Tanzanian licensed science teachers (Anney & Hume, in-press) classroom teaching effectiveness in teaching learner-centred education, the participants in the first phase of the study were uninterested for their teaching to be observed. The researcher was not aware of the reasons for teachers' resistance. However, after staying in school for a week, the researcher established that the ministry of education had issued a circular one month before researcher's arrival that licensed teachers who did not registered to Open University or Teachers Training Colleges will be removed from their teaching position. After researcher knowing this context the researcher started informal discussion with individual teachers by explaining the purpose of study, limitations of the study and ethical issues that guide the study and how the investigation did not have any relation with government secular. These informal conversations helped to unease the tension of the Government secular with participants and in the second phase teachers even allowed their classroom teaching to be pictured. Krefting (1991) observed that "extended time period is important because as rapport increases, informants may volunteer different and often more sensitive information than they do at the beginning of a research project" (p. 217-218).

ii. Use of peer debriefing

According to Guba (1981) peer debriefing "provide inquirers the opportunity to test their growing insights and to expose themselves to searching questions" (Guba, 1981, p. 85). Qualitative researcher during the research processes is required to seek support from other professionals who are willing to provide scholarly guidance such a members of academic staff, postgraduate dissertation committee, members of the department, students seminar presentation, and etc. The feedback from peers helps the researcher to improve the quality of the inquiry findings. This means that qualitative researcher during report writing is required to present to the peers his/her study findings and receive comments from the participants. In other words the researcher involve other perceptions from peers in developing the conclusion of the study (Bitsch, 2005). The peer debrief investigator looks: background information, data collection methods and process, data management, transcripts, data analysis procedure and research findings(Pitney & Parker, 2009).

iii. 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 the systematic bias and cross-examine the integrity of participants’ responses. There are four major triangulation techniques: first, investigator triangulation - use of multiple researchers in investigating the same problem. Use of multiple investigator brings different perception into the inquiry and help to strengthen integrity of the findings; second, data triangulation/informants triangulation - use of different sources of data or research instruments such as interviews, focus group discussion or participant observation or utilizing different informants to enhance the quality of the data from different source; fourth, methodological triangulation - use of 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, district education officers) on the effectiveness of licensed science teachers, the district education officials claimed that licensed science teachers were supported in schools and district through continuous professional development but findings from headmasters and licensed teachers indicated that there was professional development support for the unqualified licensed science teachers. Therefore, it is recommended that qualitative inquiry research should at least include one or two techniques of triangulation.

iv. Member checks

Another strategy of improving quality of qualitative data is allowing member checks. Member checks means the “data and interpretations are continuously tested as they are derived with members of the 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 analysed data and interpretation made from the data. The purpose of doing member checks is to control the obliteration and biases of inquirer during the analysis and interpretation of the results. This interpretation means that analysed and interpreted data is resent to participants for them to evaluate the interpretations

made by the inquirer and suggest changes if they are unhappy with the interpretation made by the researcher which are not reported by participants themselves. Informants may reject some interpretation made by the researcher, either might be socially desirability or because of self-presentation of the researcher (Schwandt et al., 2007). Member checks strategies include: first, establishing structural corroboration or coherence i.e. testing all data to be sure there is no internal conflict or inconsistencies; second, establishing referential adequacy i.e. testing all the analysis and interpretation against documents records that were used during data collection and final member checks before producing final document as described above (Guba, 1981).

v. Negative Case Analysis

Negative case analysis is when emerging data from inquiry contradicts with researchers prior expectation (Bitsch, 2005). If this happen during the investigation the researcher is required to conduct negative case analysis of the emerging cases from the study. Reporting the negative cases results improves credibility of the study because the researcher accounts the contradiction that emerged from data and this could be used as a base for plausible alternative explanation for the study. In other words, the negative case analysis helps to reformulate research questions and improve the rigor 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 whether the researcher or the research team have done an in-depth study to gain detail” (Bitsch, 2005, p. 83). Persistent observation helps to understand participants’ prevalent qualities and unusual characteristics. Extended interaction with context and participants add the advantage to the inquirer because it help him/her to understand essential characteristics of the setting (Guba, 1981). Miles and Huberman (1994) reported that data collected at entry time in the field is weaker than the one collected at the near end of the study. This interpretation suggests that persistent observation helps

to understand participants' world view and effects of researcher's presence during the field work in minimized

Transferability

Transferability refers to the degree to which the results of qualitative research can be transferred to other contexts or settings 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).

i. Provide thick description

According to Li (2004) “to enable judgments about how well the research context fits with 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 in elucidating all research processes from data collection, context of the study to production of the final report. The thick description helps other researchers to replicate the study using similar conditions in other contexts or settings. As 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, in order to support enhance transferability qualitative inquiry the research must “collect thick” descriptive data which allow “comparison of this context to other possible contexts to which transfer might be contemplated” and develop thick description of the context in order to make judgments about fittingness with other contexts possible” (Guba, 1981, p. 86). It is inquirer role to provide thick descriptions of the study to ensure transferability of qualitative inquiry.

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, institutions) based on specific purposes associated with answering a research

study's questions" (Teddlie & Yu, 2007, p. 77). It helps the researcher to focus on key informants, who are particularly knowledgeable about the issues under investigation (Schutt, 2006), because purposive sampling allows judgmental decisions about the selection of participants to be made (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). In other words informants are selected using purposive sampling techniques in order to maximize the information to be uncovered from few participants but not for generalizability.

Dependability

According to Bitsch (2005), dependability refers to "the stability of findings over time" (p. 86). Dependability involves participants' evaluation of the findings, interpretation and recommendations of the study such that all are supported by the data as received from informants of the study (Cohen et al., 2011; Tobin & Begley, 2004). Dependability is established using the following strategies: an audit trail, code-recode strategy, stepwise replication and peer examination (Chilisa & Preece, 2005; Krefting, 1991; Schwandt et al., 2007).

i. An audit trail

An audit trail strategy involves an examination of the inquiry process and product to validate the data where a researcher accounts for all research decisions and activities to show how data were collected, recorded and analysed (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 observational 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 dependability of ta inquiry require thorough observation of the informants for an extended period of time in

order to learn of any changes and the explanations for changes (Wallendorf & Belk, 1989).

ii. Stepwise replication

Stepwise replication strategy is qualitative research data evaluation procedure where two or multiple researchers analyse the same data separately and compared the results (Chilisa & Preece, 2005). The inconsistencies that arise if any from the analysis by multiple analysis the researchers is required to address them in order to improve the dependability of the inquiry.

iii. Code-recode strategy

During the code-recode strategy the researcher codes the same data twice by giving at least one or two weeks' gestation period between each coding. The results from the two coding are compared to see if the results are the same or different (Chilisa & Preece, 2005). This helps the researcher to understand deeply the patterns of the data; and also improve the knowing of the participants narrations.

iv. Triangulation

Triangulation as already discussed in the credibility section—is the strategy of collecting data from different sources, employing different research methods, techniques or even mixing two different paradigms. Triangulation strategy helps to compensate weaknesses of one method or technique of data collection with alternative strategy (Cohen et al., 2011).

iv. Peer examination/peer debriefing

Peer examination in principle is not different with member checks strategy employed to enhance the credibility of the inquiry (Bitsch, 2005; Krefting, 1991). During peer examination 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 to his/her study and also peers contribute to researcher's deeper reflexive analysis. In addition, colleagues help to identify the categories that are out of the framework of research questions or help to identify negative cases.

Confirmability

Confirmability refers to the degree to which the results of the 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 trail, 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). Confirmability strategies such as audit trail and triangulation have been discussed in other sections above while reflexive journal or practice is covered in the next subsection.

i. Practice reflexivity/reflexive journal

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 reflexive journal and in this journal content should include all events during the field, personal reflection in relation to study such as ‘ah’ phenomenon that arise during the processes of investigation. The researcher is required to keep all electronic records (tape recorded) and non-electronic (i.e., field notes, documentary materials) during the whole investigation. These records helped to cross-check the data and writing of the final report of the study.

Assessing Integrity

The concept of integrity of inquiry findings was first raised by Wallendorf and Belk (1989). They argued that the challenge facing qualitative researcher is how she/he can ensure that the data provided by the informants were not false fabrication. Since qualitative investigation intently immerse into informants world view, the informants might not be happy with information asked by the researcher or they might have disinclination with researcher, hence, they might decide to provide false information. As a qualitative researcher the best strategy to overcome misinformation, evasions and lies is to be skeptical with information that you feel might not be correct. Other strategies include: prolonged engagement and the construction of rapport and trust, triangulation (across sources, methods, and researchers), good interviewing technique, safeguarding informant identity, researcher self-analysis and introspection (Wallendorf & Belk, 1989).

Discussion and conclusion

Although it is more than three decades since Guba's publication on strategies used to assess authenticity of qualitative inquiry, the enduring impact of quantitative research approach is not fading. It doesn't mean that quantitative approach is irrelevant but other approaches need to take position to address issues that are hard to be addressed by rationalist paradigm. In other words the slow takeoff of qualitative research trustworthiness criteria is contributed by weak qualitative methodology training in universities. As shown in the findings of this study graduate student still use quantitative criteria to assess credibility of qualitative inquiry. This is because the criticism from quantitative proponent is still strong and little promotes naturalistic inquiry. Shenton (2004) tasked the qualitative research methodology instructors essential are to ensure researchers who are "contemplating undertaking qualitative research are not only aware of the criticisms typically made by its detractors but they are also cognisant of the provisions which can be made to address matters such as credibility, transferability, dependability and confirmability" (p.73). This findings are in-line work by Shenton (2004) and Tobin and Begley (2004) reported that debate has yet finished as opponent of qualitative approach continued to rise disbelieves of trustworthiness criteria for assessing authenticity of the findings qualitative

inquiry. This finding suggests that qualitative research proponents are required to do more activism to strengthen the application of qualitative trustworthiness criteria to restrain the impact quantitative critics. As 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 findings that adopted the criteria discussed in this paper are conceivable. This paper reported number of strategies to ensure the authenticity of qualitative inquiry, however, is not necessarily for researcher to adopt all strategies. This paper recommends to qualitative researchers to adopt at least two strategies in reference each trustworthiness criteria discussed in this paper and this will improve the believability of qualitative inquiry. More importantly, the findings have implication for qualitative research students and qualitative methodology instructors, in particular, they are to address the critics of from quantitative researchers and also improve the teaching qualitative methodology need to be improved.

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ⁱInternal Validity is the approximate truth about inferences regarding cause-effect or causal relationships. Thus, internal validity is only relevant in studies that try to establish a causal relationship. It's not relevant in most observational or descriptive studies, for instance. But for studies that assess the effects of social programs or interventions, internal validity is perhaps the primary consideration (source: William M.K. Trochim (2006)

ⁱⁱExternal validity is related to generalizing. That's the major thing you need to keep in mind. Recall that validity refers to the approximate truth of propositions, inferences, or conclusions. So, external validity refers to the approximate truth of conclusions the involve generalization. Put in more pedestrian terms, external validity is the degree to which the conclusions in your study would hold for other persons in other places and at other times. (Source: William M.K. Trochim (2006).