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The Value of a Qualitative Pilot Study in a Multi-Phase Mixed Methods Research

Abstract
There is debate about the need for pilot studies in qualitative research and limited publications on its usefulness as a part of a mixed methods study which includes a qualitative phase. This qualitative pilot study was a part of a multiphase mixed methods research which investigated the nature of assessment in Jamaican secondary schools. The larger study aimed at developing a model for more effective implementation of formative assessment in the teaching of English at the secondary level. This article discusses the value of pilot studies in qualitative research in general and as a part of a multiphase mixed methods research. The qualitative pilot study was valuable in helping me to refine the research protocols, pre-empt possible challenges and increase my training and confidence in conducting qualitative research. Consequently, it added to the legitimation on the overall mixed methods research. Qualitative pilot studies are necessary especially for novice qualitative and mixed methods researchers.

Keywords
Formative Assessment, English Language and Literature, Pilot Studies, Qualitative, Multiphase, Mixed Methods

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The Value of a Qualitative Pilot Study in a Multi-Phase Mixed Methods Research

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There is debate about the need for pilot studies in qualitative research and limited publications on its usefulness as a part of a mixed methods study which includes a qualitative phase. This qualitative pilot study was a part of a multiphase mixed methods research which investigated the nature of assessment in Jamaican secondary schools. The larger study aimed at developing a model for more effective implementation of formative assessment in the teaching of English at the secondary level. This article discusses the value of pilot studies in qualitative research in general and as a part of a multiphase mixed methods research. The qualitative pilot study was valuable in helping me to refine the research protocols, pre-empt possible challenges and increase my training and confidence in conducting qualitative research. Consequently, it added to the legitimation on the overall mixed methods research. Qualitative pilot studies are necessary especially for novice qualitative and mixed methods researchers.

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Pilot studies are often referred to as feasibility studies (Thabane et al., 2010; van Teijlingen & Hundley, 2001) although this synonymous use of the terms is contested (Arain, Campbell, Cooper, & Lancaster, 2010; Eldridge et al., 2016). Despite the contention, there is agreement that pilot studies are small-scale studies that precede larger studies and help researchers to make improvements to the larger study. The usefulness of pilot studies is readily accepted in quantitative research as “piloting” questionnaires is a required step in surveys (Babbie, 2013; Creswell, 2014), as is pretesting experiments (Creswell, 2014). This usefulness is not as definitively stated in qualitative research. While some qualitative researchers opine that pilot studies are useful, especially for novice researchers (Harding, 2013; Holloway, 1997; Krathwohl, 2009; Tashakkori & Teddlie, 2003), they also posit that pilot studies may not be necessary as the entire process of data collection and analysis includes improving strategies, refining ways of thinking and identifying alternative paths (Harding, 2013; Holloway, 1997; Ismail, Kinchin & Edwards, 2018). Therefore, the value of pilot studies in qualitative research is not readily obvious or is questionable. Notwithstanding, there is a noted dearth of literature on the uses and outcomes of pilot studies especially in qualitative and mixed methods studies (Ismail et al., 2018; Janghorban, Roudsari, Taghipour, 2014; Kim, 2010; Padgett, 2008; Secomb & Smith, 2011; van Teijlingen & Hundley, 2001), and researchers agree that added literature will be beneficial to both research approaches (Gudmundsdottir & Brock-Utne, 2010; Ismail et al., 2018; Secomb & Smith, 2011). There is also a noted need for reports and discussions on pilot studies in education research (Fraser, Fahlman, Arscott, & Guillot, 2018; Olsen, 2018). This article aims at contributing to filling these gaps.

The Usefulness of Pilot Studies

Pilot studies serve many purposes in qualitative research. Some of the most frequently listed purposes from the literature reviewed include:
1. Developing and refining research instruments (Berg, 2004; Bickman & Rog, 2009; Kim, 2010; Sampson, 2004; van Teijlingen & Hundley, 2001; Yin, 2014);
2. Assessing the feasibility of recruitment protocols (Bickman & Rog, 2009; Nunes, Martins, Zhou, Alajamy, & Al-Mamari, 2010; Secomb & Smith, 2011; van Teijlingen & Hundley, 2001; van Wijk & Harrison, 2013);
3. Designing, assessing and refining research protocols (Kim, 2010; van Teijlingen & Hundley, 2001; Yin, 2014);
4. collecting preliminary data (Janghorban et al., 2014; van Teijlingen & Hundley, 2001);
5. Pre-empting possible challenges in data collection and analysis (Arain et al., 2010; Kim, 2010; van Teijlingen & Hundley, 2001);
6. Increasing training and confidence in conducting qualitative research (Berg, 2004; Holloway, 1997; Ismail et al., 2018; Janghorban et al., 2014; Nunes et al., 2010; van Teijlingen & Hundley, 2001);

Some researchers have further outlined how the purposes of pilot studies are linked to particular qualitative research approaches: phenomenology (Janghorban et al., 2014; Kim, 2010), grounded theory (Janghorban et al., 2014; Nunes et al., 2010), and ethnography (Janghorban et al., 2014; Sampson, 2004; Sampson & Thomas, 2003). Janghorban et al. (2014) purport that in phenomenology, pilot studies allow the researcher to bracket personal bias and thereby maintain the centrality of epoch. For qualitative research with a grounded theory approach, pilot studies are useful for developing theoretical sensitivity through contextual sensitivity. Janghorban et al. (2014) explains, “A pilot study in grounded theory provides contextual sensitivity which is an integral part of inductive analytical process that involves the theory development process through expanding the range of theoretical concepts” (p. 3). Therefore, pilot studies provide researchers engaged in grounded theory research with insights on how to conceptualize the research, focus on important data and sample theoretically (Nunes et al., 2010). For ethnographers and other qualitative researchers, pilot studies allow the researcher engaged in field work to pre-empt possible challenges (including risks to researchers and participants) and increase familiarity between the researcher and the participants (Janghorban et al., 2014; Sampson, 2004; Sampson & Thomas, 2003). Consequently, while pilot studies are useful in general, they have specific uses for different qualitative approaches.

Despite the benefits, pilot studies have limitations as they may not identify issues that may arise in the larger study and they may introduce issues of contamination (Ismail et al., 2018; van Teijlingen & Hundley, 2001). Contamination as it relates to pilot studies occurs when the sample or data collected in the pilot study is included in the larger study. In quantitative research, there appears to be a unanimous agreement that the sample and data from the pilot study should be excluded from the main study (Ismail et al., 2018; Peat, Mellis, Williams, & Xuan, 2002; van Teijlingen & Hundley, 2001). This position is based on arguments that if data from the pilot study is included and the instrument was not reliable or valid, then combining data from the pilot with data from the main study may lead to the addition of invalid data to the entire data set, thereby contaminating the data that would have subsequently been collected from an improved instrument. The position against including the pilot sample in the main study in quantitative research is also based on the fact that experiments that include pilot samples in the main study distorts the conditions (for example, the length of the experiment) for sample units. Some sample units would have been involved in the experiment or intervention longer than others. Consequently, they may lose interest or develop
greater skill (van Teijlingen & Hundley, 2001). Finally, the sample size in pilot studies are usually too small to generate valid data for quantitative analyses.

In contrast, there are divergent views on the issue of contamination in qualitative research. As van Teijlingen and Hundley (2001) pointed out, “contamination is less of a concern in qualitative research, where researchers often use some or all of their pilot data as part of the main study” (p. 2). These writers explained that the progressive nature of qualitative studies where questions are refined, deleted, or added as the process of data collection progresses makes contamination less of an issue in qualitative research (van Teijlingen & Hundley, 2001). Using the same participants in the pilot and the main study is supported because it could serve to improve familiarity and thereby the relationship between the researcher and the participants (Janghorban et al., 2014). On the other hand, using the same participants may also cause loss of interest through repetition (Ismail et al., 2018). Because of the lack of consensus, I decided to conduct this pilot study because of the numerous advantages and decided to determine whether to include the pilot case in the main qualitative phase after the pilot study.

**Description of the Main Study**

I conducted a multi-phase mixed methods research to investigate the nature of assessment in Jamaican classrooms and to develop a model for more effective implementation of formative assessment in the teaching of English in secondary schools in Jamaica. My formal interest in formative assessment began with a major finding reported by the National Education Inspectorate (NEI) in Jamaica from inspection of primary and secondary schools across the island. Mrs. Foster-Allen, then permanent secretary in the Ministry of Education, Jamaica, reported that assessment, especially the use of formative assessment, was a major challenge in schools across Jamaica. The NEI had observed that teachers, especially in the “failing schools” did not formatively assess their students and when formative assessment strategies were used, they were not used effectively to improve teaching and learning (Foster-Allen as cited by Flemming, 2013). Since 2013, assessment has been viewed as unsatisfactory in subsequent NEI reports.

Being a secondary school teacher at that time and feeling that I was a victim of what I considered to be the quick and sometimes unfounded proclamations of the NEI, I was immediately skeptical. My experience with the NEI, where members of the team arrived five minutes before the end of the class, then made judgments about the quality of my teaching, left me with less than minimum confidence in the credibility of their findings and reports. Besides, living and working in a country where teachers are often blamed for their students’ failings made me very defensive. I felt compelled to discover to what extent teachers were formatively assessing their students, and whether formative assessment could make a difference in students’ achievement—especially in English (my area of specialization).

Despite my reservations about the credibility of the NEI’s conclusion, I was keen on implementing strategies to improve students’ achievement that extended beyond passing national standardized tests. This drive stems from my experience of upward social mobility through education. Having risen out of poverty through education, I felt it my duty to facilitate the same for others. If formative assessment could help, I wanted to find out how it could be more effectively incorporated. Also, while lecturing at the tertiary level, I have had students repeatedly praise my teaching and assessment strategies because they received constructive and immediate feedback, rubrics, and were constantly involved in systematic peer and self-assessment. My use of the strategies led me to believe that implementing formative assessment was possible, but I wanted to find out how it could be implemented on a larger scale, so that the benefits could be realized in Jamaican classrooms. For the past 14 years, I have been
employed in the field of education at the secondary and tertiary levels. My experiences have greatly influenced my research interest, approach and interpretation.

The research was the first in the local context and contributed to the international need for empirical studies on best practices related to formative assessment in general and specific to the application of the generally accepted framework presented by Wiliam and Thompson (2008) (Andersson & Palm, 2017; Black & Wiliam, 1998; Cizek, 2010; Dunn & Mulvenon, 2009; Vingsle, 2014). The main study started with a quantitative survey of 1088 secondary school teachers across Jamaica and proceeded to a multiple-case instrumental case study design (Creswell, 2014; Yin, 2014) in the qualitative phase. The qualitative phase was followed by a pre- and post-test quasi-experimental phase with 32 teachers of English and then an overall interpretation phase. The quantitative, qualitative and experimental phases were each preceded by pilot studies. I will however focus on the value of the qualitative pilot study as a part of a qualitative research in general and as a part of a multiphase mixed methods research.

**The qualitative pilot study.** I conducted the qualitative pilot study to assess the practicality and the validity of the qualitative methods of data collection (interviews and observations) and processes of data collection, analysis and interpretation. I specifically wanted to find out to what extent the qualitative phase could provide answers to the questions that guided that phase:

1a. What assessment tools and strategies do Jamaican secondary school teachers use most frequently?
1b. How do secondary school teachers use different assessment tools and strategies?
2a. How do secondary school teachers explain the perceived greater influence of teacher factors on their choice of assessment tools and strategies?
2b. How does the qualitative phase explain the quantitative analysis as it related to school type?
3. How can formative assessment be effectively infused into the teaching of English in Jamaican secondary schools?

This pilot study also aimed at answering the following methodological questions:

1. How effective are the research methods and procedures?
2. How can I improve as a qualitative researcher?

Questions 2a and 2b were added to provide explanations of the quantitative results. The methodology questions, and specifically question 2, further underscores the contribution of this article to the existing literature on qualitative pilot studies. As Ismail, Kinchin and Edwards (2018) highlighted, their review of the literature showed that among the limited studies on qualitative pilot studies, “few academics addressed the usefulness of PS for the competence of qualitative researchers” (p. 3).

**Data collection methods and procedures.** Before describing the methods and procedures of data collection and analysis, I want to highlight that what is presented here is a summary of the methods and procedures as the focus of this paper is the value of the pilot study and not a presentation of the study itself. More detailed descriptions will be provided elsewhere.

I used a multiple-case instrumental case study design (Creswell, 2014; Yin, 2014) in the qualitative phase of the study and the methods and procedures used in the pilot were those
I intended to use in the main qualitative phase. The pilot was conducted using one of the participants, Ms. Brown (pseudonym), from one of the schools that met the criteria for selection for that phase. I first collected data through semi-structured, in-depth interviews (DiCicco-Bloom & Crabtree, 2006). Then, I followed up the interviews with non-participant observations using an approved interview schedule. I observed Ms. Brown twice, transcribed the interview, and extended the field notes for analysis. I also collected her lesson plans for document analysis and to supplement the data on what types, how and why she used different assessment tools and strategies.

Before I analyzed the data, I sent the transcription to Ms. Brown for verification. I analyzed the data using a general inductive approach to qualitative data analysis (Thomas, 2003) and proceeded through cycles of coding (Yin, 2014). I also used peer- and expert-checking of my analysis to ensure the credibility of the process and the results.

The Value of the Qualitative Pilot Study

In looking at the value of the qualitative pilot study, I will first share the ways in which it contributed to the development of the study and then discuss how it helped me as a qualitative researcher.

Contributions to the development of the study. This qualitative pilot case study confirmed that pilot studies are useful for assessing the practicality of the research methods and procedures. It highlighted that the methods and procedures could provide useful answers to all the qualitative research questions that guided this phase of my research. It also showed that the methods were not intrusive or too laborious for the participant. At the end of the interview with Ms. Brown, I informed her that we had been talking for 51 minutes and she exclaimed that she had not realized that it had been that long. She also did not find any of the questions irrelevant or confusing. Therefore, I made no change to the interview schedule.

The pilot case study also allowed me to pre-empt certain challenges. For example, it made it clear that the observation checklists could not be used while the observations were being done, because of the speed of real time interactions within the classroom. I could not focus on observing all that was happening in the classroom, write field notes and make checks on the list at the same time. I was more interested in getting a full understanding of the real-life interactions in the classroom and not just what could be captured on the checklist. Therefore, after the first five minutes of the first observation, I decided to discontinue the use of the observation checklist. While analyzing the data, I realized that I could use the checklist in analyzing the accompanying audio recordings of the observations in the analysis of the data instead. I used it for peer-checking where a fellow doctoral candidate who was also engaged in qualitative research used the checklist to check for frequency of use of different assessment strategies as well as the levels of the different questions asked. Her checks were then corroborated with my checks as a verification mechanism. It ensured credibility (Shenton, 2004). Consequently, for the main qualitative phase, I decided to use the checklist for data analysis instead of data collection. Overall, the pilot case study showed that the qualitative phase of my research was practical, the methods and procedures were mostly sound, and they provided useful answers to the research questions.

Value to my development as a qualitative researcher. Researchers have highlighted that pilot studies were useful in increasing training and confidence in conducting qualitative research (Holloway, 1997; Ismail et al., 2018; Janghorban et al., 2014; van Teijlingen & Hundley, 2001). Practicing and improving the researcher’s skill in qualitative inquiry improves the overall credibility of the study (Janghorban et al., 2014; Padgett, 2008). These benefits were
realized in conducting this pilot case study. Expert checking with a qualitative researcher, published writer and lecturer confirmed that, for the most part, my methods and procedures were sound and that increased my confidence as a qualitative researcher. Although I was conducting a mixed methods study, I wanted to be sure I was doing justice to both quantitative and qualitative research separately. Because this was only my third qualitative research, I was nervous about my abilities. The validation of this expert made me more confident.

Feedback from the expert also identified ways in which I could improve as a qualitative researcher. She recommended that during interviews I should ask for further clarification and explanation, rather than rely on my own perceptions. For example, Ms. Brown commented that “projects were not functional.” I did not ask what she meant but deduced that she meant that since projects were not used in the national assessment of English at the secondary level at the time, they did not function to prepare students for these standardized assessments. The expert advised that I could return to Ms. Brown to ask for an explanation and ask for clarification in subsequent interviews. I heeded both recommendations. This experience validated my initial decision to transcribe interviews early and collect and analyze data simultaneously rather than consecutively. If I had waited until I had completed data collection to transcribe and analyze the interviews, I could have lost the opportunity to go back to the participants to ask for clarification. The participants may also forget what they meant or were talking about, or lose interest in clarifying.

The expert also pointed out that although my intention was to use codes in the first cycle of data analysis, in a few instances, I used categories instead of codes. An example can be seen in the excerpt from the interview below where I asked Ms. Brown about her perceptions of her school’s assessment policy.

Ms. Brown: I was called up by the VP [Vice Principal] because of their [her students’] low scores in the term exams. They [The administrators] were concerned about how so many of them [her students] were getting below fifty percent, and . . . yeah . . . and I can remember thinking, “Oh Jesus Christ! I have really failed!” And I was worried.

I had coded the circled section impact of the school’s assessment policy (SAP). During consultations, the expert highlighted that “Impact” was more a category than a code because it was broad. I subsequently decided to label the section “emotional impact” and “negative impact of the school’s assessment policy.” Two other instances were changed in the same way as well. Throughout the analysis of the data in the main study, I paid particular attention to making sure that I used codes rather than categories in the first cycle of the data analysis process.

The process of collecting and analyzing the data in the pilot study boosted my confidence and training as a qualitative researcher. The confirmation that I was doing most things in accordance with the practice and principles of qualitative research was motivating. Similarly, identifying areas for improvement as a qualitative researcher and having solutions before the main study helped me to feel more confident. The flaws identified by the expert in the pilot case study were not issues raised in the expert checking process of the main qualitative phase. Consequently, the pilot served formative purposes where I could get feedback and effect improvements before engaging in the main study. That process improved my confidence and expertise as a qualitative researcher.

According to Nunes et al. (2010) pilot studies allow qualitative researchers to identify and probe emerging topics. Although these researchers were speaking specifically to pilot studies in grounded theory research and I was not conducting a grounded theory research, I
was able to seize this opportunity because of this pilot study. It also allowed me to identify areas for further investigation such as the summative use of alternative assessment tools and strategies. Without this analyzing the data in the pilot study, I would not have been guided to look for this concept in subsequent interviews and observations. This pilot case study helped me to appreciate the intricate relationship between data collection and data analysis. Doing both simultaneously allowed me to return to participants for clarification in a timely manner and identify emerging and important topics. This led to my decision to simultaneously collect and analyze as much data as possible and not wait until all the interviews and observations had been conducted to begin data analysis.

**Discussion**

Qualitative pilot studies are necessary in mono-method and mixed methods studies. They are valuable in increasing the training and confidence, particularly of novice researchers. They help to assess the practicality and usefulness of research methods and procedures and help to pre-empt and overcome possible challenges in the main study. I must concede that some improvements to the main study could have been made without the use of a pilot study. For example, I could have returned to my data and ensured I used codes in first cycle coding based on expert checking of my analysis of the data in the main study. However, identifying areas for improvement in interviewing the participants and being able to return to make timely inquiries for further explanations would not have been possible without the pilot study. I also would not have been as confident in conducting the qualitative phase of my research and would not have benefited from the additional training in interviewing, observation, and qualitative data analysis. Moreover, in a mixed methods study, the validity or credibility of the other phases can be compromised if the qualitative phase is not robust and the methods and procedures are not sound (Creswell, 2009; Dellinger & Leech, 2007; Onwuegbuzie & Johnson, 2006; Tashakkori & Teddlie, 1998). Therefore, the benefits of conducting the pilot study for the qualitative phase extended to the other phases of the research as well. In this mixed methods research, the qualitative pilot study improved the quality of the qualitative phase and enhanced the overall credibility of the study.

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