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A Comparison of Teacher Research and Qualitative Case Study Research

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I. INTRODUCTION

When looking back at their own classrooms carefully, teachers are likely to wonder about many issues and raise many questions. Such wonderings then lead to an inquiry for teacher research. Lankshear and Knobel (2004) define teacher research as "a systematic approach to studying teaching for the improvement of teaching and learning" (as cited in Castle, 2012, p. 3). Thus, the approach of teacher research makes a great contribution to the archive of educational research.

Sharing a similar goal of educational improvement with teacher research, qualitative case study research has been applied prevalently by teachers, educational leaders, and others involved in the field of education. Merriam (1988) claims, "a qualitative case study is an intensive, holistic description and analysis of a single instance, phenomenon, or social unit" (p. 21). The case can be a student, a teacher, a school, or an educational policy. According to Yin (2009), case study research is "the study of a case within real-life, contemporary context or setting" (as cited in Creswell, 2007, p. 97).

These two approaches may reveal both similarities and differences so the paper is going to make a comparison of teacher research and qualitative case study research in terms of the formulation of a research question(s), the use of theory in the research, methodology, strengths, limitations, and a rationale for when each is appropriate.

The Formulation of Research Question(s)

Research question is the most important part of a research study. In teacher research, formulating a research question is based on "interests, problems, and daily interactions with children and other teachers" (Castle, 2012, p. 36). A teacher often starts doing research with a burning question about his or her classroom. Shagoury and Power (2012) contend that "turning tensions into a research question can be the best mental stress reducer at a teacher's disposal" (p. 23). In this sense, research questions open up to new possibilities, experiences, understanding and help to narrow what is going on. Yet, in fact, it is rather difficult to narrow down the research question to something practical and measurable. Initially, Castle (2013) recommends that teachers should avoid a leading question, eliminate jargon, avoid Yes/No questions, specify the interests, and consider the viability.

In her book, Castle (2012) also suggests using a protocol (structured conversation) and reflection as an effective strategy to refine the question. A protocol is utilized by getting feedback from other colleagues in a supportive group, and in some cases, if others' ideas are not valuable, the teacher needs to think deeply about the topic and connects the question with personal experiences. Lankshear and Knobel (2014) state, "a good research question is clear, focused, of personal interest, doable, and not already answered" (as cited in Castle, 2012, p. 3)

In a qualitative research study, the researcher starts with a research statement of what he or she wants to look for. Creswell (2012) insists, "qualitative research questions are open-ended, evolving, and non-directional" (p. 138). The questions often begin with what or how to focus on a phenomenon. In case study, the researcher has to consider if the case is worth being examined as a research problem. There may be an overarching research question and some subquestions. Like teacher researchers, case study researchers also need to refine their research questions.

Use of Theory in the Research

According to Castle (2012), educational research studies including teacher research fall into the paradigm of behaviorism, interpretivism, and constructivism. The theories support behaviorism involving experimental design and the control of variables to discover "the truth" (Castle, 2012, p. 44). In contrast, an interpretive paradigm is popularly embedded in educational research as it denies the existence of a truth and

values an interpretation of reality. The research designs reflecting such paradigm includes grounded theory, ethnography, narrative, and naturalistic inquiry. The last theoretical foundation in teacher research studies is constructivism. As Castle (2012) proposes, "a constructivist approach to research is focused on what it means to construct knowledge and how teachers can play a role in helping the knowledge construction process of their students" (p. 45). Similarly, qualitative case studies also derive from interpretive or constructivist paradigm. Besides, Merriam (1998) confirms that "qualitative case studies in education are often framed with the concepts, models, and theories from anthropology, history, sociology, psychology, and educational psychology" (p. 19). For example, a case study of a single student struggling with reading concepts would draw from theories of learning in educational psychology.

II.   METHODOLOGY

In terms of methodology, teacher research is much different from qualitative case study research. Teacher research can be quantitative, qualitative, or mixed methods research. The majority of teacher researchers use a non-experimental approach. Teacher research is a mixed methodology when the teacher incorporates number data with a description of what happens in the classroom. Distinctively, case studies are attached with qualitative research design.

Participants.

The main participants of teacher research are students in the teacher researcher's classroom. In some cases, the research may involve other students in other classrooms, other teachers, and parents. On the contrary, qualitative case study research has a larger range of participant selection. Thus, the selection must be based on purposeful sampling strategies. The researcher has to pay attention to some factors of ethnicity, age, gender, educational level, socioeconomic class, etc (Glesne, 2011).

Data collection.

Teacher researchers can collect both qualitative and quantitative data. Data sources come from teacher journal, observation, field notes, anecdotal notes, video/audio recordings, photography, interviews, existing document/records, classroom/ student artifacts (different types of texture data, students' journal, creative things, photos); surveys, questionnaires, rating scales, checklist, test/ formal instrument.

For qualitative case studies, Creswell (2012) states, "the data collection in case study research is typically extensive, drawing on multiple sources of information" (p. 100). According to Baxter and Jack (2008), there are some potential data sources, "documentation, archival records, interviews, physical artifacts, direct observations and participant-observation" (p. 554). Three types of interviews in qualitative research are structured, semi-structured, and unstructured conversational interviews (Glesne, 2011).

Data analysis.

In fact, teacher researchers usually harvest more data than they need. Thus, teacher researchers would find it difficult to manage with a large amount of data (Castle, 2012). They have to select, categorize data, develop a coding system and ask questions. Key questions for data analysis, according to Phillips and Carr (2010), can be "What seems to be happening in this data? What is not happening in this data?" (as cited in Castle, 2012, p. 100). Besides, teachers need to do constant comparative analysis due to the multiplicity of data.

Although collecting quantitative data, teacher researchers do not apply an analytical approach to quantitative data in their studies. Commonly, the technique of analysis involves frequency counts of repeated themes in observation data, scores, and evaluations of performances in rubrics or checklists. Data can be displayed in narrative form or graphic representation. Teacher researchers utilize tables, charts, or graphs to interpret and report data (Castle, 2012).

Castle (2012) also suggests that common approaches to qualitative data analysis begin with organizing in order to "convert all data to text or narrative format" (p. 114). The next step is to reread the data many times to find out multiple meanings. The teacher continues to categorize, code, and analyze emerging themes. Supplementary work includes document analysis and analysis of child artifacts. The mixed-methods data analysis is a flexible combination of both quantitative and qualitative data analyses. Finally, "teacher researchers use the insights gained from data analysis and interpretation to make sense of their situations and to make needed changes in what they do" (Castle, 2012, p. 97).

For case study research, there are four approaches of analyzing qualitative data: conversational analysis, narrative analysis, semiotics, thematic analysis (Glesne, 2011). The researcher can also use some computer software such as Computer-Aided Qualitative Data Analysis Software (CAQDAS). Stake (1995) regards "categorical aggregation and direct interpretation" as approaches to data analysis while Yin (2003) suggests five techniques: "pattern matching, linking data to propositions, explanation building, time-series analysis, logic models, and cross-case synthesis" (as cited in Baxter & Jack, 2008, p. 554).

Report of findings.

"Teacher research involves collecting and analyzing data as well as presenting it to others in a systematic way" (Shagoury & Power, 2012, p. 3). With a view to contributing to the field and professional development, teacher researchers think of sharing the results informally and formally. The recipients of such sharing may be other teachers, administrators, parents, community members, or other audiences on local, national networks. Informal sharing can occur through conversations, documentation, and letters or newsletters while formal sharing can be attained by presenting the findings in conferences, workshops, or writing professional journals.

In qualitative case studies, the researcher reports the meaning of the case(s); however, it is often difficult for the researcher to report dimensional findings of a case study to the readers. Thus, the researcher has to summarize or narrow major findings to make them comprehensible. Yin (2003) introduces six methods used for reporting. The methods are "linear, comparative, chronological, theory building, suspense, and unsequenced" (as cited in Baxter & Jack, 2008, p. 555).

Strengths and Limitations

Teacher research is beneficial to the teacher researchers as "teachers are surprised and delighted to realize that research can focus on problems they are trying to solve in their classrooms" (Shagoury & Power, 2012, p. 3). In retrospect, teacher research can illuminate reflective teaching that emphasizes a way of knowing and being critical of what is going on in curriculum implementation. A teacher research study will become an action research when the teacher researcher(s) determine to make a viable plan of changes in order to improve teaching and learning. However, teacher research may be limited as research activities can occur in the classroom. Teachers also have to schedule teaching and doing research at the same time. Besides, as the research relates directly to the students in a teacher researcher's classroom, ethical issues need to be considered carefully.

Merriam (1998) argues that case study is authentic and rich in the analysis of a phenomenon. In education, case study has been applied to expand field knowledge and appeal for practical policies. Yet, case study research can be challenging as the researcher has to decide the number of the cases and which bounded system to explore (Creswell, 2012). Besides, the researcher may be discouraged as case studies cost time and money to attain deep analyses and thick descriptions. Guba and Lincoln (1981) notice that "case study can oversimplify or exaggerate a situation" (as cited in Merriam, 1998, p. 42), so it may be not supported by a large number of readers, especially policymakers who may not like being too involved or being criticized. Case study may also lack of rigor as it may be personally biased.

A Rationale for When Each is Appropriate

"The notion of understanding learning from the students' perspectives is central to teacher research" (Shagoury & Power, 2012, p. 4). Thus, teacher research is needed when a teacher realizes a problem or unexpected things relating to the benefits of the students. In other words, teacher research is a motive for innovation in teaching and learning (Shagoury & Power, 2012).

Qualitative case study approach is used when a researcher wants to examine the phenomenon objectively although being involved in the situation. In this sense, a case study offers a broad view of the school setting or educational process. According to Merriam (1998), case study is unique because "it can reveal about a phenomenon, knowledge we would not otherwise have access to" (p. 33). As such, case study is useful for enriching human experiences.

In short, teacher research and qualitative case study research share a similar use of theory in the research. In terms of differences, teacher research appears to be more specific in examining classroom problems while qualitative case studies result in a holistic analysis of the case. In practice, these two approaches can be combined together to gain deep understandings and vicarious experiences.

III. ACKNOWLEDGEMENT

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