Choose Your Own Adventure Methods Deep Dive ~ The Qualitative Case Study

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The topic for this paper is qualitative case study methodology because the method provides tools for researchers to use in studying complex phenomena using the human story situated within a bounded context (Baxter & Jack, 2008, Stake, 2006). Qualitative case study design is frequently cited as a suitable method for comprehensive and detailed investigations of events, situations, organizations, cultures, or programs at either group or individual level (Creswell & Plano Clark, 2018; Merriam, 1998; Stake, 2006; Yin, 2009). The primary purpose behind this type of study is the researcher’s desire to focus on and illustrate an understanding of complex phenomena captured in real life settings or natural environments (Merriam, 1998; Stake, 2006; Yin, 2014).

The goal of this deep dive on qualitative case study method is to provide readers with an understanding of the method and its’ contribution to research, illustrate current research using this method, describe its’ foundational origins through a look at the historical background and key scholars, and explain general process steps and considerations for undertaking a case study approach to qualitative research. A selective list of journals suitable for qualitative research is included in Appendix A.

**Qualitative Case Study Method**

Qualitative research has a long and storied reputation of being secondary to quantitative research because of qualitative’s more descriptive nature, focus on, and concern for, details of understanding the dynamics of human behavior, that are typically more individualized and rely on words rather than numbers. In contrast, quantitative research focuses on facts about social phenomena and are defined by a fixed and measurable reality, often in the form of numeric measures or statistics (Creswell & Plano Clark, 2018). Both approaches to research are important and lauded as vital to holistically explain and describe various phenomenon in the world, with quantitative providing the more broad general points that can be counted, measured, and numerically represented and qualitative offering the more detailed, descriptive and conceptual human experience. Once traditionally used exclusively in the fields of sociology, history and anthropology, qualitative research has become more widely accepted in political science, health care, education, psychology, and other social sciences (Miles & Huberman, 1994). The qualitative case study methodology is portrayed by the detailed examination of a particular case, or unit of analysis, a person, organization, event, or a collection of these units. The field of anthropology has made significant contributions to qualitative research by way of methods to find patterns within textural data, interacting with and observing how people spend their time, and studying decision making procedures (Bernard, Research methods in anthropology: Qualitative and quantitative approaches, 2018).

**Current Research by Tryna Knox**

Applied research currently under way is a qualitative case study focused on leader perceptions of enacted instructional practices embedded within the context of STEM programming. In this research work, the semi-structured interview tool was used to capture leader voices after they actively participated in an intensive, multi-year professional learning program focused on implementation of STEM programming. STEM, or science, technology, engineering, and mathematics instructional practices are considered important for preparing students for rigorous high school coursework and for life beyond high school. The exploration of how leaders conceptualize STEM program implementation and how their leadership is enacted within the situational context of a bounded phenomenon, STEM Academy, was the primary focus, and the study was designed to reveal implementation experiences and influencers to inform future program design. Although not intended to generalize to wider populations, case study research is of value and will be used to interpret participants experiences and to explain human behavior within and across the context of STEM Academy.

The qualitative case study design was chosen for this research work because through the social interaction guided by the interview tool, the leader’s authentic voice, beliefs, and perceptions were captured. The process empowers the interviewee to make meaning from their lived experience and communicate that understanding to the interviewer (Creswell & Plano Clark, 2018). Each interview belongs to a collection of cases, or quintain, and was considered independently, as a unique case within the larger context of multiple case scenario, bounded by STEM Academy, however, the quintain is what is of interest (Stake, 2006). Qualitative research has merit on its own and is also useful within the larger context of mixed methods research where both qualitative and quantitative data are used to broaden the scope, breadth, and depth of understanding and to establish “multiple ways of seeing and hearing” (Greene, 2007).

# Foundations of Qualitative Case Study

There are often misunderstandings and conflicting messages about what constitutes qualitative case study as a methodology, due in part to the its origins and varying ideologies of the many qualitative researches that support or evaluate this method of research. This paper will help unravel some of the misunderstandings of the methodology by providing background in historical context and a snapshot of current scholars in an educational setting.

### Origins and Historical Background.

Long before Wilhelm Wundt, founder of scientific psychology, was conducting qualitative research, a French mining engineer and sociologist named Pierre-Guillaume-Frédéric Le Play, was developing qualitative methods to study family morale within the context of industrialization and social conflict in early to mid-1800s France. His journey into sociology began after becoming dissatisfied with the impact of mining practices on laborers he observed while working as engineer-in-chief and inspector of a large mining school. He later gave up mining to pursue sociology fulltime and became intrigued with understanding the relationship between changes in society and family morale. While living among the residents, he gathered qualitative data about income, expenditures, attitudes, and interactions of family members. Results of these studies were published between 1855 and 1870, and after his death in 1882, many of Le Play’s peers continued to use his theories and case study methods in their own work to test hypotheses prior to publication (The Editors of Encyclopaedia Britannica, 2020).

Beginning in the early 20th century, the qualitative case study became a common methodology in sociology, psychology, and anthropology, and today the case study has extended use far beyond the development of theories and hypotheses, having become popularized by researchers interested in more than just quantitative measures (Yazan, 2015). However, the journey for the qualitative researcher has not been completely smooth. During the positivist period of the 1940s and 1950s and the experimental design focus of the 1960s and 1970s, quantitative methods were considered much more rigorous and valid with case studies used as supplementary, only minor, descriptive research methods. Later, with more constructivist and interpretivist shifts in methods, the case study regained distinction and grew even further with the advent of grounded theory methodology in the late 1960s (Harrison, Birks, Franklin, & Mills, 2017). Today, the case study methodology we encounter is both similar and different from its earliest foundation, having evolved over the years through many iterations and contributions from diverse disciplines and assorted philosophical underpinnings. Generally accepted, the case study methodology is considered flexible and pragmatic, and serves to support researcher creativity and innovation, however, the wide-ranging perspectives and research interests of diverse disciplines has resulted in varied definitions and approaches that create inconsistencies and confusion for the novice researcher. In the next section of this paper, a brief summary of key scholars in qualitative case study methods will be presented along with some of their philosophical and methodological differences.

#### Key Scholars

After a longstanding reputation of having limited validity and being only a minor player and more of a subgroup within the broader scope of quantitative research, the case study method has become more valued and supported as a research method. Over time, researchers from diverse backgrounds, disciplines, and philosophical foundations have strengthened the qualitative case study into a popular method for investigating and understanding the many complex issues and phenomenon situated within the world around us. Some of the more recognized scholars of the qualitative case method are Robert Yin, born in 1941, an American social scientist is currently president of COSMOS Corporation. Robert Stake, born 1927, currently Professor Emeritus of Education at the University of Illinois, Urbana-Champaign. Sharan Merriam, born 1943, currently Professor Emerita of adult education at the University of Georgia. Norman Denzin, born 1941, is an American Professor of Sociology at the University of Illinois, Urbana-Champaign. Yvonna Lincoln, born in 1944, an American methodologist and currently a Distinguished Professor of higher education and human resource development at Texas A&M University, and Bent Flyvbjerg, a Danish economic geographer and Professor of major program management at Oxford University. A more detailed description of several contributing case study researchers in education follows and includes: Yin, Stake, and Merriam.

**Robert Yin,** a realist, with a background in social sciences, is considered a prominent advocate of case study methodology, known for his highly structured approach. He defined the case study in terms of the process of study and supports the use of case study to answer *how* or *why* questions in research. He initially applied experimental methods to naturalistic inquiry and described studies as in-depth inquiries of some phenomenon situated within a real-life context (Yin, 2009). In his original work, published in 1984, he presented the idea that the case study should be accepted as a stand-alone methodology, as a means to improve social science methods. More recently, he and other researchers have made significant contributions to the area of case study with structured guidelines outlining an iterative process of study, procedural steps, supportive resources, and a focus on rigor, validity, and reliability.

**Robert Stake,** a relativist, constructivist, and interpretivist, with a background in psychometrics and educational psychology, significantly contributed to the development of case study research in education. He placedemphasis on defining the case as the unit of study and provided perspective on why case studies were developed, stating that they were developed to study phenomenon that are represented by actual cases existing within specific situations and he goes on to emphasize the importance of defining the case and its context within its particular situation, or boundary. He states that these considerations are fundamental to qualitatively understanding the case. The case is of interest to the researcher when it is seen within the boundary of the larger set of cases or collection. This study of phenomenon using the multiple case study presents, what he calls, a tension between the single case and the collection of multiple single cases, or case collection. He describes this tension as a “case-quintain dilemma” wherein the single case is competing for the attention of the research, who must maintain some level of overarching perspective of the holistic case collection (Stake, 2006). The quintain he defines as the starting place for understanding the phenomenon being studied. He carefully defines a case as a noun or specific thing, differentiating it from an activity or act of doing; and states that we may, as an example, choose to study a training module as a case, and therefore examine the function of training, but the training itself, is not the case.

**Sharan Merriam**, a pragmatist and constructivist, and adult educator built on the works of Yin and Stake to use case study research in the exploration and evaluation of educational programs. She described case study research through descriptive and heuristic characteristics, with a focus on a specific entity and being able to understand and describe, in detail, study findings. Although not as structured as Yin in her process of study, Merriam did employ an organized and systematic approach to case study design.

# Completing a Qualitative Case Study

Despite the many methodological perspectives and approaches, there are common attributes across qualitative case study approaches that can be used by a novice researcher with training, support, and guiding process steps that include defining the case, data collection, analysis, and conclusions. One of the more challenging tasks is to define the case and situational context because in qualitative research there are many potentially overlapping variables or points of influence that may compete for attention from the researcher (Harrison, Birks, Franklin, & Mills, 2017). The case can be thought of as the object or focus for the study and the difficulty in establishing a definition or framework may be mitigated, in part, by time spent in defining and focusing on the purpose of the research and resulting research questions. Also, context or boundary, is central to case study research, as it provides the border of time, space, or activity limits for the next steps, data collection and analysis (Yin, 2009, Stake, 2006, Merriam, 1998).

## Data Collection – Interviews

Depending on the unit of analysis or case definition, the data collection process will take on slightly different variations. In order to gain a more comprehensive in-depth view and strengthen and assure validity of results, researchers often recommend the use of multiple methods of data collection, or triangulation. One example of triangulated data collection in qualitative research is the use of interviews, observations, and open-ended survey questions. For the purpose of this paper example, the interview will be the primary form of data collection. Although seemingly informal and simple, the interview can be used to collect high quality and credible qualitative data that can be analyzed and useful in research findings.

When interested in someone else’s story, the interview is an effective method for research. According to Vygotsky, words used by people in telling stories are a “microcosm of their consciousness” (Vygotsky, 1978). Well designed and carried-out, the interview represents a sound technique for capturing narrative and ways of knowing (Seidman, 2006). Three common types of interview structures are unstructured (often in the form of focus groups), semi-structured (using open-ended questions), and structured (using closed-ended questions). Each of these interview structures may be adapted to suit individual interests and research goals. Interviews may be conducted in person, by computer, over the phone, or by mail (Bernard, Research methods in anthropology: Qualitative and quantitative approaches, 2018). This paper will examine some general information about the semi-structured, in-person interview. The semi-structured interview is constructed of open-ended questions that are aligned with the research questions of interest. The administration style can generally be described as informal and comfortable, conducted in a conversational manner between an individual researcher and an individual participant. The collaborative nature of the technique helps to fulfil the purpose of capturing in-depth responses about study participant’s experience, perceptions, feelings, opinions, emotions, and knowledge about a phenomenon (Dare, Ellis, & Roehrig, 2018). Generally guided by an interview protocol or guide, the semi-structured interview produces data that consists of verbatim quotations and sufficient content or context to be interpretable and provide face validity and credibility (Patton, 2015). The researcher’s task is to prepare a valid tool that provides a framework that stimulates participant responses that accurately and thoroughly represent their view of the world or the particular portion of the world of interest (Patton, 2015). The semi-structured interview guide includes a list of questions within topics that are ordered for sequential administration in what typically takes about an hour to complete. Dialog begins with the interviewer asking one of the open-ended questions and the participant responding accordingly, though deviations from the interview script are common, they should remain close to topics on the script. Probing for elaboration is a common technique in semi-structured interviews to encourage the participant to share more information, and according to Bernard (2018) is the “key to successful interviewing.” Bernard offers seven different probes to encourage verbal response and to produce more information; silence, echo, uh-huh, tell-me-more, long question, leading, and baiting (Bernard, Research methods in anthropology: Qualitative and quantitative approaches, 2018). He also offers advice for interviewees that talk too much or have difficulty staying focused on the topic of the interview questions.

In order to make the next step of analysis, smooth and more efficient, interviews are typically recorded with an audio recording device; this also improves the accuracy and quality of the data.

### Analysis

The process of analyzing interviews for the qualitative case study begins after audio recordings have been transcribed into written form, and may take on a slightly different approach, but must be systematic and rigorous. Software programs are commercially available for efficiently and effectively coding qualitative data and are considered the norm, though other options include word processing, excel spreadsheets, or even manual methods. Moving from the interview transcript to a written report of findings involves a reduction of experience through finding themes, coding themes, and analyzing text (Bernard, Wutich, & Ryan, Analyzing qualitative data: systematic approaches, 2017). This process is often referred to as thematic content analysis. Coding is the process of labeling, tagging, or assigning a unit of meaning to the written text during a study (Miles & Huberman, 1994). During analysis, the researcher must attend and avoid embellishment and maintain integrity of the data by being cognizant of participant perspective and include direct relevant and important quotes.

There are two broad methods of reasoning in the approach to qualitative data analysis, deductive and inductive, and both are guided by originating research questions. It is commonplace for qualitative case study researchers to use a blend of both deductive and inductive methods within a study, and the decision on which method or combination of methods to use in coding text should be based on what is being studied or investigated. The deductive method involves a top-down approach where the researcher formulates a-priori coding schemes, often derived from existing theory found in a review of relevant literature. Once these coding schemes are established, the researcher applies them to the transcript, extracting and assigning chunks of data that align with a particular code. Alternatively, the inductive method involves a bottom-up approach where codes are derived from the data, emerging from the voice of the participant through the written words in the text. In this method codes are captured in vivo and are continually refined and enriched throughout the coding process (Bernard, Research methods in anthropology: Qualitative and quantitative approaches, 2018).

Another important consideration for the researcher in analyzing a qualitative case study is to recognize and address personal biases. To the extent possible, maintaining objectivity in analysis is an important component of all research, and in qualitative analysis this can be handled in a variety of ways, including, using multiple researchers to code and review data (inter rater reliability), verify themes or patterns through literature or other sources of information (like in triangulation), checking for alternative explanations of emerging themes, and finally, reviewing findings or conclusions with other researchers familiar with the topic of interest.

One common method of starting the process of analysis is to become familiar with the transcripts by carefully reading each transcript multiple times. This preliminary and iterative approach helps create overarching thoughts and intuitions about the data that may lead to patterns and themes. For deductive and inductive coding, the researcher develops a codebook, or compilation of codes, generally organized in categories or groups, that may include sub-codes within the structure. The difference between the two approaches is when the codebook is developed; in deductive, prior to analysis or a priori, and inductive, actively during the analysis . A finalized codebook should include detailed definitions with examples and non-examples and may be organized and displayed in a tabular format for ease of use during the coding process. Time and effort spent in developing a detailed codebook will make the coding process go smoothly during analysis.

Coding continues as an iterative process of taking chunks of written text and assigning them to codes. During this step, the researcher uses a neutral posture and focuses on the nuanced participant responses while engaging with the data to reduce and simplify the data (Seidman, 2006, Stake, 2006). The use of prior knowledge is blended with personal insights to build and verify theories and answer originating research questions. Once each case is coded, a summary is generated for each case and the researcher will complete a cross case summary which compares and contrasts accumulated themes across interview summaries, maintaining unique language through key words, quotes, or phrases, and ascribes new knowledge in the form of a written report, journal article, or conference proposal.

**Cost Considerations**

The semi-structured interview is expensive to develop, administer, and analyze; even with the use of automated software programs, careful consideration should be given to time, labor, and expertise. Well-designed research questions are essential in guiding the development of strong interview guide, however the process of writing high quality interview questions is challenging and requires practice. Administration activities include scheduling, preparing, and conducting the one-on-one interviews. Analysis requires extensive time from transcribing audio recordings, coding the interview, summarizing the interview, analyzing across cases, and generating themes and conclusions. For example, coding a one-hour interview in education may take 4-6 hours, depending on the content, next, summarizing one interview may take 3-4 hours, and completing a cross case analysis for 4 interviews may take up to 5 hours. Overall, based on 4 interviews, adding in time for a second reviewer to ensure reliability, an investment of nearly 40 hours is possible, before the analysis has even begun.

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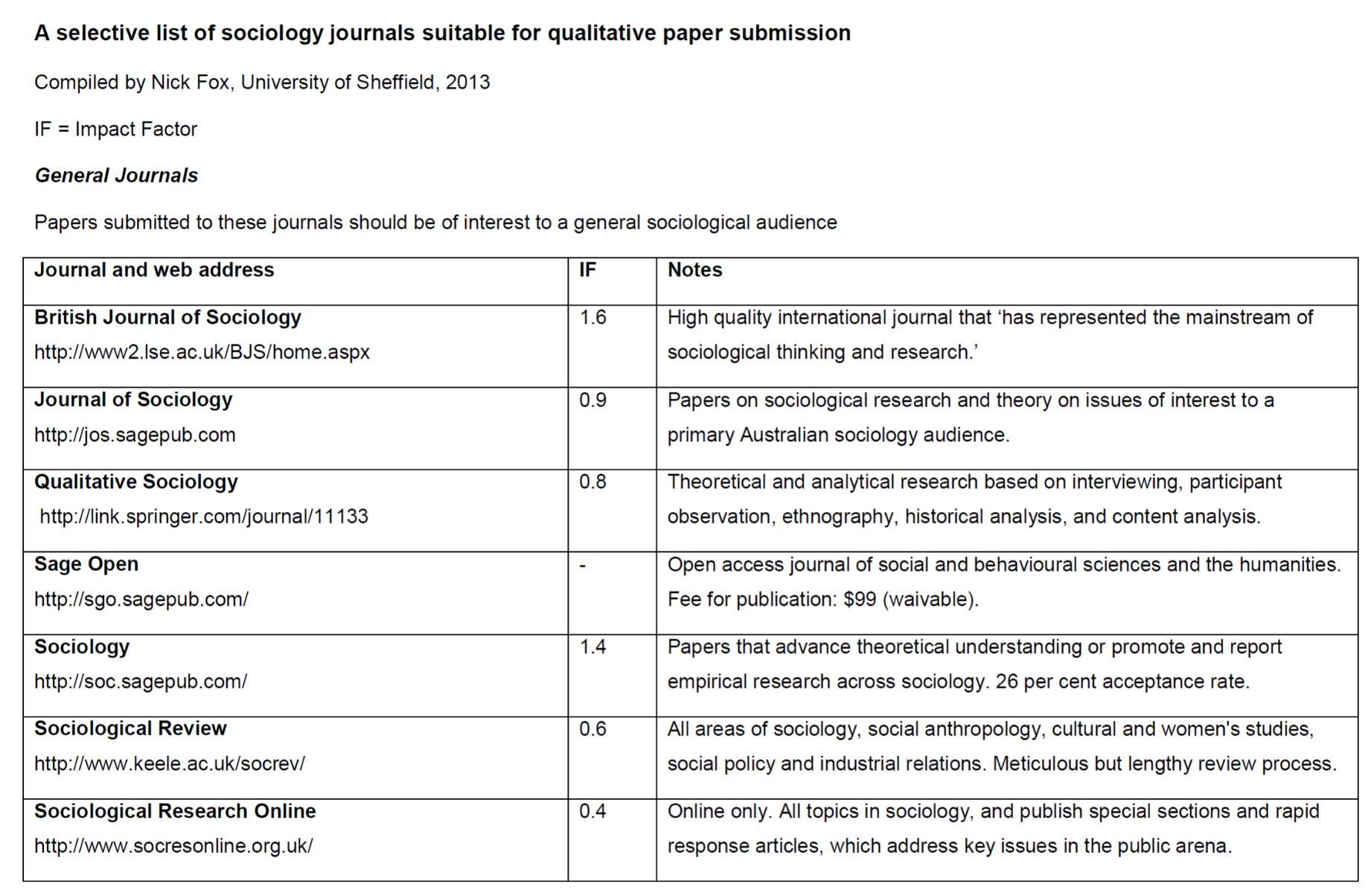
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**Appendix A**

