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With Scholarship and Practice in Mind: The Case Study as Research Method

Paula Dawidowicz, Walden University

Abstract: Unlike theoretical scholars who seek knowledge to expand humanity's (or their) understanding of a topic, scholar practitioners seek knowledge that can be applied to understand change or create change in a specific phenomenon. Although many of the same research methods can be used by both groups of educational scholars, and although research designs are determined in large part by the research questions being asked, several research methods can prove most useful for scholar practitioners examining learning environments. One, the case study, stands out as perhaps the most versatile and researcher-friendly, though. A case study, bounded by specific location and topic parameters, can allow solid evaluation of the workings of a program or teaching method. It can also allow consideration of specific needs to address an educational situation. This article briefly discusses the nature and purpose of different types of research, then focuses on the nature and usefulness of the case study methodology.

Keywords: case study, practitioner research, evaluation, program evaluation

The point of research for an instructional design scholar-practitioner is not to discover knowledge in a vacuum for the sake of having that knowledge. It is to gain knowledge to create change in instructional design—to develop better programs, identify student needs, determine the usefulness of an intervention, or understand some other aspect of instructional designs in relation to educational environments. As such, instructional design researchers attempt to gain a clear enough picture of what is occurring related to a specific design to be able to draw logical conclusions about instructional design activities.

For the scholar-practitioner determined to make the most of time and resources, a number of research methods are available, all of which offer both benefits and drawbacks. Quantitative research, examining specific relationships between variables or the causality of a specific effect through the testing of one or more hypotheses, has stood the test of time—but is most often used at the culmination of an in-depth re-

search agenda that has involved previous explanatory and exploratory research in some form. Survey research, sometimes used in quantitative analysis and sometimes used descriptively, allows researchers to gain a concept of the environment (people, circumstances) related to the phenomenon they are studying. Mixed methods research, a quantitative-qualitative research hybrid, allows researchers to gain generalizable and in-depth insight through analysis of a small portion of quantitative data and a small portion of qualitative data which, because of the design's nature, must address tightly focused questions about a narrowed aspect of a phenomenon in order for researchers to maintain design integrity. Qualitative research, limited in some researchers' eyes by its lack of generalizability, offers researchers the flexibility to gain exploratory and explanatory insights into numerous questions that could not be answered effectively using quantitative or mixed methods designs.

Why Choose a Case Study?

Among what are perceived as the qualitative research traditions, case study provides the most flexibility for researchers conducting everything from program evaluations to exploratory resource examinations to even people's perceptions of their needs in specific situations. To illustrate, case studies have been used to examine the development of cultures (Doron & Rehay, 2011), to explore effective reporting of results to audiences (Greer, 2010), and evaluate methods for teaching ethics to public health students (Howard, Lothen-Kline, & Boekeloo, 2004). For instructional design researchers in particular, Uribe, Klein, & Sullivan's (2003) examination of the application of transferability problems with computer-mediated collaborative learning provides a good example of the flexibility and usefulness of a case study design.

Concerns Regarding Case Studies

Case studies are often misunderstood and, because of those misunderstandings, undervalued and under used by researchers. Today's research landscape tends to be riddled with judgments about the superior value of different types of research methods (Miles & Huberman, 1994). The decades old debate of whether quantitative research—more objective and applicable to a larger population—is more useful than qualitative research—focused on rich description of processes and reasons for people's actions—has been joined by a third methodological design, mixed methods, which combines the two. In the heat of this three-philosophy research debate, it appears that the value of the versatile case study may have, for many, gotten lost (Plano Clark & Creswell, 2008). Ironically, Tashakkori and Teddlie (2010), prominent in the development and refinement of the mixed methods methodology, have stated that case studies are prime examples of the fact that mixed methods studies are not – in fact, should not be – placed on the design terrain but, instead, “entail or privilege a particular design” (p. 241). In either case, the research landscape continues to evolve, providing increased research design choices to researchers and, in the process, increasingly eclipsing the potential values of qualitative research and case studies in particular.

Case studies provide a venue for researchers to expand their understanding of phenomena and explain the phenomena's landscapes and development in specific bounded cases, including why different previously tried instructional designs did or did not work (Bouck, 2008). They also allow evaluations, summar-

ies, and conclusions about designs and interventions that can allow researchers to hone phenomena's useability and value in multiple situations (Hrabe, 1997). However, since case studies rely on inductive reasoning to gain transferability (not generalizability) from the examined data, researchers do not always value case study designs (Merriam, 2002; Stake, 2006; Yin, 2009).

This use of inductive reasoning, as well as several other factors, have influenced some researchers to avoid using the design for fear their own research results may be called into question. First, research consumers may be concerned that the researchers conducting a study may not have been meticulous, concerned instead with interpreting and presenting data skewed to their own purposes rather than objectively (Yin, 2009). Further, as previously mentioned, researchers using case studies gain in depth knowledge about a given bounded case because case studies are “immersions into one real-life scenario” (Tashakkori & Teddlie, 2010) and “particularizations” rather than “generalizable” (Stake, 2006). However, this lack of generalizability can be seen as a weakness rather than a strength by some researchers, creating frustration for them when they hope their studies' results will identify a “right” answer or conclusion (Yin, 2009). In addition, the length of time researchers may need to conduct a case study and the sheer size and complexity of data acquired can also concern researchers and dissuade them from considering conducting such studies valuable in relation to other research designs. Finally, the emphasis in education research on the establishment of causal relationships has created a blind spot in researchers who do not recognize that case study research can fill gaps in understanding about reasons for causality that may be unexplainable through an experimental or quasi-experimental study (Yin 2009).

Benefits of Case Studies

One value of case studies is that, although often considered a qualitative research design, such studies can actually involve the use of either quantitative or qualitative data or both. Although quantitative data are often analyzed in case studies only as descriptive statistics, that is not always the case and certainly does not have to be the case. With that kind of flexibility, researchers can adjust case studies to effectively address a myriad of research situations. Quantitative data sources—designed to include raw statistical comparisons rather than specific predictability relation-

ships—can provide clear snapshots into the numbers related to results—results teachers, a school, or a district achieve with incorporation of a specific design aspect into the curriculum (Showler, 2000). On the flip side, qualitative data sources—designed to gain insights into why, how, or under what circumstances a specific event occurs in relation to a phenomenon—can provide insights into under what circumstances those results will likely occur again (Küçük & Çepni, 2005). Studies that combine both aspects, when the questions to be answered require it, can provide comprehensive insights into both the what and the how, when, where, or why (Teddle & Tashakkori, 2009). In addition, this use of broad, multiple data sources that is a hallmark of qualitative research designs allows researchers to gain in-depth knowledge about a given bounded case—its circumstances, particulars, results, and impact (Merriam & Associates, 2002; Stake, 2006).

Perhaps equally valuable is the ability to conduct comparative and multiple case studies, as described here. By combining data collected from several locations—several classrooms or several schools, for example—researchers can gain a clearer picture of a phenomenon [loosely equated to what Stake (2006) refers to as a quintain]. Because this type of study involves a larger total amount of data, as well as illustrations of how the phenomenon occurs in different cases, the total picture developed provides greater insight into the utilization variations that occur so that the overall results are more transferable (Stake, 2006; Yin, 2009). Even better, researchers can build studies to specifically compare aspects of implementation of a program or process in two different locations to identify, through comparison and contrast, the strengths and weaknesses of different aspects of the program and how it is implemented in different circumstances. A good example of such a use is Zolla's (n.d.) study examining different information technology diffusion implementation methods.

That said, if someone wrote a commercial about case studies, it could sound like television commercials for the “incredible, edible” egg—multiple uses and an unstoppable tool in the researcher arsenal. Case studies can be used to define both the importance and impact of immediate interactions between different groups, roles, instructional designs, or other factors in specific situations, depending on study research questions. This is in part because case studies provide a structure for unobtrusive but effective researcher-

negotiated participation in a specific community to allow optimal data collection. They also provide researchers the flexibility, when appropriate, to take advantage of hindsight—analyzing the effects of the passage of time—and applying those data to the present (Guba, 1990; Merriam, 2002).

Case studies yield thick, rich descriptions of the phenomena being researched, highlighting in the process the many complexities of a situation and the factors that can contribute to those complexities (Howard, Lothen-Kline, & Boekeloo, 2003). As a result, researchers can identify the influence individuals have on issues, including differences in attitude and how differing attitudes may have impacted overall results. Using a wide variety of data sources, among which can be test scores, observations, interviews, and newspaper articles, researchers using a case study design can gain a comprehensive view of deep factors involved in the phenomenon they are studying (Merriam, 1988; Yin, 2009).

Case Study Approaches in Education

Often researchers attempt to define case study research based on what they perceive as the design's uniqueness. However, case studies should not be defined by the methods employed but, rather, by the questions a researcher asks and the research gap researchers are attempting to fill. Case studies' findings are more concrete, more contextual, more developed by readers' interpretations, and based more on reference populations as determined by readers (Merriam, 1988; Nachmias & Nachmias, 1976).

Case studies have certain essential properties. Along with being particularistic and inductive, they are also descriptive and heuristic. They are almost never used to test theories but, instead, to build case study propositions (Yin, 2009). Proposition development, begun as researchers inductively develop the direction they take in a study (rather than deductively presupposing a hypothesis and testing it during the study), continues throughout the study and is completed only when final study conclusions are drawn (Guba, 1990; Merriam, 1988). They emphasize the process-product approach, the emphasis of illustrations or exemplars, compromises and fusions to combat the differing constraints of both generalizability and case specificism, and a series of contextualizations (Fowler, 1988; Guba & Lincoln, 1988; Hammersley, 1995; Hedrick, Bickman & Rog, 1993).

They can contextualize to accommodate political and social contexts and value-free understanding of the social world, control, social engineering, to advocate the underprivileged, and to affect given processes and human interactions by heightening their awareness of individuals. They contextualize to either verify data gathered by review or input from the individuals being studied, to gain subjects' buy-in on changes suggested by study conclusions through periodic subject input and review, and to create an educational revolution that changes, through collective action, the nature of education itself (Firestone; Fowler, 1988; Guba & Lincoln, 1988; Hammersley, 1995; Hedrick, Bickman & Rog, 1993).

A Moment for Epistemology

A number of epistemologies (research perspectives) commonly drive case studies. Some case studies are quantitative (Yin, 2009) and, as a result, utilize straightforward epistemologies. The majority of case studies, qualitative, are so impacted by researcher epistemologies that understanding the perspectives researchers conducting case studies might apply proves important. Four good examples are provided here briefly for consideration. Postpositivism can be thought of as social engineering, designed to create an appropriate or effective societal structure where reality is what works or what can be verified, knowledge is small, and truth is a relative idea. Constructivism can be thought of as storytelling, where researchers attempt to paint a picture of what life is about—a social and multiple construct where time does not stop and knowledge is drawn from a consensus of individual perceptions, meanings, and underlying values in relation to a specific phenomenon. Critical theory can be thought of as social activism, where researchers attempt to inspire members of underprivileged or disenfranchised groups to work to affect change and strive themselves to both discover knowledge and enact what is good or right (Guba, 1990).

Most education case studies use constructivist frameworks, attempting to portray and interpret the intersubjective meanings used in culture, language, symbols, and human organizations. They are nonfoundational, growing from the concerns of the paradigm represented in the phenomenon they are investigating and present multiple, holistic, competing, and often conflictual realities of multiple stakeholders and research participants rather than using abstraction (reduction) or approximation (modeling) of a single

reality. Researchers conduct analysis using axiomatic criteria (displaying resonance with constructivist inquiry), rhetorical criteria (relating to the form and structure, or presentational characteristics, of the written document issuing from the inquiry), or action criteria (demonstrating the case study's potential to evoke and facilitate action from the readers). These criteria serve either as empowering for individuals (providing a structure for the analysis) or as transferability criteria (Guba & Lincoln, 1988; Merriam, 1988). The resulting research conclusions can either be grand, mid-range, or substantive. Grand conclusions attempt to explain large categories of phenomena and are most common in the natural sciences. Midrange conclusions address one conceptually abstracted area of human experience and emphasize an explicit data base as their foundation. Substantive conclusions are restricted to particular settings, groups, times, populations, or problems (Yin, 2009; Merriam, 2002).

Conducting a Case Study

Given its value, then, a quick review of the process of developing case studies is useful. Case studies are by definition studies that are bounded to a specific location and topic (phenomenon). When researchers conduct case studies, they intensively examine and analyze specific units, individuals, or bounded systems in specific locations to gain information that identifies (exploratory) and explains (explanatory) specific issues and problems. A case in a case study does not have to be just a specific, bounded location, though. A case could also be a specific phenomenon (experience, event, or even time of year). For researchers, this can prove confusing during the design process, particularly as researchers may read accounts of nonlocation-related "cases" described instead as "phenomena." Regardless of the term used to describe the case, however, case studies themselves are limited to specific geographic locations with identifiable boundaries because they are peculiarity-seeking rather than generality-seeking (Stake, 2006).

Study Questions and Locations

When considering conducting a case study, researchers need to pay close attention to the questions their studies are designed to answer. Case study questions, even if the case studies use quantitative data, should not be designed to identify causality or correlations between two or more variables treated as variables. Instead, since they are designed to identify the nature of the factors involved in the phenomenon being

studied inside the bounded case, a narrow, two-factor examination should be replaced with an in-depth consideration of the factors that present themselves. So, as researchers develop their overall research questions, serious consideration about whether the research problem being examined yields questions appropriate for exploring or explaining the what, how, why, or when of a case study is necessary. Further, a clear examination of their questions will help researchers decide whether or not they should use a single, multiple, or comparative design for their case studies (Stake, 2006; Yin, 2009).

As mentioned previously, case studies can be used to examine either single or multiple locations. In basic exploratory studies, often one location is selected. Depending on the size of the instructional tool or method developed, an instructional design researcher might invoke a single case method (one location) to get a strong exploratory handle on the impact of that tool in one location before considering expanding its use to other locations. The *transferable* results, conclusions practitioners may draw when their own bounded locations are similar enough to the described bounded case (location and phenomenon) studied so that practitioners can reasonably expect similar research results were the study to be conducted in their location, as well (Merriam, 2002; Stake, 2006; Yin, 2009).

However, if an instructional tool or method researchers wish to study is already in use, researchers might choose to examine multiple locations (multiple case method) in order to get a more “instrumental” perspective (Stake, 2006). This type of study could examine one of two different types of scenarios. In the first type of study, the expectation is that all of the locations, for example, use an instructional design in the same manner—this is a simple multiple case study. In this type of study, if data bear out the commonality of outcomes, then the thick description of the specific locations and circumstances supplies information about the number of circumstances in which *x* result may be expected to occur if enough other factors are similar. In the second type of study, the expectation is that some locations are using the design in one manner, while others are using it differently. In this type of study, a comparative case method, the expectation is that the thick description provided in the report or article will help practitioners identify to which type of circumstances (case) their location is closer. As a result practitioners might better identify how to apply study results.

Case Study Options

Case studies normally incorporate face-to-face interaction so they can faithfully represent the often multiple, constructed, conflicting realities researchers may encounter due to the humanistic nature of qualitative inquiry. They also emphasize maintaining respondents’ privacy and anonymity while utilizing extensive word-for-word, natural-language quotations (Guba & Lincoln, 1989; Merriam, 1988).

Case studies can focus on everything from individuals to institutions. For example, researchers use the “One-shot Case Study” design to observe a single group at a specific point in time for exploratory, or information-gathering, studies only. Normally, they observe their sample group following a specific event expected to elicit strong response. Researchers might use such studies following the evolution of an instructional program’s use, the introduction of a radical design into a classroom, or when exposing a group of students to a potentially revolutionary collaborative process. Other researchers may focus on specific aspects of a case by looking at the culture’s interaction with the phenomenon (ethnographic case study) by conducting a semiotic analysis (a unified approach that examines surface manifestations and their underlying meanings), a dramaturgical analysis (an analysis based on the content of drama), or a deconstruction (a search for multiple meanings implicit in such things as texts, conversations, or events). Historical case study researchers may focus on developing descriptions of institutions, designs, and practices as they have evolved over time (historical). Psychological case studies examine educational problems focused on the individual, which can prove particularly useful when examining aspects of human behavior, like individuals’ learning or behavior related to the use of twitter in a classroom. Sociological case study researchers explore the constructs of society and socialization related to some phenomenon like social networking software, considering demographics, people’s roles in that social life, and the community and other social institutions, and related social problems. Phenomenological case studies look for core meanings and understandings through those shared experiences, compare and analyze the experiences of different people to identify the essences of phenomena, and seek to gain some sense of defining characteristics of phenomena like collaborative instruction (Feldman, 1995; Merriam, 2002; Nachmias & Nachmias, 1966; Pedhazur & Schmelkin, 1991; Tashakkori & Teddlie, 2008; Yin, 2009).

Researchers collect different types of data based on the goal of their case study research. Typical data sources for each case study construction are discussed here. First, however, it is important to quickly consider the number of data sources required to conduct a strong case study. Based on the nature of the data sources used—normally qualitative or a combination of qualitative and quantitative sources—researchers using a case study design utilize source triangulation, which means collection and analysis of no less than three and, based on current case study trends, closer to six data sources (Yin, 2009). For example, researchers examining the use of twitter for students to share “aha” moments in a classroom might conduct interviews with teachers in different grades, if possible, considering each group of teachers a different data source. They might consider archival records for each of the grades; interview teachers as a data source; interview administrators as a data source; or review students’ twitter records, journals they ask the students to keep, or extensive observations of each class as a data source. Each group of records for each class could serve as a data source.

Data sources useful for each type of case study need to be considered, as well. Ethnographic case study researchers most often use observations and groups of interviews or focus groups with relevant participant groups (teachers, administrators, students, or parents, for example). Historical case study researchers examine primary source materials (interviews, focus groups, journals, archival records about the period of time), often amassing hundreds of pages of data to analyze. Psychological case study researchers employ observations, interviews, archival records, and measurement techniques utilized by psychologists. Phenomenological study researchers use data sources that provide the participants’ own words—journals answering specific questions asked by the researchers, interviews, focus groups, essays—all of these sources answering specific questions being asked. Sometimes archival records, like photographs, drawings, or other materials are used to stimulate discussion (Merriam, 1988; Yin, 1994). (Feldman, 1995; Merriam, 1988; Merriam, 2002; Yin, 2009)

Study data collection can occur sequentially or concurrently (Stake, 2006; Yin, 2009). For example, if researchers determine there is a gap in knowledge surrounding whether the use of cell phones in the classroom could facilitate students conducting instant internet research and networking to facilitate

enhanced learning, they consider what methodology would work best for them. They determine they need to conduct an exploratory study to see whether cell phone use is actually a viable alternative. Since they discover they cannot conduct the study in local public school systems, they decide they will examine cell phone usage in a Montessori high school in their area using a case study. They train classroom facilitators (Montessori classroom teacher equivalents) on potential uses of cell phones, and brief students on how they can use the cell phones after they have participating students complete surveys about how they believe they might use cell phones in their classrooms. Following that, for one month they conduct two-hour long classroom observations twice a week at random times. Concurrently, they have students keep a journal about their use of cell phones and the types of activities for which they used them. After collecting all these data, the researchers analyze the information, identify which questions they would like to ask the students and facilitators based on the analysis, and conduct an interview with each student and facilitator to answer those questions. They conduct one more analysis and, if they still need more information, they conduct final focus groups where researchers share with students and facilitators a number of their conclusions and the patterns they identified, getting feedback on their conclusions. Having collected this extensive data, they draw final conclusions about students’ use of cell phones to expand learning in Montessori high schools and write the report.

In another example, researchers plan to consider the use of blogs and Skype to create collaboration between schools in different parts of the country or in other countries. They identify four schools—two in the Northeastern United States and two in the Southwestern United States. The four schools are sister schools, networking sixth grade social studies classes with each other through the use of individual student-created blogs and classes’ weekly small group activities. Two schools, one in the Northeast and one in the Southwest, are Montessori schools, while the other two use a traditional classroom structure. This could pose particular problems for researchers, but it does not need to. Researchers in this case begin by conducting interviews by Skype (with a phone back up) with teachers and administrators in each of the four classrooms in each location. After that, they conduct reviews of student blogs for a one-month period and of their Skype record interviews, each serving as a differ-

ent data source, categorizing and analyzing them by type of classroom structure and, also, by part of the country. They follow that with a set of questionnaires students in all locations complete that ask relevant questions about the blogging and interaction experience. After one more analysis, they present their findings via videoconference to students in class-sized focus groups and get one last round of data as they receive feedback on the conclusions they have drawn. Finally, they write a report on their study and its results.

One last important consideration when conducting qualitative research is the assurance of study integrity and trustworthiness, just as validity and reliability are essential in quantitative research. However, the methods for ensuring research integrity and trustworthiness are different for qualitative research. Feedback from study participants in focus groups, for example, provides peer reviews for study conclusions and increases study accuracy. Intersubjectivity (input from numerous individuals/subjects) proves important to allow greater representation of multiple perspectives, which increases study trustworthiness (representation of a number of different inputs) and, as a result, study validity. Finally, focusing specifically on answering the research questions, ensuring that all data sources are the best choices to answer those questions, researchers ensure research reliability (Golafshani, 2003; Howard, Lothen-Kline, & Boekeloo, 2004).

Conclusion

Researcher practitioners, particularly instructional design researcher practitioners, straddle both the worlds of the theoretical and the practical. Examining learning needs and testing the impact of designs, such practitioners need a clear understanding of what is occurring with the design or instructional methods they are examining. As such, they often need research designs that allow them to gain in depth understanding of not just the what, but also the how, when, why, or who of a phenomenon. Although a number of study designs could be tailored to serve that purpose, case studies often provide the best source. This article has provided insights into how to use a case study design, the key factors to consider when developing one, and examples of the use of a case study. Finally, it provided factors to consider in order to ensure the design's integrity. Case studies can be useful tools in the researcher practitioner arsenal.

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