Making a Case for a Blended Approach: The Need for the Design-Based Case Study

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ABSTRACT
Design-based case studies address research questions that involve instructional innovations within a bounded system. This blend of case study and design-based research provides a systematic approach to examining instructional innovations that are bounded by perspective, context, and time. Design-based case studies provide a framework for engaging in iterative cycles of data collection and analysis that are used to determine how, why, and whether the goals of an instructional innovation have been met. The authors note common concerns surrounding case study and design-based research and how design-based case studies address these concerns by building on the strengths of both approaches.

KEYWORDS
Case Study Research, Design-Based Case Study, Design-Based Research, Instruction, Qualitative, Research Methods

INTRODUCTION
Qualitative research methods are often disparaged as being less rigorous and credible than quantitative methods (Myers, 2000). This old, and still present, perspective may lead some researchers to choose research questions that skew toward quantitative approaches. Case study researchers and other qualitative researchers have moved to counteract these claims against credibility by codifying procedures and systematic approaches for collecting, storing, and analyzing data (Stake, 2005, Yin, 2014). Design-based Research (DBR), a relatively new research method, falls under similar scrutiny; therefore, DBR proponents have also been working to provide a systematic frame for evaluating instructional innovations that enhance credibility (Reinking & Bradley, 2008).

This article advocates a blend of case study (CS) and design-based (DBR) research that can address common concerns about each approach. By discussing each method separately and addressing the claims and limits of each, we propose a blended method that provides methodological synergy toward a more robust approach. The proposed hybrid, Design-based Case Study (DbCS), is suggested as an approach for addressing research questions that involve instructional innovations within a bounded system. We assert that there is a place for an applied method that has the potential to make substantial claims that are customizable, if not generalizable in the clinical view. This is particularly critical in classroom and community research where teachers, students, and context variables can be confounding.

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TENETS OF DESIGN-BASE CASE STUDY

To begin to understand the nature of Design-based Case Study approach (DbCS), an introduction to the intricacies of design-based research and case study research are needed. The following sections will provide an overview of these approaches as a prelude to introducing DbCS.

Design-Based Research

Over the past decade, multiple researchers have used design-based research (DBR) to study instructional innovations in the messy contexts of classrooms. One group of early career researchers received funding from the Spencer Foundation to advance the method (see Design-based Research Collective, 2003). Cobb and colleagues (2003) describe some crosscutting features of design-based research in those early years: (1) a limited number of settings; (2) educational improvement through innovation; (3) theory testing and generation; (4) iterative refinement, and (5) the importance of theory to this iterative refinement. Later, Gravemeijer and Cobb (2006) proposed a three-phase framework for conducting design-based research. Phase I involved developing a contextual description and baseline of instructional needs so that a theory-based intervention could be conjectured. In Phase II, the ‘conjectured’ intervention to address the instructional needs is tested in daily microcycles and modified as needed. The iterative analysis of these small cycles would then be used to determine emerging patterns of what is learned about the intervention and how theory is being informed (Phase III). While the research was conducted in a variety of domains and in several countries (see Aker, Gravemeijer, McKenney, & Nieveen, 2006), the various articles and book chapters lacked unity in terms of terminology or procedure.

In 2008, Reinking and Bradley published a volume in a research series sponsored by the National Conference on Research in Language and Literacy (NCRLL). They provide a framework that suggests both terms and procedures for proposing and conducting a design-based experiment that serves as the basis of the design-based case study approach presented in this current report. Their framework focuses on six questions:

1. What is the pedagogical goal to be investigated, why is that goal valued and important, and what theory and previous empirical work speak to accomplishing that goal instructionally?
2. What intervention, consistent with a guiding theory, has the potential to achieve the pedagogical goal and why?
3. What factors enhance or inhibit the effectiveness, efficiency, and appeal of the intervention in regard to achieving the set pedagogical goal?
4. How can the intervention be modified to achieve the pedagogical goal more effectively and efficiently and in a way that is appealing and engaging to all stakeholders?
5. What unanticipated positive and negative effects does the intervention produce?
6. Has the instructional environment changed as a result of the intervention (Reinking & Bradley, 2008, p. 72-77).

The foremost contribution of the Reinking and Bradley volume was the naming of terms for discussing elements of the approach that could be used to discuss how design-experiments were conceived and conducted in research. In particular, the terms pedagogical goal, enhancing and inhibiting factors, and modifications are helpful in delineating how design-experiments can gather and analyze data and how the effectiveness of interventions can be determined. Our conceptualization of design-based case studies makes use of these terms to provide procedural
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