A thematic analysis of the most highly cited scholarship in the first decade of blended learning research

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ABSTRACT

Blended learning, which combines face-to-face and online learning modalities, is a heterogeneous and steadily developing area of design and inquiry. With the expansion and maturation of blended learning research, voices enter the conversation in increasing numbers and diversity. This study continues the work begun by Halverson, Graham, Spring, and Drysdale (2012), which determined the most frequently cited books, edited book chapters, and articles on blended learning, as well as the journals in which these highly cited articles appeared. After finding where the conversations about blended learning were happening and which scholars were at the forefront of these conversations, we now look at what the conversations on blended learning are really about. Using thematic analysis, we uncover the methodologies, research questions, and theoretical frameworks in this scholarship, and then discuss the implications of these findings for blended learning research. In doing so, we promote further understanding of the center of this emerging area of study.

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1. Introduction

Blended learning is rapidly emerging as a domain of practice and of research. Across discipline and context, at individual instructor and institution levels, educators are experimenting with blended learning. Research in this domain is not limited by field or discipline; as a result, it is divergent, lacking a center point. This lack of cohesion raises a question: Where are the conversations about blended learning being held, and what are they really about?

Halverson, Graham, Spring, and Drysdale (2012) began searching for the center of this emerging area of study by finding the most impactful scholarship and research on blended learning as measured by citations. Using Harzing's (2011) Publish or Perish software, which retrieves and calculates academic citations from Google Scholar, they determined the most frequently cited books, edited book chapters, and articles on the subject of blended learning, as well as the journals in which the highly cited articles appeared, during the years 2000–2011. Their research provided a useful starting point for determining works with significant currency, resonance, timeliness, and influence. Their findings helped determine where the conversations about blended learning were happening and which scholars were at the forefront of these conversations.

Now we delve deeper, adopting the techniques of thematic analysis to better understand what is being discussed in the most impactful publications of the domain. Our current research analyzes the 60 most impactful articles and 25 most impactful book chapters to determine what methodologies were being used, which research questions were being addressed, and what theoretical frameworks were being referenced. We believe that additional concrete evidence about research questions, methodologies, and theoretical frameworks will improve not only future research, but also future practice of blended learning. For example, a better understanding of the theoretical frameworks being utilized in blended learning scholarship can strengthen the quality of research as well as the cohesion between research and practice.

This interest in the substance of the most impactful conversations in blended learning research will be investigated using these research questions:

Methodological trends
1. What methodologies are being employed by the top-cited scholars?

Topical trends
2. What is the range and frequency of topics being explored in blended learning research?
3. What theories do these scholars draw on to support their study of blended learning?

In this article we begin with a brief review of the methods used in Halverson et al. (2012) to identify our sample of the most impactful research on blended learning. Next we discuss the methods used for our

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thematic analysis. We then present the results of our analysis and finally discuss the implications for the future of research on blended learning.

2. Methods

2.1. Overview

In Halverson et al. (2012) we determined whose work was most frequently cited in other scholarship and in what journals and books these publications appeared.

The current study follows up on our previous research, providing a detailed thematic analysis of the content of the top-cited articles (Appendices A and B) and book chapters (Appendix C), in order to address the research questions of our study. Answering these questions required manuscript coding, described in greater detail below.

2.2. Search procedure and selection criteria

Halverson et al. (2012) used Harzing's (2011) Publish or Perish, a software program which retrieves and tabulates academic citations from Google Scholar, to determine which publications on the subject of blended learning have been most frequently cited in other academic publications. We searched using phrases about blended or hybrid learning and initially came up with more than 26,000 retrievals. However, we discarded those findings which did not fit in our definition of blended learning—the combination of face-to-face instruction with computer-mediated instruction (Graham, 2006). We also limited our search to publications in English and to the years 2000 through 2011; no applicable publications were listed in Publish or Perish prior to the year 2000.

We then selected the most frequently cited publications for analysis in our study—the top 50 articles, the top 25 book chapters, and the top 10 books. Because our system favored older publications that have had more time to accrue citations, we also included any 2010 publications cited at least 10 times, any 2009 publications cited at least 15 times, any 2008 publications cited at least 20 times, and any 2007 publications cited at least 25 times; this brought 12 newer articles to our attention. Two of these younger publications (Bernard et al., 2009; Hoic-Bozic, Mornar, & Boticki, 2009) had already ascended to the top 50 list without this additional consideration, leaving us with a total of 60 top-cited articles.

Halverson et al. (2012) quantified the impact of these articles, gathered information on the contributing authors and the journals publishing these works, and measured the context areas of these publications. We found that higher education is the context of most top-cited publications on blended learning, with 66.1% of the top-cited publications focused solely on the higher education setting. Nearly 20% focused on all settings, 12.5% focused on corporate/organizational training, and only two publications (1.8%) focused on the K–12 arena. For additional information and for charts and visuals, see Halverson et al. (2012).

2.3. Manuscript coding: Thematic analysis of top-cited works

The current research follows up on Halverson et al. (2012) by carrying out a thematic analysis of the 60 articles and 25 edited book chapters most cited in the domain of blended learning. We coded the articles in the following areas: methodologies (data analysis techniques), agenda (research questions or purpose statements), and theoretical frameworks. Two trained researchers independently categorized methodological trends for each publication. Any disagreements were then resolved between them, with assistance from a third coder when necessary. Then each researcher drew from the coding scheme used by Drysdale, Graham, Spring, and Halverson (2013) to open-code topical trends (research questions and theoretical frameworks). Both researchers reviewed and readjusted open-coding data until they agreed on categories and placements.

2.3.1. Categories for methodological trends

We categorized documents into empirical and non-empirical methods of data analysis. Empirical studies were further subdivided into descriptive statistics, inferential statistics, and qualitative analysis; non-empirical studies were sorted into explanation/literature review and model/theoretical treatment (see Table 1). We coded only those methodologies that contributed significantly to the analyses and conclusions of the research, but we did allow publications to be coded in more than one subcategory (the dominant not simply "trumping" the weaker). Publications which utilized more than one type of data analysis were coded *combined*. We also noted those publications which used empirical research to develop or apply a model or theoretical framework, considering this the "gold star" to which blended learning research should aspire.

2.3.2. Coding for topical trends—Research questions and purpose statements

We extracted all research questions and/or purpose statements from the top-cited articles and book chapters in order to determine topical trends. We then utilized the coding system developed by Drysdale et al. (2013), who coded the research questions from 205 doctoral dissertations and master's theses in the domain of blended learning based on the open-coding pattern suggested by Emerson, Fretz, and Shaw (1995). In round one, we coded the research questions and/or purpose statements from the chosen publications into the pre-existing categories from Drysdale et al. (2013). Questions which did not seem to fit into pre-existing categories were set aside and uncertainties about fit were noted. In round two, the two researchers discussed uncategorized questions and then grouped into new categories that were distinctive and informative. Additionally, questions with uncertainties about fit for a particular category were resolved through group negotiation. In the final round, we made slight changes to the categorization schema from Drysdale et al. (2013) to match our present findings. Subcategories from Drysdale et al. that were not represented among the selected publications were dropped; a new category, *exploration*, was created to capture the numerous articles focused on exploring and defining the domain of blended learning research.

2.3.3. Coding for topical trends—Theoretical frameworks

Articles in the models/theoretical (non-empirical) category sought to prove, disprove, or build on a particular theory. We extracted those theories which served as a basis for research and/or argumentation in the publication, but not those which were merely cited for background or context. In addition, we used Gibbons and Bunderson's (2005) *explore*, *explain*, *design*, a framework that categorizes research based on the purpose of the inquiry, in order to categorize and analyze the types of models and theories used in blended learning research.

3. Findings and discussion

In this section we discuss the methodological and topical trends in the top-cited publications on blended learning. Understanding these trends provides a clearer sense of what has been important in the first decade of blended learning research and may improve future research by strengthening awareness of existing gaps in the knowledge base. Moreover, this understanding can also improve the practice of blended learning. Finally, we hope that a better understanding of the theoretical frameworks being utilized in blended learning scholarship can provide a common underpinning to research efforts in this domain.

3.1. Methodological trends

Our findings on data analysis methods are presented in Fig. 1. Recall that we coded some publications in more than one subcategory, and thus totals may be more than 85, and percentages may add up to more than 100%. Overall categories were recorded as follows: 43 publications (51%) used empirical methods only, 27 (32%) used non-