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Patterns in Impact, Publication and Themes in International Blended Learning

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Master of Science

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ABSTRACT

Patterns in Impact, Publication and Themes in International Blended Learning

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This research has found that the field of international blended learning (BL) is prepared for stronger communication and collaboration. Collaboration is currently limited, and regions vary greatly in terms of citations. However, BL is growing worldwide and each region has much to offer to the community. Greater collaboration among researchers and practitioners can be profitable regardless of location.

In the first article the authors compared the top cited BL articles to understand which articles from each region are the most cited, how the regions compare in terms of citations and which journals publish these highly cited articles. The authors used this data to construct a broad overview of the field as a whole and submit is as partial fulfillment of the literature review requirement. This research was designed by both authors and carried out by the first author with advice from the second author.

In the second article the authors delved deeper into the top articles to discover and compare the topics and themes of the top articles on BL from different regions of the world. The authors examined methodological patterns, learner type, level of blend, terms for blending, and research questions in order to understand the research practices and topics of interest within the BL community. This article is also submitted as partial fulfillment of the literature review requirement for a master's degree in Instructional Psychology and Technology. This research was designed by both authors and carried out by the first author with advice from the second author.

In the third article the authors sought to take a snapshot of the present state of blended learning. The authors drew conclusions from survey responses and interviews with current blended learning researchers and practitioners focused on BL around the world. This research was designed by both authors and carried out by the first author with advice from the second author and assistance from the third author. The first author conducted all interviews and made final decisions on coding and analysis, with input from the other authors.

Keywords: Blended learning, hybrid learning, international, literature review, citations, qualitative

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To my mentor and chair Dr. Charles Graham for guiding and encouraging me through every step of this process and his confidence in me from the beginning.

And to my husband Austin for ensuring that I never gave up.

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DESCRIPTION OF RESEARCH AGENDA AND STRUCTURE OF THE THESIS

The purpose of this research was to understand the status of international research related to blended learning (BL). In Article 1 we examined citation and publication patterns of the most highly cited BL articles worldwide. Article 2 built upon Article 1 and explored the topics and themes of these top articles. Finally, Article 3 presents a deeper and more current view of BL contexts around the world. Articles 1 and 2 have been submitted to journals for consideration and Article 3 will soon follow.

Article 1

In the first article—*Patterns in Impact and Publication in International Blended Learning*—we determined the ten most cited articles on BL in each of seven regions. We conducted a social network analysis on the top articles and the works they referenced and listed the journals that published top international BL articles most frequently.

Overall we found a large disparity in citation patterns of BL research around the world as well as less collaboration both between authors in different regions and those in similar locales than we anticipated. This isolation is occurring despite active BL implementation and growth around the world. We concluded the article by recommending future research into more linguistically removed areas and common themes across regions.

Article 2

In the second article—*Thematic Patterns in Blended Learning*—we analyzed the topics and themes of the top articles including methodological patterns, learner type, level of blend, terms for blending, and research questions. We compared regions in terms of these topics and found that they overlap greatly in each. This agreement suggests that neither research processes nor topics of interest obstruct researchers and practitioners around the world from benefiting

from one another's work or collaborating. We recommended future research include more in-depth analysis of each region and an updated view of the field as seen by researchers and practitioners.

Article 3

In the final article, *The Current Landscape of International Blended Learning,* we contacted top researchers and practitioners and gathered quantitative survey and qualitative interview data concerning their experiences, opinions, and predictions about international BL. We found that while each region has it's own unique attributes they share many experiences around BL adoption, regional adaptations, reasons for blending, and hopes for the future. As individuals worldwide strive to improve their own research and practice they have developed various approaches to common BL issues that can be applied and adapted by others regardless of context. We conclude by suggesting future research explore regions in further depth, solutions to obstructions to global cooperation, and regional characteristics that might lend themselves to efficient transfer.

ARTICLE 1: Patterns in Impact and Publication in International Blended Learning[1]

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[1] This article is presented as it was submitted to the International Review of Research in Open and Distance Learning and is formatted accordingly.

Abstract

The field of international blended learning (BL) is prepared for stronger communication and collaboration. Collaboration is currently limited, and regions vary greatly in terms of citations. However, BL is growing worldwide and each region has much to offer to the community. The goal of this research is to understand which articles from each region are the most cited, how the regions compare in terms of citations and which journals publish these highly cited articles in order to construct a broad overview of the field as a whole. We hope that a stronger awareness of BL around the globe will help facilitate connections among blended learning researchers and practitioners worldwide, encouraging efficiency and mutual improvement within the BL community.

Keywords: Blended Learning; International; Citation; Literature Review.

Introduction

Research conducted in 2012 by Halverson, Graham, Spring, and Drysdale located the most frequently cited articles discussing blended learning (BL), many of which were familiar to American researchers. We noticed that although several publications were connected to regions other than North America, only four of the articles, less than 5%, addressed international issues (Halverson et al., 2012). Another project exploring theses and dissertations found only two (1.0%) with an international focus (Halverson et al., 2012). As the world extends considerably beyond North America, we hoped that the world of BL extended further that these initial results might suggest. We sought to learn more about BL outside of North America and benefit from advances by researchers worldwide. We focused on the most frequently cited articles on BL in each region of the world. Our goal is to understand which articles from each region are the most cited, how the regions compare in terms of citations and which journals publish these highly cited articles in order to construct a broad overview of the field as a whole. We hope that a stronger awareness of BL around the globe will help facilitate connections among BL researchers and practitioners worldwide, encouraging efficiency and mutual improvement within the community.

Literature Review

Research conducted in 2012 by Halverson, Graham, Spring, and Drysdale located the most frequently cited articles discussing blended learning (BL), many of which were familiar to us as American researchers. Among these preeminent publications we noticed that although several were connected to regions other than North America, only four of the articles, less than 5%, addressed international issues (Halverson et al., 2012). A concurrent project exploring BL in theses and dissertations found only two (1.0%) with an international focus (Drysdale, Graham,

Spring & Halverson, 2013. As the world extends considerably beyond North America, we hoped that the world of blended learning extended further that these initial results might suggest. In the current study we focused our search on the most frequently cited articles on blended learning in each region of the world. One goal of this research is to facilitate connections among blended learning researchers and practitioners worldwide, encouraging efficiency and mutual improvement within the field.

In 2006, Bonk, Kim, and Zeng surveyed instructors and administrators at institutions of higher education primarily in North America, as well as corporate training professionals about the "current status and future trends" (p. 552) of e-learning in their areas of expertise. They received 562 (~4%) and 239 replies respectively. The low return rate was tempered by a relatively large supply of total responses. At that time 93% of post secondary respondents indicated they were blending their instruction, with more than 60% blending in no more than 20% of their courses. These individuals predicted their use of BL would progress further, with more than 70% expecting that more than 40% of their courses would be blended by 2013. Respondents working in the corporate world supplied similar answers: 86% were blending their teaching, and about 60% expected that more than 40% of their courses would be blended by 2013. Bonk et al. (2006) suggested that these findings indicated BL is a long-term trend rather than a passing fad. So far this has prediction has been correct.

In 2011 Barbour et al. surveyed education researchers in over 60 countries about trends in K-12 online and BL, receiving 50 completed surveys. Summaries of nine purposively sampled case studies submitted by online and blended learning researchers in diverse countries also contributed. The sample was small but varied. Barbour et al. found that (a) blended options are more available in urban areas of developed countries; (b) specialized professional development

for teachers is encouraged but not required; and (c) BL is occurring much more often than online learning. They discovered inequitable access to technology and funding, as well as a need for more training for online and blended teachers. Despite intriguing global conclusions, we acknowledge that each region faces unique benefits and challenges regarding BL.

Tham and Tham (2013) examined the state of BL in Asia, reviewing literature on challenges to blended and technology mediated education in four Asian countries: China, Japan, South Korea, and Singapore. These countries provided a limited view of the situation in Asia as a whole, and selection criteria for the literature were not described; however prevailing challenges were documented, including issues related to culture and to pedagogy and design. Cultural issues included teacher dependency in China, "tell and listen" strategies in Korea, and non-Western learning and teaching styles in Japan. Pedagogical and design issues included competition in China, lack of interaction in Korea, and limited Internet use in Japan and Singapore. Learning about regional issues has been compelling for Asia, as researchers can collaborate over shared concerns. These matters are meaningful for any who confront these barriers despite location.

In the earlier inquiry we found that BL research has shifted from a descriptive to an empirical base. Halverson et al. (2012) compiled a list of the 50 most impactful articles on BL based on Google Scholar citation counts. Recognizing that open coding research topics demands subjectivity, we found many of the most frequently cited but older articles focus on definitions or future growth. We also collected a list of newer articles that are frequently cited but have not had sufficient time to accumulate as many citations as the older ones. The fledgling articles focus less on defining BL and more on empirical research, indicating a transition of interest. This research disregarded geographic origin, but we noticed that most of the highest cited were North American. International articles tended to originate in Europe, with a small number from

elsewhere. The answers we discovered about BL generally sparked new questions about BL outside of North America. The current research project sought to describe the state of BL worldwide, comparing the various regions.

Research Questions

The exploration centered on this query: What are the most impactful conversations about BL worldwide? We sought to answer this question in terms of citations and publications.

1. Which are the most frequently cited articles worldwide as determined by Google Scholar?
2. How do the regions compare in total citations and their origins?
3. Which journals publish the most articles on BL worldwide?

Methods

We surveyed research articles on international BL to determine the most frequently cited works in each region. We compiled a list of the 10 most highly cited research articles in each region ("our top ten") and compared all of them (Research Questions 1 and 2). We then conducted a social network analysis on the top publications and the works that they referenced (Research Question 2) and listed the journals that published the top articles (Research Question 3).

Searching and Selection Procedure

We searched for a broad set of terms in several databases, hoping to catch as many articles as possible. Afterwards we narrowed the pool with specific inclusion criteria.

Source of publications. We used the Education Resource Information Center (ERIC) as the primary search database because of its wide range of offerings on education literature. ERIC provides access to over 1.4 million records dating as far back as 1996 (ERIC, 2014). To be more

thorough, we also searched in Academic Search Premier, Business Source Premier, CINAHL (Cumulative Index to Nursing and Allied Health Literature), and Education Full Text (H.W. Wilson). These databases were selected because of their high numbers of returns when searching all EBSCO databases, and because they enabled us to sample a wider variety of topics since BL appears frequently in business, health, and other disciplines in addition to education (Halverson et al., 2012).

Search terms. We required research articles related to international BL. Because BL is present in a wide variety of works and is conceptualized several ways, we first ran a broad search of related terms using limiters to restrict irrelevant findings. Applying the ERIC thesaurus function, we searched for broad educational technology and distance education descriptors in the ERIC database. We added specific BL phrases to the primary list for a search within titles, abstracts, keywords, and descriptors in Academic Search Premier, Business Source Premier, CINAHL, Education Full Text (H.W. Wilson), and ERIC:

> "blend* learn*," "blend* environment*," "blend* approach*," "blend* method*," "blend* course*," "blend* class*," "blend instruction," "blend program*," "hybrid learn*," "hybrid course*," "hybrid class*," "hybrid instruction*."

We combined the search for BL terms with a search for regional terms, dividing the world into seven regions: Africa, Asia, Europe, Latin America, the Middle East, North America, and Oceania, as shown in Figure 1. We began delineating regions based on the United Nations' composition of regions (United Nations) and separated some further along cultural and linguistic lines. We included Mexico in Latin America though it is part of North America because it is a Spanish-speaking nation. We also suspected that the many highly cited articles from the USA and Canada, articles from Mexico would not appear in the top 10 list. We separated out Western

Asia from the rest of the region and referred to it as the "Middle East" because we felt it was culturally and linguistically distinct enough to be examined on its own. We ran a separate search for each region except North America, including country names included in that region as well as the name of the continent and/or region. In some cases we added or substituted short form names (e.g., searching for both *Democratic Republic of the Congo* and *Congo*). We searched for these terms within the full text to catch any mention of author affiliation (e.g., university) or the location of a research site. We limited each search with blended terms: blend*, hybrid* or (*online* AND *face-to-face*) to narrow the returns to those most likely to be relevant. We also consulted the list of highly rated articles from Halverson et al. (2012) to ensure that none of those articles was overlooked. That list supplied the 10 most cited articles for North America.

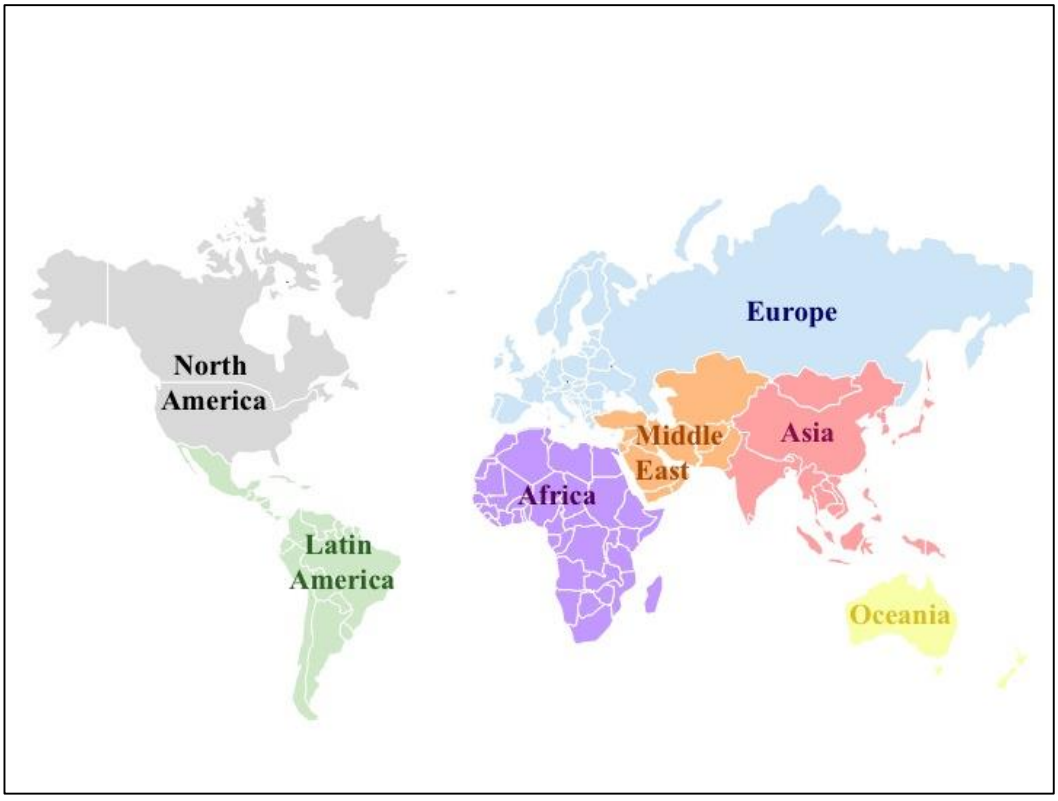

Figure 1. Countries included in each region. Created with template from Presentation Magazine.

Inclusion criteria. Searching a wide range of databases, we retrieved many articles unrelated to BL. We excluded articles outside of our definition of BL as systems combining face-to-face and computer-mediated instruction (Graham, 2006, 2013), as well as those in which BL was not a central point. When the primary researcher was unsure, another researcher was consulted.

We evaluated each return for relevance based on the following inclusion criteria:

1. Article in academic journal
2. Article in English
3. Article with BL as a central topic
4. Author or study site in one of the six regions
5. Use of the terms *blended* or *hybrid*

Each relevant publication was then located in Google Scholar to determine its number of citations as of June 18-21, 2013. Because of the large body of articles the search took several days. While some publications may have gained a few citations in that time we feel any gains in such a short time would be negligible when examining these patterns. We ranked publications by citation count to determine the top 10 in each region. A separate category was created for works spanning more than one region, as they had been discovered through examining other lists of returns. We updated the top lists on September 29, 2014 by re-ranking the highest 20 articles from our original list. Our final list included 76 top publications: 10 each from Asia, Africa, Europe, the Middle East, North America, and Oceania; six from Latin America (the total number of retrieved publications that fit the inclusion criteria); and 10 connecting multiple regions.

We restricted the study to English articles because the researchers are fluent only in English and could not properly identify or code articles in other languages. We acknowledge

exclusion of articles in other languages, but we believe that English is the most common language of academic conversation and anticipate that our research can help highlight works that, although written in English, are less widely acknowledged because they focus outside of the Anglophone center (Belcher, 2007; Curry & Lillis, 2012; Lillis & Curry, 2010). Furthermore, we included only articles using the terms *blended* or *hybrid* because we were interested in the specific happenings of the BL community, which we perceive as centering on these terms. Even authors who disagree with the term *blended* (e.g., Oliver & Trigwell, 2005) continue to use the term, presumably because it is still used by others in the conversation (e.g., Holley & Trigwell, 2010).

Social Network Analysis

We catalogued the references provided by top articles and determined the in-degree of each within the international BL community (Kilduff & Tsai, 2003). We focused on in-degree because it is indicative of citations by highly cited articles, and therefore, we submit, influence within the field. Our unit of analysis was each top article, all of which supplied all references; we conducted our analysis based on whole network data. Each publication was assigned an identification number and level. The initial 76 articles that made up the top 10 for each region constitute Level 1, while those that they cited comprise Level 2. Any Level 1 publications cited by another Level 1 publication retained their initial level. We compiled a list of connections (a tie list) linking each publication and those it cited so we could determine which if any references were cited by multiple top 10 publications. Finally, any article cited by two or more top 10 publications was located and assigned a region of origin based on author affiliation. We selected author affiliation as the deciding variable because this analysis was focused on citation practices and therefore on contact among scholars themselves.

Results and Discussion

In order to present an overview of the current field of BL research we analyzed our top articles to determine the most cited articles and their origins, inter-regional citation patterns and most included journals.

Top Cited Articles

We collected the top 10 articles from each region except Latin America (as we found only six articles from Latin America that met our criteria). An article was grouped with a region based on either (a) the affiliation of the author(s) (e.g., university, company) and/or (b) the location of the research site or focus. The full list of top articles is available in Appendix A (article 1). Figure 2 below represents the top two articles from each region.

As expected, North America leads the other regions both in total citations and average citations per year. The top European articles emerged concurrently with the top articles from North America (2003-2006), but had fewer citations. Our top North American article overall (Garrison & Kanuka, 2004) discussed the potential of BL, while the highest article from Europe (Oliver & Trigwell, 2005), focused on difficulties with defining and therefore pursuing BL. Both of these highly cited articles, which discussed major BL issues, were published very early in the development of BL. A reasonable conclusion is that they have both been used by hundreds of developing researchers to establish context for their inquiry.

Oceania and Asia dominate the mid-sized/mid-height category, lead by So and Brush (2008). This practice-based article describes a post-secondary course with a combination of inferential statistics and qualitative analysis, making it both relevant and credible for other authors. This article is relatively recent but highly cited, with a pattern we noted throughout the world. Most of the articles from the less cited regions appeared even more recently. All those

from the Middle East, for instance, were published after 2007. The third ranked Latin American article (not shown), cited only twice to this point, was published in 2010. Since articles from these regions are less frequently cited as a whole, some articles top the list although they have had less time to garner citations. This suggests that these regions, though early in their study of BL and in their worldwide influence, continue to show gains.

While updating citation counts, we noticed startling jumps in citations from a few articles. The average gain in citations was 39.5%, which suggests that interest in BL worldwide is currently increasing—if not exponentially, at least very rapidly. For articles that began with fewer citations, a larger percentage of growth was not surprising, but some articles that began with a high citation count also grew dramatically. Gikandi, Morrow, and Davis (2011) increased 73.1% from 35 cites in 2013 to 130 cites in 2014; this article was surpassed in percentage gain only by an article from Latin America that had not yet been cited in 2013 but was in 2014. Garrison and Kanuka (2004), the most highly cited article in 2013, increased by 53.7% and remained the top article in 2014.

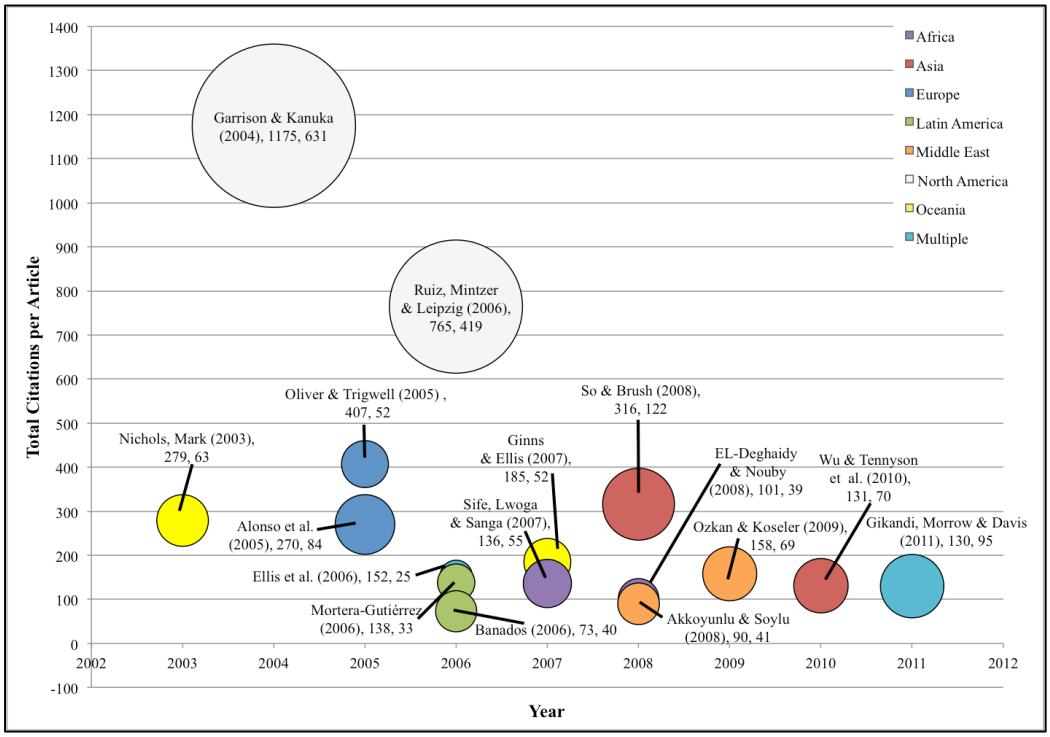

Figure 2. Top cited blended learning articles for each region listed by year of publication (x-axis) and total number of citations (y-axis). The size of each bubble denotes the gains in citations between our 2013 and 2014 counts. Color and/or pattern reflect the region each article is affiliated with. Author(s), year of publication, total citations and citation gains are included in each label.

The spread of countries where the most highly cited research on BL has originated (Figure 3) was expected in some cases and surprising in others. We expected Australia to be a major source, but not to completely dominate Oceania. In contrast, European research has come from diverse locales with no one country dominating the top publications. Some countries have focused more on BL than anticipated, including Turkey (six publications) and Croatia (two publications).

Figure 3. Countries the top articles originate from or are affiliated with. Some articles are affiliated with multiple countries. Where the article lists those countries they are included.

Top Researchers and Collaboration

An author's popularity and prestige are potentially linked to numerous factors, including citations, quality of citations, organizational affiliation, and honors (Ding & Cronin, 2011). Analyzing authors in the field of humanities, Evans (2005) argued "prestigious authors influence debates not only by writing more and higher quality texts, but also by other authors building upon their work in order to legitimate their texts" (p. 126). We based our determination of the most prestigious authors in the field of BL in each region and worldwide on the number of articles and citations. But only 10 of the authors of our top articles had published more than one article.

Several of the most cited authors have formed a cluster. For instance Ellis (6), Goodyear (5), O'Hara (2), and Prosser (3) each publish with another member of the group, even within the small subset of their articles reaching our top list. As evidenced by discrepancies between total citations and author points collected by each, they take turns assuming the responsibility of first authorship. This cluster is generally intra-regional, based in Oceania but maintains ties when members base themselves in Europe or Asia as well. Columbian research found international co-authoring could improve "productivity" and focus research on "country-specific issues" (Ordóñez-Matamoros, Cozzens, & Garcia, 2010), which seems to be occurring within this group.

Collaboration patterns emerge from the *multiple region* category. Three describe ties between Africa and the UK or Australia. One of these involves outside researchers studying Africa (Unwin, 2004), while the others present a traditional partnership including researchers at universities in different regions (de Beer & Mason, 2009; Gikandi, Morrow & Davis, 2011). Two articles represent a single project operating across several countries (Larson & Murray, 2008; Morgan & Carey, 2009). Other inter-regional collaboration appears among top articles centered outside North America but collaborating with a North American scholar or site. Of these, two are affiliated with Asia (Lynch & Dembo, 2004, So & Brush, 2008) and one each with the Middle East (Akyol & Garrison, 2011) and Africa (Giannini-Gachago & Seleka, 2005). In the top cited articles we found no collaboration between North America and Europe—close neighbors linguistically and culturally. While we found light patterns, we observed limited collaboration and/or international interest throughout the BL community.

Regional Citations

Though we compared the 10 most cited articles from each region, we found a huge disparity among them (Figure 4). North America exceeds the others, with 1,000 more citations

than the next highest, Europe. Oceania (3rd) and Asia (4th) each garnered about half as many as Europe. We expected diversity but were surprised to find such a stark contrast.

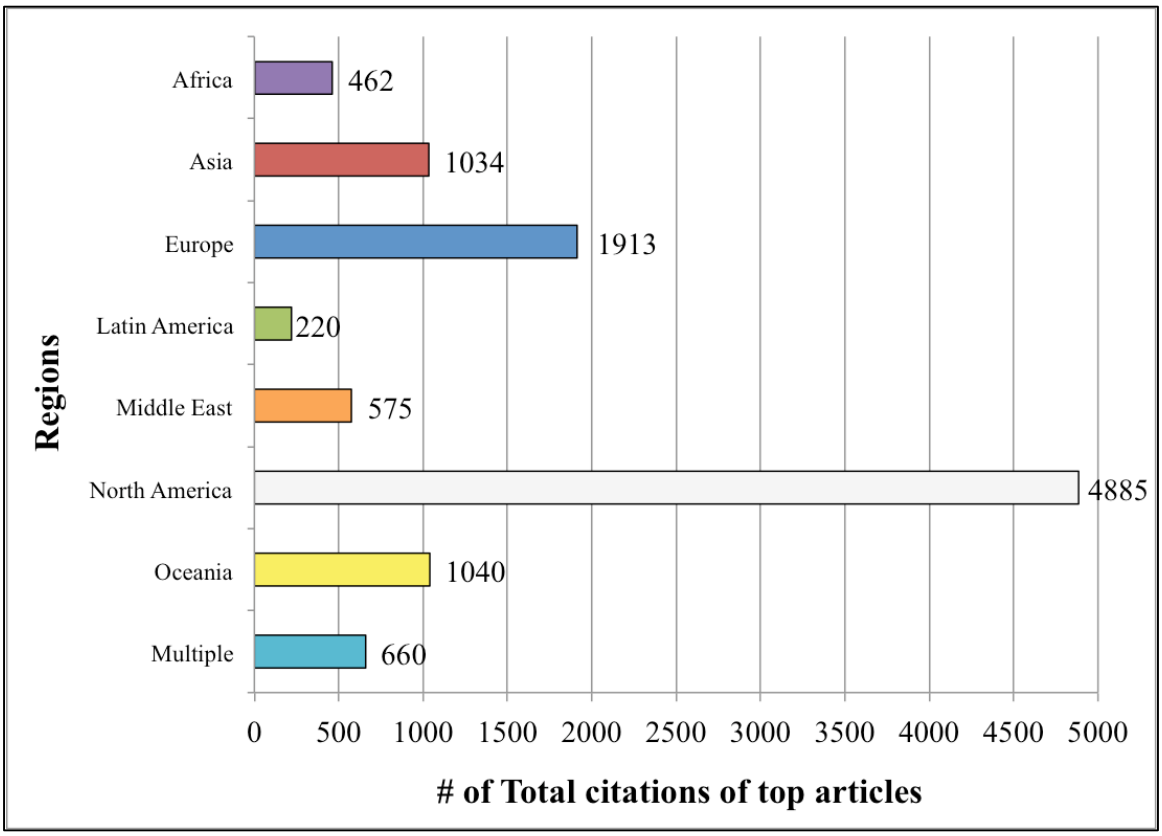

Figure 4. Total citations of top articles by regions.

Citation Connections

Effective connections would be recognized by other regions, which would look to them for insights. Based on our top articles, regions have either a strong *in-degree*, being highly cited, like North America, or a strong *out-degree*, heavily citing other regions, like the Middle East (Figure 5). The region with the most balance, Oceania, still has a split of about 1/3 in to 2/3 out.

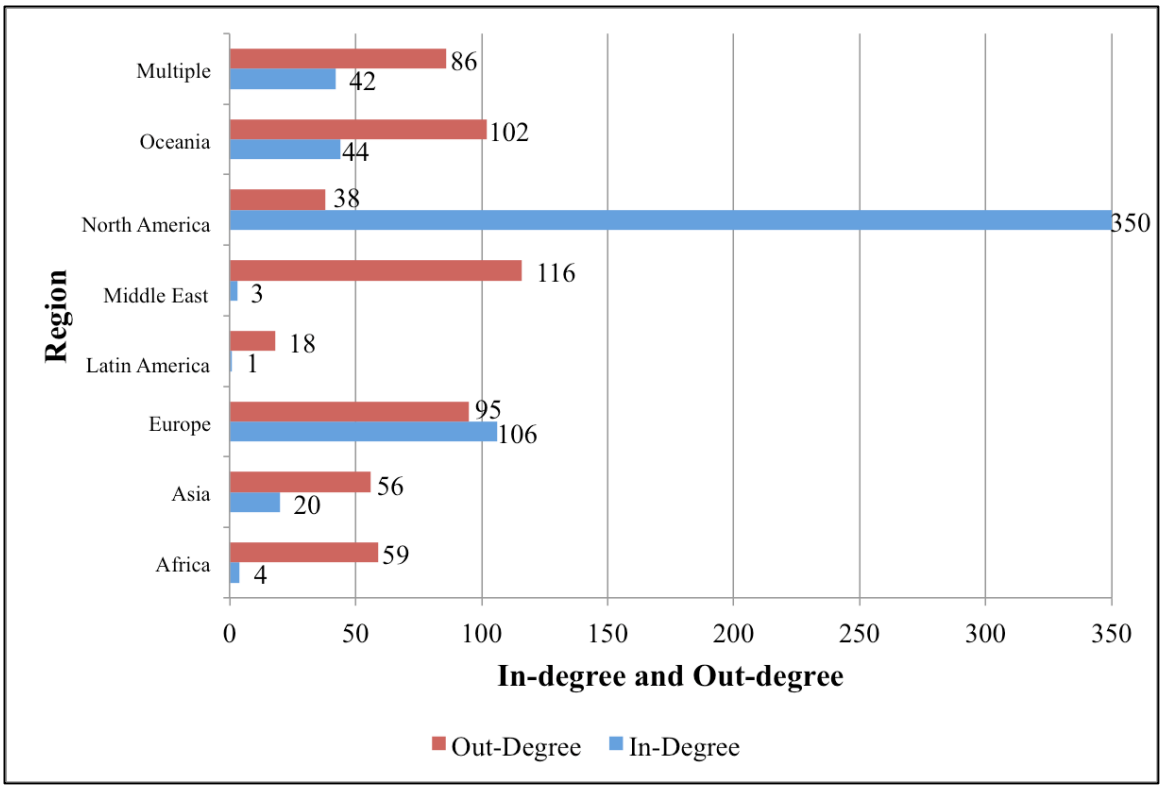

Figure 5. Total in-degree and out-degree of the top articles in each region.

North American articles overshadowed citations of work by other regions (Figure 6). The regions doing the citing, however, surprised us. The Middle East cited North American articles 88 times, over twice as much as Oceania (39 times) or Europe (25 times) despite linguistic, cultural, and geographic bonds involving Oceania, Europe, and North America. In contrast, Oceania and Europe have the strong bond that would be expected from this sort of closeness (23 connections from Oceania to Europe). Each region is connected to North America, and five regions are connected to Europe, while connections are sparser among other regions.

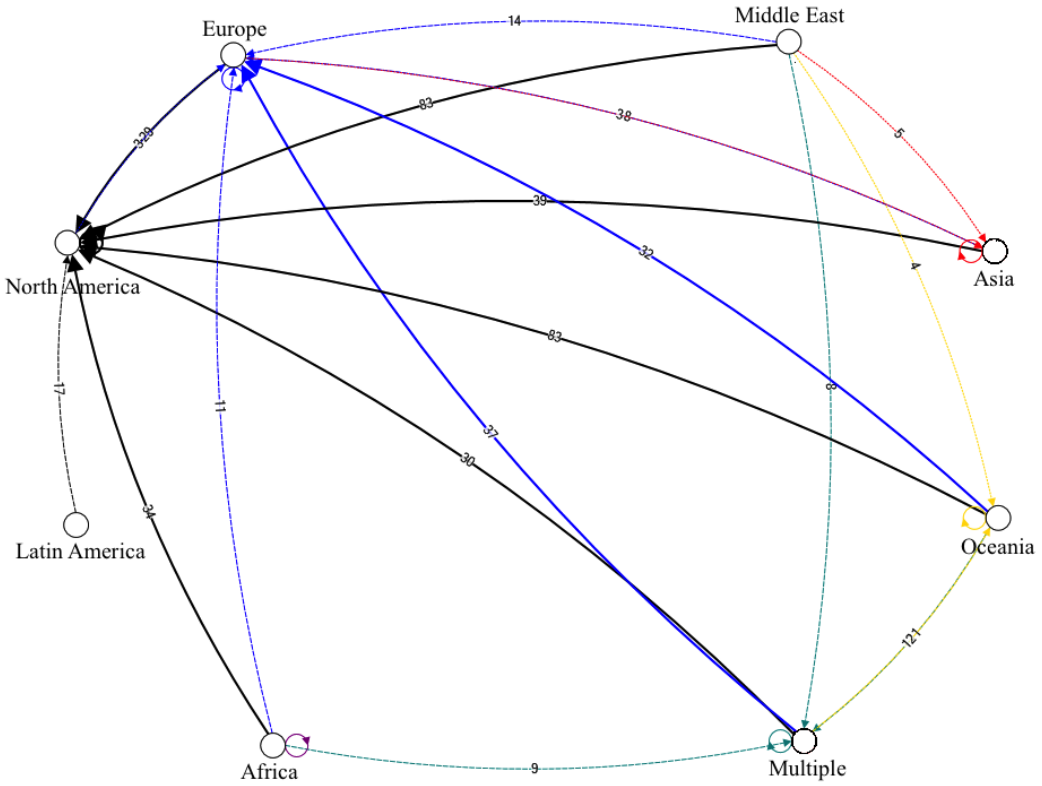

Figure 6. Social network analysis of citation between regions of the world. Each node represents a region and each edge represents the number of articles affiliated with one region citing articles affiliated with another region. Arrows indicate directionality and line thickness indicates the strength of the connection. Some regions fail to connect because they did not cite one another five times or more. Only articles in the top most cited list and/or featured in the references of two or more top articles are included (N=210). Created using NodeXL.

Of the over 2000 unique articles cited by our top articles, only the 19 included in Figure 7 were cited more than five times. Only five of those were among our original top cited articles, and of those only two originated from regions other than North America, both from Europe. Each of these articles was among the most cited articles overall compiled by Halverson et al. (2012). Five of these articles discuss theoretical or design topics. They were published early in the development of BL, three in 2003 and the other two in 2004 and 2005. It is reasonable that promising researchers would look to early theoretical articles to ground their explorations.

Our top articles cited Garrison and Kanuka (2004), the article with the highest in-degree, nine times. It discusses the "transformative potential" of BL, specifically in the context of post-secondary education. Overall this article is obviously foundational (Halverson et al., 2012), but its influence has not spread as widely to the international BL community. The article citing the most other included articles, therefore likely one of the most connected to the field, is Oliver and Trigwell (2005), which cites five of the articles with the highest in-degree. This article, a position paper on the difficulties of defining *blended learning,* drew heavily on important articles from the community due to its topic. While some articles are more influential than others within the worldwide BL field, clearly the international community has yet to agree on foundational articles.

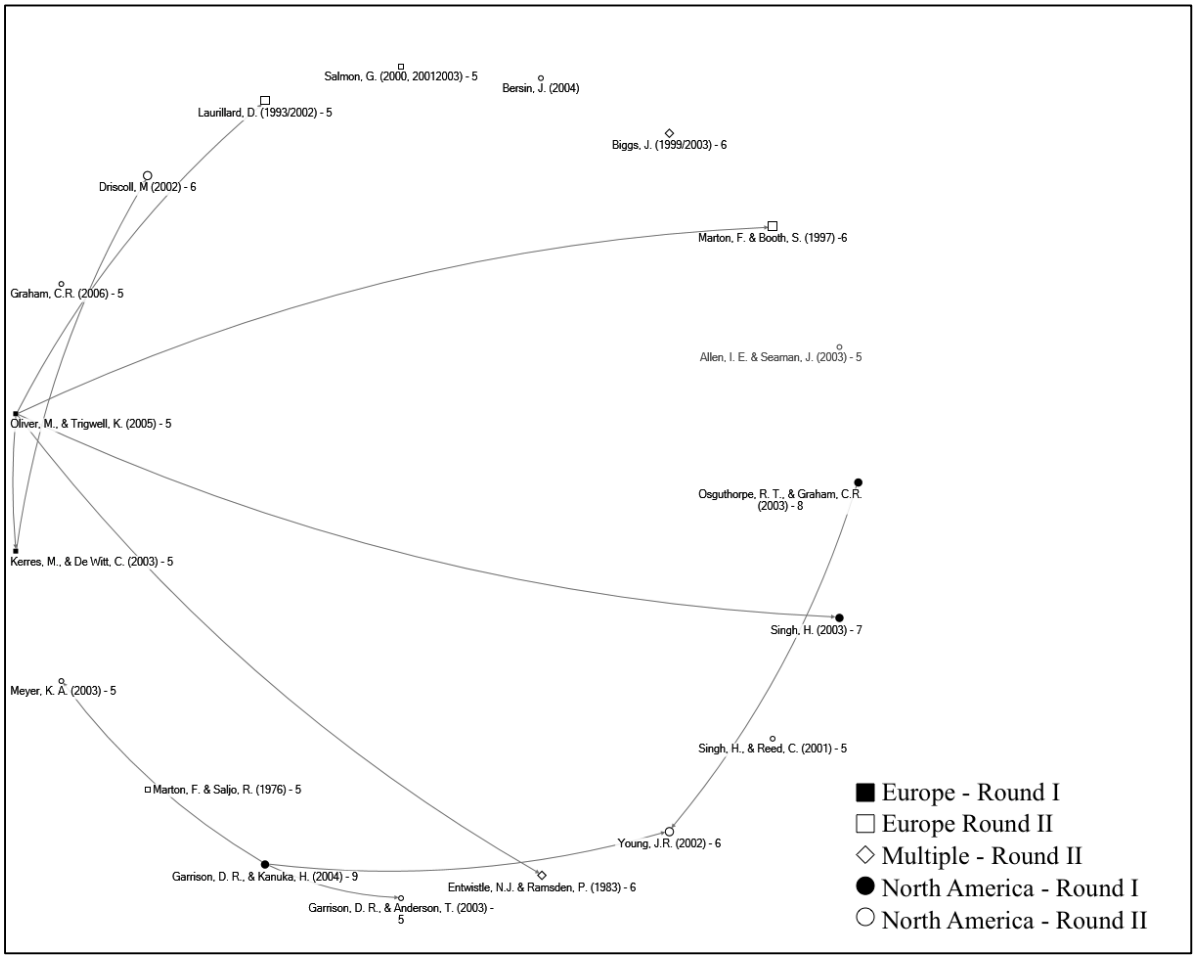

Figure 7. Social network analysis of citation between top publications with the highest in-degrees. Publications with an in-degree of five or higher were included (N=19). Each node represents an article and each edge represents a citation. Arrows indicate directionality. Some publications fail to connect because they did not cite one another. The size of each node corresponds to its in-degree; each node is labeled with author(s), year and in-degree. Created using NodeXL.

Publication Patterns

Our top 76 articles were published in 40 unique journals. Of those journals, eleven contained 61.8% of top publications (Figure 8). These journals are regionally diverse, yet all but one have published top articles affiliated with two or more regions. *The British Journal of Educational Technology*, which published the most (8), features articles from four regions and focuses more on publications outside of its own region (5) than within (3). The *International Review of Research in Open and Distance Learning* and *Educational Technology & Society* have

the largest range, having published top articles from five of the seven regions. The other third of our top articles were published by 29 unique journals. While these journals may focus less on international BL, they reflect a wide interest in the topic within the field.

The average number of articles per journal among the top cited articles in each region is the same as was found by Halverson et al. (2012) among the top articles overall. While there are clearly top BL journals, there is also a large variety of venues for BL articles. The two data sets also share six journals publishing multiple top articles, 66% of the top journals overall, and more than half of top journals for each region. The field of BL at large has identified a set of preferred journals that authors and readers from regions around the world also esteem.

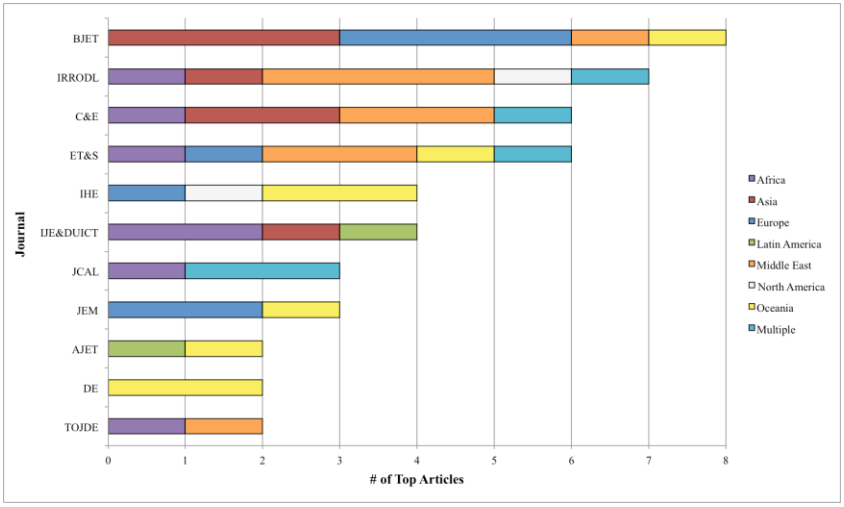

Figure 8. Journals (y-axis) that published two or more top articles (x-axis). Regions that each of the articles are affiliated with are denoted by colors and/or patterns.

Conclusions

Overall we found a large disparity in citation patterns of BL research around the world. We expected to find divergence between regions, but discovered a gap that was greater than expected. This suggests to us that there is much untapped potential for BL researchers around the world to benefit from each other's work. Part of the purpose of this research was to find where sharing around BL was happening. We found less collaboration both between authors in different

regions and those in similar locales than anticipated. It was surprising to find such a low level of inter-regional citing, as well as intra-regional citing. This might indicate a lower level of collaboration across regions than we expected, but also an opportunity for researchers and authors to benefit from working together.

While the field is not yet where we hoped, we see much potential for global collaboration and cooperative growth. The bias towards North America in our findings is likely influenced by our limitation to English-only articles. We expect there are thriving BL conversations in other languages we have not been able to tap into. It is also possible that different regions use different terms for BL, making it more difficult to find one another. We are encouraged by the highly ranked articles from less cited regions that have been published in recent years and by the growth in citations over time across all regions and look forward to further development in these arenas. These findings suggest to us that while BL research from North America is currently cited most widely worldwide, BL is also actively growing elsewhere. We believe there are several ways that international BL can enrich and strengthen the global community. For example, it contributes experience with educating in unique contexts, particularly the challenges of blending in developing locations and implementing inventive solutions with new technology. International researchers may also have experience with educating students with varied cultural and linguistic backgrounds. The previously independent nature of most BL initiatives might have also rendered them laboratories of innovation and creative ideas that we can all learn from. In the coming years we expect further advancement in BL work worldwide, and an expanded capacity for global collaboration.

Top BL research also originates in a wide variety of countries, which suggests implementation in many locales. We acknowledge many who implement BL will not necessarily

publish about their experiences in academic journals, which limits the view that can be developed from them. Top BL journals are open to publishing research from many regions, which allows the entire community greater access to the best work worldwide. There also seems to be some agreement among BL authors about the most prominent publication venues, which could help the community become more cohesive.

Future research should examine the themes of top articles to determine the level of cohesion or diversity among the topics and methods in BL research worldwide. It should also search for themes that are common areas of interest across regions. More in-depth research should also be done on each region and on BL research published in other languages. We are especially interested in discovering BL research from Latin America, as we expect there is much more available than the English articles we were able to find. Other research might focus on BL practitioners who are not publishing in research journals. We look forward to the future of BL as we all continue to learn more about advances globally and work together to improve the field as a whole.

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Article 1 - Appendix A

Table 1

Top 10 Articles in Africa

#	Total cites	Av. cites/yr	Authors	Title	Source	Country
1	136	19.4	Sife, Lwoga, & Sanga (2007)	New technologies for teaching and learning: Challenges for higher learning institutions in developing countries	*IJE&DUICT*	Tanzania
2	101	16.8	EL-Deghaidy & Nouby (2008)	Effectiveness of a blended e-learning cooperative approach in an Egyptian teacher education programme	*C&E*	Egypt
3	97	9.7	Cox, Carr, & Martin (2004)	Evaluating the use of synchronous communication in two blended courses	*JCAL*	South Africa
4	22	4.4	Boitshwarelo (2009)	Exploring blended learning for science teacher professional development in an African context	*IRRODL*	Botswana
5	21	2.3	Giannini-Gachago & Seleka (2005)	Experiences with international online discussions: Participation patterns of Botswana and American students in an adult education and development course	*IJE&DUICT*	Botswana & United States
6	20	4	Cronje (2011)	Using Hofstede's cultural dimensions to interpret cross-cultural blended teaching and learning	*ET&S*	Sudan & South Africa
7	19	2.7	Leary & Berge (2007)	Successful distance education programs in sub-Saharan Africa	*TOJDE*	Several African Countries
8	18	3.6	Prinsloo & Van Rooyen (2009)	Exploring a blended learning approach to improving student success in the teaching of second year accounting	*Electronic Journal of E-learning*	South Africa
9	14	3.5	Bozalek & Biersteker (2010)	Exploring power and privilege using participatory learning and action techniques	*Social Work Education*	South Africa
9	14	2.3	Bozalek, Rohleder, Carolissen, Leibowitz, Nicholls & Swartz (2008)	Students learning across differences in a multi-disciplinary virtual learning community	*South African Journal of Higher Education*	South Africa

Table 2

Top 10 Articles in Asia

#	New cites	Av. cites/yr	Authors	Title	Source	Country
1	316	52.7	So & Brush (2008)	Student perceptions of collaborative learning, social presence and satisfaction in a blended learning environment: Relationships and critical factors	*C&E*	United States, Singapore
2	131	32.8	Wu, Tennyson & Hsia (2010)	A study of student satisfaction in a blended e-learning system environment	*C&E*	Taiwan
3	130	13.0	Lynch & Dembo (2004)	The relationship between self-regulation and online learning in a blended learning context	*IRRODL*	South Korea, United States
4	125	25.0	Wang, Shen, Novak &Pan (2009)	The impact of mobile learning on students' learning behaviors and performance: Report from a large blended classroom	*BJET*	China
5	93	23.3	Miyazoe & Anderson (2010)	Learning outcomes and students' perceptions of online writing: Simultaneous implementation of a forum, blog, and wiki in an EFL blended learning setting	*System*	Japan
6	63	9.0	Bhattacharya & Sharma (2007)	India in the knowledge economy an electronic paradigm	*IJE&DUICT*	India
7	52	8.7	Sung, Kwon & Ryu (2008)	Blended learning on medication administration for new nurses: Integration of e-learning and face-to-face instruction in the classroom	*Nurse Education Today*	South Korea
8	49	4.5	Khine &Lourdusamy (2003)	Blended learning approach in teacher education: Combining face-to-face instruction, multimedia viewing and online discussion	*BJET*	Singapore
9	39	6.5	Shen, Wang & Pan (2008)	Increasing interactivity in blended classrooms through a cutting-edge mobile learning system	*BJET*	China
10	36	4.5	Keppell & Carless (2006)	Learning oriented assessment: A technology based case study	*Assessment in Education: Principles, Policy & Practice*	China

Table 3

Top 10 Articles in Europe

#	Total cites	Av. cites/yr	Authors	Title	Source	Country
1	407	45.2	Oliver & Trigwell (2005)	Can "blended learning" be redeemed?	ET&S	United Kingdom & Netherlands
2	270	30.0	Alonso, Lopez, Manrique &Vines (2005)	An instructional model for web-based e-learning education with a blended learning process approach	*BJET*	Spain
3	207	18.8	Kerres &De Witt (2003)	A didactical framework for the design of blended learning	*JEM*	Germany
4	183	20.3	Concannon, Flynn & Campbell (2005)	What campus- based students think about the quality and benefits of e- learning	*BJET*	Ireland
5	155	17.2	Derntl &Motschnig-Pitrik (2005)	The role of structure, patterns, and people in blended learning	*IHE*	Austria
6	152	30.4	Hoic-Bozic, Mornar & Boticki (2009)	A blended learning approach to course design and implementation	*IEEE*	Croatia
7	144	16.0	Taradi, Taradi, Radic &Pokrajac (2005)	Blending problem-based learning with Web technology positively impacts student learning outcomes in acid-base physiology	*Advances in Physiology Education*	Croatia
8	138	27.6	Boyle, Bradley, Chalk, Jones & Pickard (2009)	Using blended learning to improve student success rates in learning to program	*JEM*	United Kingdom
9	130	11.8	Shephard (2003)	Questioning, promoting and evaluating the use of streaming video to support student learning	*BJET*	United Kingdom
10	127	18.1	Hall & Davison (2007)	Social software as support in hybrid learning environments: The value of the blog as a tool for reflective learning and peer support	*Library & Information Science Research*	United Kingdom

Table 4

Top 10 Articles in Latin America

#	Total cites	Av. cites/yr	Authors	Title	Source	Country
1	138	17.3	Mortera-Gutiérrez (2006)	Faculty best practices using blended learning in e-learning and face-to-face instruction	*IJE&DUICT*	Mexico
2	73	9.1	Banados (2006)	A blended-learning pedagogical model for teaching and learning EFL successfully multimedia environment	*Calico Journal*	Chile
3	4	1.0	de Espíndola, El-Bacha, Giannella, da Silva & Da Poian (2010)	Teaching energy metabolism using scientific articles: Implementation of a virtual learning environment for medical students.	*Biochemistry and Molecular Biology Education*	Brazil
4	2	1.0	Peixoto, Peixoto & Alves (2012)	Learning strategies used by undergraduate and postgraduate students in hybrid courses in the area of health.	*Revista latino-americana de enfermagem*	Brazil
4	2	0.7	Garrote, Pettersson & Christie (2011)	LiveUSB mediated education: A method to facilitate computer supported education	*AJET*	Cuba, Guatemala & Peru
6	1	0.3	Llambi, Esteves, Martinez, Forster, Garcia, Miranda, Arredonodo & Margolis (2011)	Teaching tobacco cessation skills to Uruguayan physicians using information and communication	*Journal of Continuing Education in the Health Professions*	Uruguay

Table 5

Top 10 Articles in the Middle East

#	Total cites	Av. cites/yr	Authors	Title	Source	Country
1	158	31.6	Ozkan & Koseler (2009)	Multi-dimensional students' evaluation of e-learning systems in the higher education context: An empirical investigation	*C&E*	Turkey
2	90	15.0	Akkoyunlu & Soylu (2008)	A study of students; Views about blended learning environment	*ET&S*	Turkey
3	75	10.7	Delialioglu & Yildirim (2007)	Students' perceptions on effective dimensions of interactive learning in a blended learning environnment	*ET&S*	Turkey
4	74	24.7	Akyol & Garrison (2011)	Understanding cognitive presence in an online and blended community of inquiry: Assessing outcomes and processes for deep approaches to learning	*BJET*	Turkey & Canada
5	46	9.2	Precel, Eshet-alkalai & Alberton (2009)	Pedagogical and design aspects of a blended learning course	*IRRODL*	Israel
6	40	13.3	Ocak (2011)	Why are faculty members not teaching blended courses? Insights from faculty members	*C&E*	Turkey
7	25	2.5	Jamlan (2004)	Faculty opinions towards introducing e-learning at the University of Bahrain	*IRRODL*	Bahrain
8	24	8.0	Akyol, Vaughan & Garrison (2011)	The impact of course duration on the development of a community of inquiry	*Interactive Learning Environments*	Turkey
9	22	4.4	Gulbahar & Madran (2009)	Communication and collaboration satisfaction, equity, and autonomy in blended learning environments: A case from Turkey	*IRRODL*	Turkey
10	21	4.2	Korkmaz & Krakaus (2009)	The impact of blended learning model on student attitudes towards geography course and their critical thinking dispositions and levels	*TOJDE*	Turkey

Table 6

Top 10 Articles in North America

#	Total cites	Av. cites/yr	Authors	Title	Source	Country
1	1175	117.5	Garrison & Kanuka (2004)	Blended learning: Uncovering its transformative potential in higher education	*IHE*	Canada
2	765	95.6	Ruiz, Mintzer & Leipzig (2006)	The impact of e-learning in medical education	*Academic Medicine*	United States
3	593	53.9	Osguthorpe & Graham (2003)	Blended learning environments: Definitions and directions	*Quarterly Review of Distance Education*	United States
4	533	48.5	Singh (2003)	Building effective blended learning programs	*Educational Technology*	United States
5	466	46.6	Rovai & Jordan (2004)	Blended learning and sense of community: A comparative analysis with traditional and fully online graduate courses	*IRRODL*	United States
6	315	39.4	Kim & Bonk (2006)	The future of online teaching and learning in higher education: The survey says	*Educause Quarterly*	United States
7	279	39.9	Picciano & Seaman (2007)	K-12 online learning: A survey of U.S. school district administrators	*JALN*	United States
8	257	51.4	Bernard, Abrami, Borokhovski, Wade, Tamim, Surkes & Bethel (2009)	A meta-analysis of three types of interaction treatments in distance education	*Review of Educational Research*	Canada
8	254	28.2	Bourne, Harris, & Mayadas (2005)	Online engineering education: Learning anywhere, anytime	*Journal of Engineering Education*	United States
10	248	20.7	Brown & Liedholm (2002)	Can web courses replace the classroom in principles of microeconomics?	*The American Economic Review*	United States

Table 7

Top 10 Articles in Oceania

#	Total cites	Av. cites/yr	Authors	Title	Source	Country
1	279	25.4	Nichols (2003)	A theory for eLearning	*ET&S*	New Zealand
2	185	26.4	Ginns & Ellis (2007)	Quality in blended learning: Exploring the relationships between on-line and face-to-face teaching and learning	*IHE*	Australia
3	138	19.7	Bluic, Goodyear & Ellis (2007)	Research focus and methodological choices in studies into students' experiences of blended learning in higher education	*IHE*	Australia
4	74	14.8	Neumann & Hood (2009)	The effects of using a wiki on student engagement and learning of report writing skills in a university statistics course	*AJET*	Australia
5	66	6.0	O'Toole & Absalom (2003)	The impact of blended learning on student outcomes: Is there room on the horse for two?	*JEM*	Australia
6	63	10.5	Goodyear & Ellis (2008)	University students' approaches to learning: Rethinking the place of technology	*DE*	Australia
7	62	10.3	Chandra & Lloyd (2008)	The methodological nettle: ICT and student achievement	*BJET*	Australia
8	59	11.8	Benson & Samarawick-rema (2009)	Addressing the context of learning: Using transactional distance theory to inform design	*DE*	Australia
9	58	14.5	DeGeorge-Walker & Keeffe (2010)	Self determined blended learning: A case study of blended learning design	*Higher Education Research & Development*	Australia

Table 8

Top 10 Articles Involving Multiple Regions

#	Total cites	Av. cites/yr	Authors	Title	Source	Country
1	152	19.0	Ellis, Goodyear, Prosser & O'Hara (2006)	How and what university students learn through online and face-to- face discussion: Conceptions, intentions and approaches	*JCAL*	Multiple in Oceania & United Kingdom
2	130	43.3	Gikandi, Morrow & Davis (2011)	Online formative assessment in higher education: A review of the literature	*C&E*	Kenya & New Zealand
3	91	9.1	Unwin (2004)	Towards a framework for the use of ICT in teacher training in Africa	*Open Learning*	Multiple in Africa & United Kingdom
4	72	12.0	Ellis, Goodyear, Calvo & Prosser (2008)	Engineering students' conceptions of and approaches to learning through discussions in face-to-face and online contexts	*EMI*	Australia & China
5	59	6.6	Pearson & Trinidad (2005)	OLES: An instrument for refining the design of e-learning environments	*JCAL*	Australia & China
6	49	9.8	Oh & Park (2009)	How are universities involved in blended instruction?	*ET&S*	Korea & several others
7	35	7.0	de Beer & Mason (2009)	Using a blended approach to facilitate postgraduate supervision	*Innovations in Education and Teaching International*	South Africa & United Kingdom
8	32	5.3	Larson & Murray (2008)	Open educational resources for blended learning in high schools: Overcoming impediments in developing countries	*JALN*	15 Countries in Africa, Asia and Middle East
9	22	7.3	Zhang, Song & Burston (2011)	Reexamining the effectiveness of vocabulary learning via mobile	*TOJET*	China & Cyprus
10	18	3.6	Morgan & Carey (2009)	From open content to open course models: Increasing access and enabling global participation in higher education	*IRRODL*	Japan, Mexico, Russia

ARTICLE 2: Thematic Patterns in International Blended Learning[2]

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[2] This article is presented as it was submitted to the British Journal of Educational Technology and is formatted accordingly.

Abstract

Among the top cited articles there are strong similarities in BL research processes, practice, terminology, and focus. The goal of this research was to discover and compare the topics and themes of the top articles on BL from different regions of the world in order to understand the current focus of BL research worldwide. There are small differences between the top articles in each region and the top articles in general, but they follow largely similar patterns, which indicates that the most cited articles from around the world could fit well within the topical, research, and publication practices of the field at large. Our results suggest that although different regions have their own nuances and needs, they have much in common and considerable potential to learn from one another and even collaborate on shared interests. We believe that exploring the experiences of isolated BL communities could increase awareness and connections among them.

Practitioner Notes

1. What is already known about this topic
    a. Blended learning has been done around the world for over a decade.
    b. The focus in terms of prestige and citations has to this point been on North American and European Articles.
    c. Even among the most cited articles regions differ greatly in citations and publication patterns.
2. What this paper adds
    a. Among the top cited articles there are strong similarities in BL research processes, practice, terminology, and focus.
    b. There are small differences between the top articles in each region and the top articles in general, but they follow largely similar patterns.
    c. The patterns found among top-cited international BL articles generally correspond to those among top-cited BL articles overall.
3. Implications for practice and/or policy
    a. The most cited articles from around the world could fit well within the topical, research, and publication practices of the field at large.
    b. Although different regions have their own nuances and needs, they have much in common and practitioners have considerable potential to learn from one another and even collaborate on shared interests.

c. Awareness and connections among BL practitioners and researchers throughout the world can be increased by further exploration of isolated BL communities.

Introduction

Previous research has studied the trends in top-cited blended learning (BL) research (Halverson, Graham, Spring, & Drysdale, 2012; Halverson, Graham, Spring, Drysdale, & Henrie, 2014). The findings inspired questions about BL worldwide, and in 2015 Spring and Graham located the top cited BL articles from each region of the world and analyzed the citation and publication patterns across the world's regions, as well as collaboration between them. Our aim was to compose a broad overview of the community and learn from the progress made by researchers worldwide.

This research extends Spring and Graham (2015) by examining the themes of those top cited international articles. We will define *blended learning* (BL) as the combination of face-to-face and computer-mediated instruction (Graham, 2006). We hope that improved appreciation of BL globally will expedite collaboration among blended learning researchers and practitioners everywhere, supporting productivity and mutual advancement within the field.

Literature Review

BL has existed beyond North America for over ten years. We will summarize some important early studies.

Collis and van der Wende (2002) surveyed educators in Europe and the USA about *informational communications technology* (ICT). Though not specifically focused on BL, some of their results are relevant. Researchers received a much smaller response rate in the USA than in Europe, suggesting that even at this early point for the BL community, American researchers were less responsive to invitations for contact and more internally focused.

In 2006, Bonk, Kim, and Zeng researched the present and future of e-learning. More than 60% of post-secondary institutions were using blended learning, but in less than 20% of their courses. Over 70% anticipated blending more than 40% of their courses in 2013. The corporate sphere had similar responses: 86% were blending already, and around 60% anticipated blending 40% of courses by 2013. Bonk et al. (2006) suggested these results cast BL as a lasting trend. In 2011 Barbour et al. asked researchers in more than 60 countries about their experiences in K-12 online and blended learning. They found unbalanced access to technology and funds, and insufficient instructor training. While intrigued by global findings, we believe every region encounters unique BL benefits and difficulties. Tham and Tham (2013) analyzed BL in China, Japan, South Korea, and Singapore. Prevailing issues included culture, pedagogy, and design. In Asia and in other areas of the world, regional concerns have the potential to encourage collaboration among regional researchers

Research Questions

1. In each region, what methods of data analysis are described in the most cited articles?
2. In each region, what types of learners and levels of blending are described in the most cited articles?
3. What terms are commonly used for *blended learning* in the most cited articles?
4. What themes are addressed in the most cited articles?

Methods

We began coding by using a priori codes to determine methods of data analysis (question 1), types of learners, levels of blending (question 2) and terms (question 3) among the most cited articles. Finally we used open coding to identify themes in research questions and purposes (question 4).

Manuscript Coding

We coded each top article using established codes for context, level of blend, and terminology (Table 9). Context coding categories originated from Graham (2006), and level of blend categories are from Halverson et al. (2012); these codes produce an overview of BL practice across regions. *Terminology* codes describe the acknowledgement of the terms *blended* or *hybrid*, allowing us to examine accepted terms for BL worldwide.

Table 9: A priori codes used to analyze the context each top publication

Context	Level of Blend	Terminology
K-12	Activity	Blended
Higher Ed	Course	Hybrid
Corporate	Program	Blended+*
Multiple	Institution	Both
	Multiple	

**Blended+ denotes a publication that primarily uses the term blended, but also acknowledges the term hybrid. The reverse was also an option, but did not describe any of the top articles.*

We also coded each manuscript based on a priori codes from Drysdale et al. (2013) and Halverson et al. (2014; Table 2). To verify reliability two trained researchers independently coded 30% of the manuscripts. We selected Cohen's kappa because it considers chance agreement (Cohen, 1960). After training with an initial 20% and attaining a Cohen's kappa score of .69 (substantial), they achieved a final score on 10% of the manuscripts of .88 (almost perfect). The overall kappa achieved was .75 (substantial; Landis & Koch, 1977).

Table 10: A priori codes used to analyze the data analysis methods of each top publication

Code	Description	Methods
Inferential	Going beyond initial data to make generalizations beyond the available population	ANOVA, Chi-Square, T-tests, P-value, factory analysis
Descriptive	Identifying themes/patters with descriptive statistics	Means, medians, standard deviations, codes
Qualitative	Focus on interpretation of data	Case study, quotations, interviews, focus groups, open-ended surveys
Non-empirical	Forming an argument without empirical data	Literature review, model, theoretical, position, explanatory
Gold Star	Combines empirical and non-empirical methods to build and test a theory.	

Open Coding

We extracted and identified themes in research questions or purposes from each article, loosely following coding schemes from Drysdale et al. (2013) and Halverson et al. (2014). In order to establish trustworthiness an independent coder reviewed each placement and suggested adjustments.

Findings

This research presents a snapshot of BL contexts and themes worldwide.

Methodological Patterns

We coded every article for data analysis methods (Figure 9). Descriptive data analysis (57.9%) was the most common type applied in the most cited articles, though usually in conjunction with other forms of analysis like inferential (18.4%) and qualitative (13.2%). Descriptive methods were used alone in only 10.5% of top articles. The most common solitary method, non-empirical, was found in 23.7% of top articles. Non-empirical analysis was the least likely to be combined with other methods: Only 9 manuscripts (11.8%) fit this category. These

manuscripts occupy our "gold star" category: articles combining empirical and non-empirical methods and therefore building theory as well as testing it.

We found a healthy mix of data analysis methods among the regions. Latin America was the only region dominated by a single method, descriptive. This might be related to the limited number of relevant articles we were able to collect from this region. The Middle East overshadowed other regions in empirical (25.8%) and descriptive (18.2%) studies, the highest percentages for both methods, though those methods were implemented considerably worldwide. Top articles from Europe presented the most theoretical analyses (6). Fewer Asian articles focused on theory (4), but a higher proportion combined theory with empirical data to qualify for the "gold star category" (3); no North American article met the criteria for "gold star."

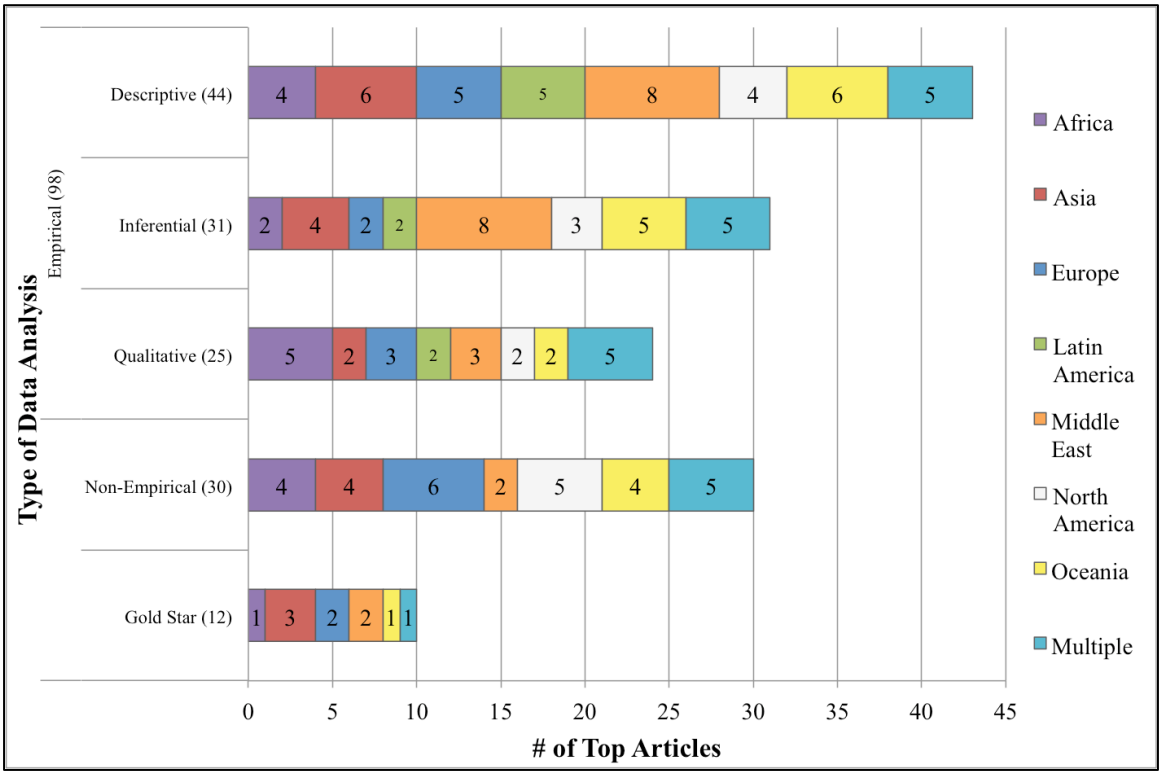

Figure 9. *Data analysis methods applied by top cited BL articles and divided by region. For Latin America N=6, for all other regions N=10.*

Learner Type

We saw a focus on higher education (Figure 10), reflecting earlier findings dominated by North America (Halverson et al., 2012). This is likely influenced by our specifying research articles, which are often produced by professors and graduate students who have experience with and access to secondary students. We see some promising interest in corporate blending in Africa, the Middle East, and Asia, which does not enter the top 10 in any other regions.

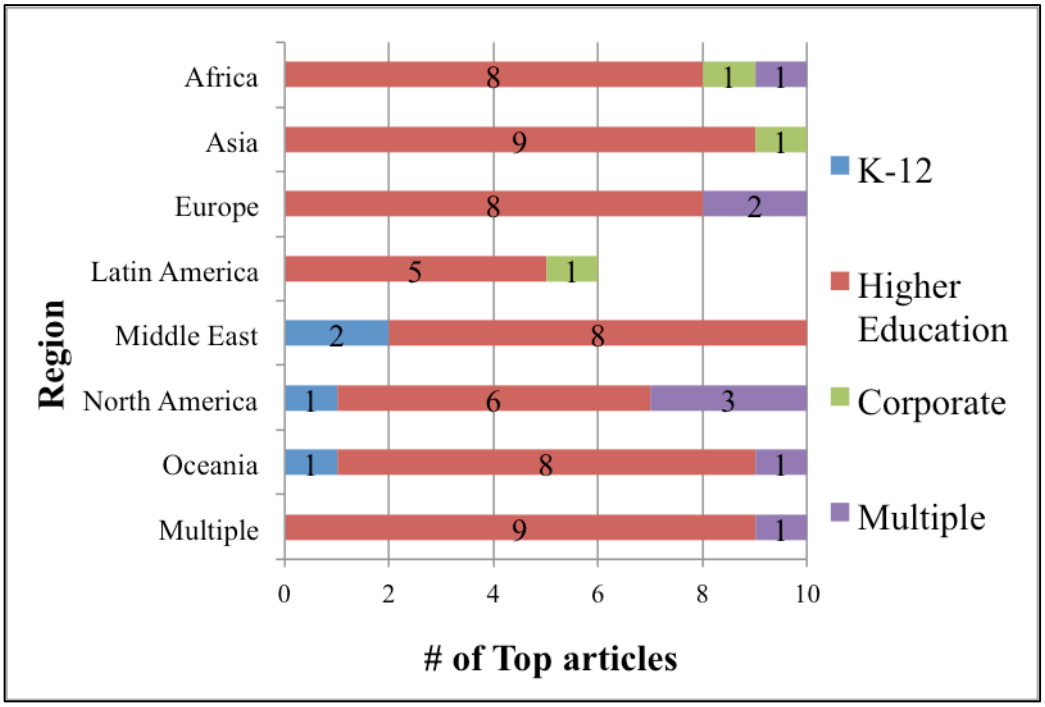

Figure 10. *A comparison of each region (y-axis) based on the type of learners featured in each top article.*

Level of Blend

Course level blending comprises the majority in almost every region (Figure 11). We found a strong focus on multiple levels in North America, likely due to several papers that focus on the practicalities of blending in general. We see, however, a much stronger mix in this area than in learner type. Africa presents the most diverse landscape, splitting fairly evenly across four levels, as do Oceania, Europe, and Asia.

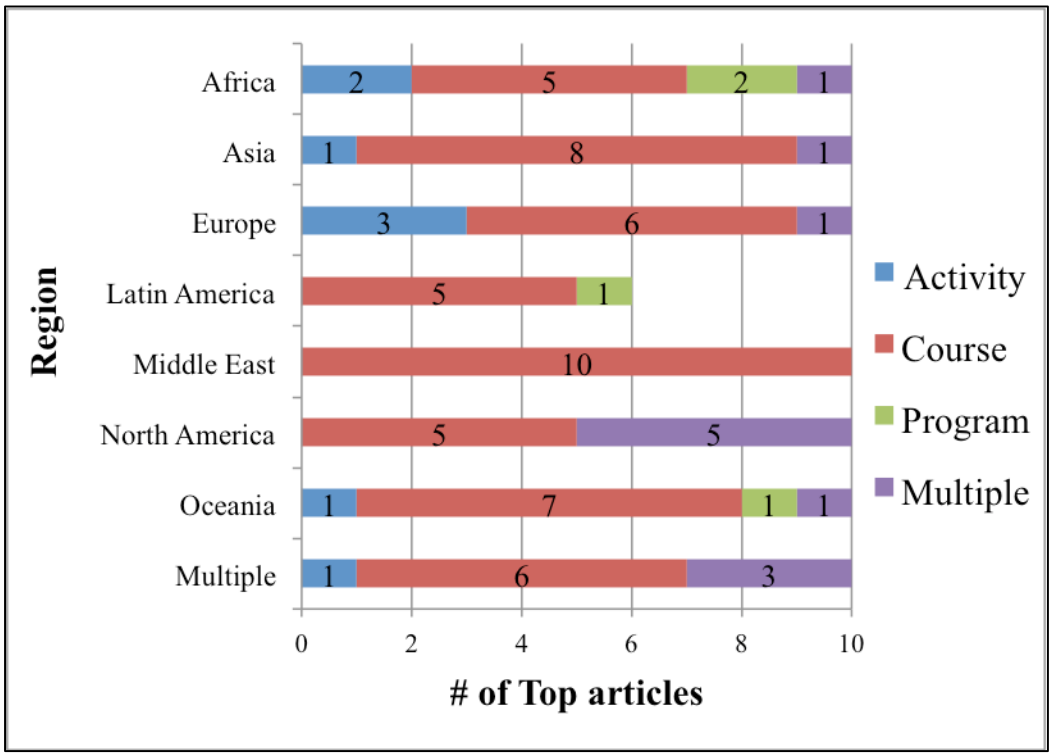

Figure 11. *A comparison of each region (y-axis) based on the levels of blending featured in each top article.*

Terms for Blending

Blended is the most prevalent term, and has been for several years (Figure 12). The two earliest top-cited articles, both from 2002, used only *hybrid*. *Blended* became most popular in 2003 and has dominated the field since. More recently, emphasizing *blended* while acknowledging *hybrid* as another name for the same construct has gained acceptance; hybrid is rarely used alone. This decrease could relate to the wide use of the word *hybrid* in other fields.

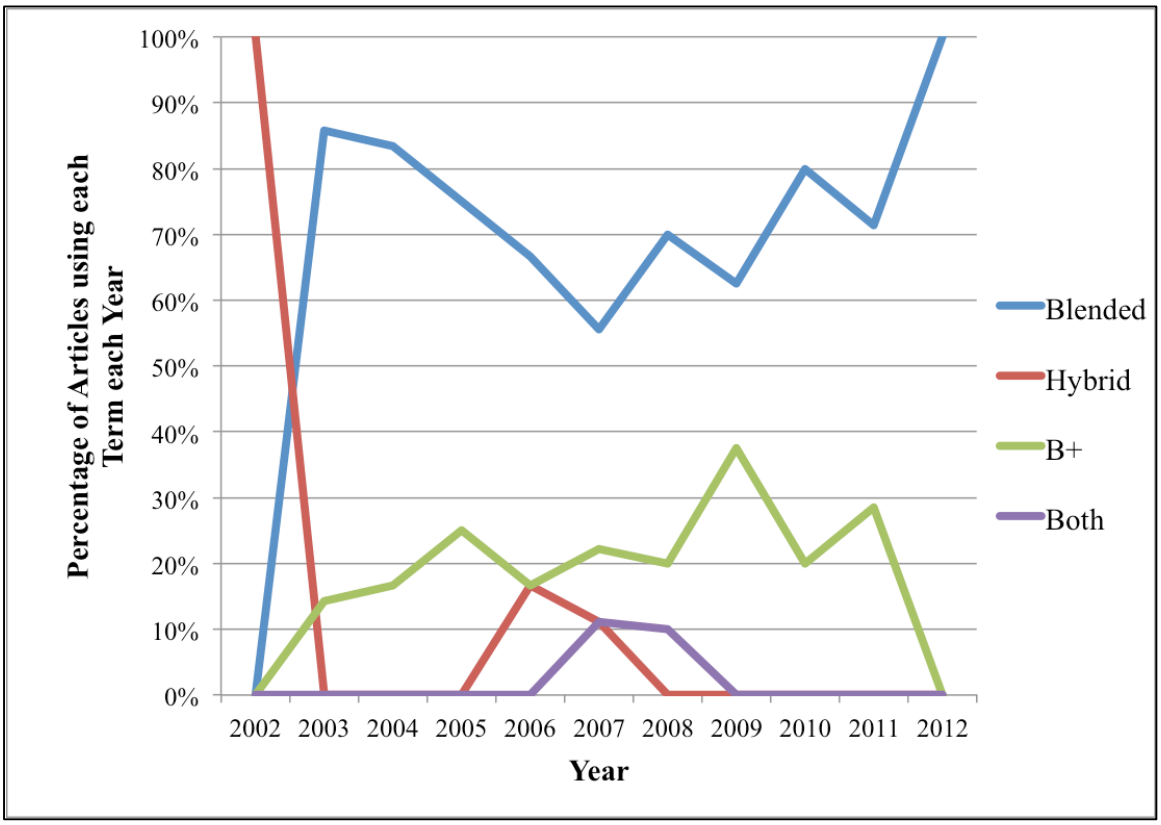

Figure 12. *Comparison of blended/hybrid learning terms over time (x-axis). Each term is represented according to the percentage of articles each year that used it (y-axis).*

Research Questions

Open coding of research questions generated nine primary categories; several were divided into subcategories (Table 3). Each article supplied one or more research questions or purposes and was placed into as many categories as appropriate; therefore the number of articles totals more than 76, and the percentages total over 100.

Table 11: Primary topics addressed by the research questions and purposes of the top articles

Topic	#	%	Subtopics
Learner Outcomes	32	42.1%	Cognitive, Affective, Behavioral
Instructional Design	26	34.2%	Models and Theories, Best Practices, Measurement and Implementation
Exploration	19	25.0%	Single-case, Position, Discipline Specific, Multi-case, Literature Review
Disposition	17	22.4%	Student/Faculty Perceptions, Experience, Intention, Preferences
Technology	14	18.4%	Tools, Disposition, Access
Interaction	8	10.5%	Student-Student, Faculty-Student, Multiple
International	8	10.5%	
Comparison	7	9.2%	Blended/Online , Blended/F2F, Blended/F2F/Online
Other	3	3.9%	Future, Open Educational Resources, Professional Development

Learner Outcomes

Learner outcomes, the most common category, was found in 42.1% of top articles. *Learner outcomes* was also the most prevalent category in Drysdale et al.'s (2013; 51.7%) study of graduate BL research, and the fourth-ranked category in Halverson et al.'s study of top-cited BL research (2012; 28.2%). Halverson et al. suggested this may be due to differences between data collected by graduate students, who often focus narrowly, and top cited articles, which focus more broadly. Here, our top-cited international BL research encompasses a wider range of contexts—from the burgeoning to the more established. While novice researchers explore individual cases, more established researchers are building on earlier exploration to examine the field more broadly.

Focus on *learner outcomes* is understandable, as a growing field like BL must prove itself useful through "superior learning outcomes" (Means, Murphy, Bakia, & Jones, 2009, p. 9). We divided the learner outcomes into *cognitive*, *affective*, and *behavioral* categories. Like Halverson et al. (2014) and Drysdale et al. (2013), cognitive outcomes, which they referred to as

performance outcomes, was the most common topic. Because cognitive outcomes are highly regarded and are the simplest to measure, they are useful for an expanding field like BL. Affective outcomes, which Halverson et al. (2014) and Drysdale et al. (2013) divided further, came next in all three data sets, though their percentages were higher than those of this study. Student and faculty satisfaction and experience has been an important consideration in distance and blended education (Allen, Bourhis, & Burrell, 2010; So & Brush, 2008) for both institutions and instructors (Porter, Graham, Spring, & Welch, 2013). While our top articles addressed each of the major learning outcome domains (Bloom, Krathwohl, & Masia, 1956) the clear preference was for cognitive and affective outcomes.

Table 12: Subtopics of the primary topic learner outcomes: 32 manuscripts-42.1% of total.

Subtopic	#	%	Example Research Question
Cognitive	18	23.7%	El-Deghaidy & Nouby (2008): "What is the effectiveness of a BeLCA on PSTs' achievement levels in a science teaching" (p. 991)
Affective	10	13.2%	DeGeorge-Walker & Keeffe (2010): "The design is then evaluated using a mixed methodology in which the students' voices illuminate their experiences of blended learning unit design with regards to engagement, learning and self-determination" (p. 1)
Behavioral	4	5.3%	Peixoto, Peixoto & Alves (2012): "This study aimed to investigate the learning habits and strategies of undergraduate and post- graduate students matriculated in hybrid courses in the area of healthcare at a Brazilian university" (p. 551)

Instructional Design

Instructional design, the second most researched topic, was addressed in 34.2% of top articles. This finding is understandable for a field like BL with consistent development and exploration of new designs. The most common subtopic, found in 15.8% of the top BL articles worldwide, was *models and theories* (see Graham, 2013); manuscripts were coded this way only if we could identify the model or theory to which they referred. Of the 15.8% of manuscripts

discussing BL models and/or theories in research questions or purposes, only one theory was represented multiple times. This theory, the community of inquiry, was discussed in two articles, both co-authored by the originator of the theory (Akyol & Garrison, 2011, Akyol, Vaughan, & Garrison, 201). Europe supplied the most articles discussing a model or theory (33%).

The second ranked sub-topic, *best practices*, appeared in 7.9% of the articles. Best practices are also of particular interest to a developing field like BL as institutions and individuals navigate the adoption process. Discussion of best practices was fairly even across the regions, but the scope of the contexts has varied. Nichols (2003) discussed best practices for applying eLearning in several ways including in a blended context. Unwin (2004) and Leary and Berge (2007) presented best practices for BL over Africa in general and sub-Saharan Africa specifically. Others, like Mortera-Gutierrez (2006), Prece, Eshet-Alkalai and Alberton (2009), and Sife, Lwoga, and Sanga (2007), gleaned their best practice recommendations after examining specific countries or institutions. While *best practices* are of interest, there is divergence on the methods for discovering them.

Consideration of BL *implementation* was rare in the top articles, which is consistent with the findings of Halverson et al (2014; 5.9%) and Drysdale et al. (2013; 3.5%). Some works, such as Porter, Graham, Spring, and Welch (2014) which considers the shift from early BL adoption to institutional implementation, have begun to fill this gap.

Table 13: Subtopics of the primary topic instructional design: 26 manuscripts-34.2% of total.

Subtopic	#	%	Example Research Question
Model/Theory	12	15.8%	Akyol & Garrison (2011): "The main research question is whether online and blended collaborative communities of inquiry can create cognitive presence that supports higher-order learning processes and out- comes" (p. 234)
Best Practices	6	7.9%	Unwin (2004): "This paper ... outlines a possible framework for the successful implementation of teacher training programmes that make advantageous use of appropriate ICTs. It argues that six fundamental principles of good practice must be addressed for such programmes to be effective" (p. 113)
Measurement	5	6.6%	Ozkan & Koseler (2009): "The purpose of this research is to develop a comprehensive e-learning assessment model using existing literature as a base, incorporating concepts from both information systems and education disciplines." (p. 1285)
Implementation	3	3.9%	Ocak (2011): "The purpose of this study, therefore, was to investigate impediments faculty members face while teaching blended courses" (p. 689)

Exploratory

Among the top articles, 25.0% were *exploratory*: describing individual or multiple cases of BL, taking a position on BL, focusing on a specific discipline, or reviewing the literature. *Single-case descriptive* was the largest subcategory (10.5%) of the total manuscripts. These articles were fairly evenly distributed across some regions, though none was found in the Middle East, North America, or Oceania. *Exploratory* articles made up half of those found from Latin America. This category was not present in Drysdale et al. (2013), likely because graduate committees require specific research questions, but was even larger (29.4%) in Halverson et al. (2014), likely because such descriptive pieces apply widely and garnish many citations. Their *exploratory* category did not include *single* or *multiple descriptive* cases, possibly because these

are most useful in the very early stages of a field's development, and citations drop off quickly as more overarching pieces become available.

Table 14: Subtopics of the primary topic exploration: 19 manuscripts-25.0% of total.

Subtopic	#	%	Example Research Question
Single-case	8	10.5%	Botishwarelo (2009): "The specific aim of this paper is to give an account of a case study that used a blended learning approach in the context of science teacher professional development" (p. 4)
Position	6	7.9%	Bhattacharya & Sharma (2007): "The purpose of this paper is to make a strong case for investing in information and communication technologies (ICT) for building up of quality human resource capital for economic upliftment of India" (p. 543)
Discipline Specific	2	2.6%	Ruiz, Mintzer & Leipzig (2006): "The authors provide an introduction to e-learning and its role in medical education by outlining key terms, the components of e-learning" (p. 207)
Multiple-case	2	2.6%	Picciano & Seaman (2007): "The purpose of this study was to explore the nature of online learning in K–12 schools and to establish base data for more extensive future studies" (p. 13)
Literature Review	1	1.3%	Bliuc, Goodyear & Ellis (2007): "The discussion of studies below is used to provide a representative summary of categories of research into blended learning, for the purpose of moving the field forward" (p. 232)

Dispositions

Of the most cited BL articles worldwide, 22.4% discussed *dispositions*: *perceptions*, *experiences*, *intensions*, and *preferences*. A majority focused on students, with only 3.9% researching *faculty perceptions*. This is consistent with Halverson et al. (2014) and Drysdale et al. (2013). Faculty understandably focused on their students conduct a majority of this research. However, institutions seeking to implement BL on a larger scale are more successful when supporting and recognizing faculty (Porter et al., 2014). Over half the manuscripts that inquired about *student* or *faculty perceptions* were from the Middle East.

Table 15: Subtopics of the primary topic disposition: 17 manuscripts-22.4% of total.

Subtopic	#	%	Example Research Question
Student Perceptions	10	13.2%	Precel, Eshet-Alkalai & Alberton (2009): "The present evaluation study focuses on students' perceptions of pedagogical and design issues related to a new model for blended learning" (p. 1)
Faculty Perceptions	3	3.9%	Oh & Park: "What are the faculty attitudes toward and perceptions of blended instruction?" (p. 328)
Experiences	2	2.6%	Kaczynski, Wood & Hardin (2008): "What is the richness of the learning experience?" (p. 31)
Intentions	1	1.3%	Ellis, Goodyear, Prosser et. Al: "A combination of open-ended questionnaires and semi-structured interviews was used to investigate students' conceptions of what they were learning, their intentions and their approaches to learning through discussion" (p. 244)
Preferences	1	1.3%	Pearson & Trinidad (2005): "In this paper, we report on the design and development of the Online Learning Environment Survey (OLES), an instrument which can be used to gather and represent data on students' 'actual' (experienced) and 'preferred' (ideal) learning environments" (p. 396)

Technology

Technology was covered in almost one in five of the top BL articles worldwide (18.4%). The largest subcategory was *tools*, which is comparable to the *types of* subtopic Halverson et al. (2014) and Drysdale et al. (2013) employed. The 14.5% here was higher than that in the aforementioned projects (3.5% and 2.9% respectively). Short message service (SMS), featured in several publications from Asia, was the tool most commonly discussed. A wide range of types and technological complexity was found including USB-delivered content (Garrote, Pettersson, & Christie, 2011) in Latin America, live chats in South Africa (Cox, Carr, & Hall, 2004), and streaming video in the UK (Shephard, 2003).

Table 16: Subtopics of the primary topic technology: 14 manuscripts-18.4% of total.

Subtopic	#	%	Example Research Question
Tools	11	14.5%	Zhang, Song & Burston (2001): "Is vocabulary learning via mobile phone SMS more effective than the traditional way of learning through the paper medium?" (p. 205)
Disposition	2	2.6%	Garrote, Petersson & Christie (2011): "The purpose of this study is to investigate the attitudes of third world engineering educators towards the LUME method and the use of OER in order to determine if the LUME method can contribute to making computer aided education more accessible worldwide" (p. 623)
Access	1	1.3%	Prinsloo & VanRooyen (2007): "How many students have access to computers? What type of computers? What computer skills do students have? ? How many students have access to the Internet?" (p. 54)

Interaction

We found 10.5% of the manuscripts discussed *interaction*. As in the 4.7% found by Halverson et al. (2014), the emphasis was on *student-student interaction* (6.6%). The majority of these articles originated in Africa. Drysdale et al. (2013) found many more instances of research on *student-instructor interaction* with 8.3% than our 1.3%. Our findings agreed with both previous projects; all lack of focus on *student-content interaction*, though we analyzed one article that included it lightly (Bernard et al., 2009). *Interaction* is an important possible benefit of BL (Bernard et al., 2009; Dziuban, Moskal, & Hartman, 2005), and we were surprised by the low focus on all forms of it both here and in previous projects.

Table 17: Subtopics of the primary topic interaction: 8 manuscripts-10.5% of total.

Subtopic	#	%	Example Research Question
Student-student	5	6.6%	Hall & Davison (2007): "To what extent can blog technology serve as a means of encouraging interaction between students in a module cohort? What are the consequences of this interaction in terms of peer learning and peer support" (p. 165)
Faculty-student	1	1.3%	de Beer & Mason (2009): "The main research objective was to formulate the requirements for BL postgraduate supervision in order to facilitate the reduction of the workload of postgraduate supervisors." (p. 213)
Multiple	2	2.6%	Bernard, Abrami & Brorokhovski et al. (2009): "What are the effects of the three kinds of interaction (SS [student-student], ST [student-teacher], and SC [student-content]) on achievement?" (p. 1249)

Comparison

Only 9.2% of the top articles focused on *comparison*, a much lower percentage than found by either Drysdale et al. (2013; 21.5%) or Halverson et al. (2012; 17.6%). Across all regions, only North America supplied more than one with comparative focus.

Table 18: Subtopics of the primary topic comparison: 7 manuscripts-9.2% of total.

Subtopic	#	%	Example Research Question
Blended/F2F	4	5.3%	Chandra & Lloyd (2008): "This paper maps the achievements in Year 10 Science of two cohorts of students over two years where students in the first year studied in a traditional environment while students in the second took part in a blended or e-learning environment" (p. 1087)
Blended/F2F/ Online	2	2.6%	Brown & Liedholm (2002): "Do students enrolled in online courses learn more or less than students taught face-to-face?" (p. 444)
Blended/Online	1	1.3%	Akyol & Garrison (2011): "The main research question is whether online and blended collaborative communities of inquiry can create cognitive presence that supports higher-order learning processes and out- comes" (p.234)

International Issues

One of the motivations for this research was the limited interest in *international issues* found by Drysdale et al. (2012; 1.0%) and Halverson et al. (2014; 2.4%). These findings exceeded earlier percentages at 10.5%; this is still a small proportion of articles considering diversity of contexts. Our result may be partially due to difficulties in identifying unique attributes about one's own experience. Authors might also identify with the particular qualities of their own institutions rather than their countries or regions.

Unique Topics

We found three articles with unique topics (1.3% each): *future predictions*, *open educational resources (OER)*, and *professional development*. *Future directions* did not appear in Drysdale et al. (2013), likely because of the nature of graduate research but was found in 10.6% of the articles analyzed in Halverson et al. (2014). The single paper concerned with *future directions* was North American, possibly because some regions are currently more focused on introducing BL than on future issues. Questions about *OER* were not found in the earlier studies. Though this is an increasing interest in many contexts (2012 World Open Educational Resources Congress, 2012*;* Allen & Seaman, 2014), it is especially useful in contexts with insufficient funding and higher needs such as developing regions (UNESCO*,* 2002*)*. *Professional development* was discussed more often, but still infrequently by Drysdale et al. (7.3%) than by Halverson et al. (3.5%). *Professional development* is important for many faculty members wishing to adopt BL and improve their skills (Porter et al., 2014), and we were surprised to find it so rarely examined.

Table 19: Subtopics of the primary topic other: 11 manuscripts-14.5% of total.

Subtopic	#	%	Example Research Question
International	8	10.5%	Bozalek & Biersteker (2010): "This article examines the value of Participatory Learning and Action (PLA) techniques for the education and training of health and human service professionals given the legacy of apartheid and the deepening poverty and inequality of contemporary South Africa" (p. 551-2)
Future Predictions	1	1.3%	Kim & Bonk (2006): "In particular, the study makes predictions regarding the changing roles of online instructors, student expectations and needs related to online learning, pedagogical innovation, and projected technology use in online teaching and learning" (p. 23)
Open Educational Resources	1	1.3%	Morgan & Carey (2009) "The purpose of this paper is to stimulate thinking about how current thinking about OERs and internationalisation can converge in a way that addresses the challenges and the opportunities created by the rapid expansion of Internet capabilities" (p. 2)
Professional Development	1	1.3%	Botishwarelo (2009): "The specific aim of this paper is to give an account of a case study that used a blended learning approach in the context of science teacher professional development" (p. 4)

The topics of research questions are spread fairly evenly across the regions. Only Asia focused even 50.0% of questions in a single category—*learning outcomes*. Only *international issues* was dominated by one region—Africa. The research question data are similar to that on learner type, context, and terms. There are only small regional differences. This finding suggests that researchers worldwide are interested in the same general issues regardless of their region.

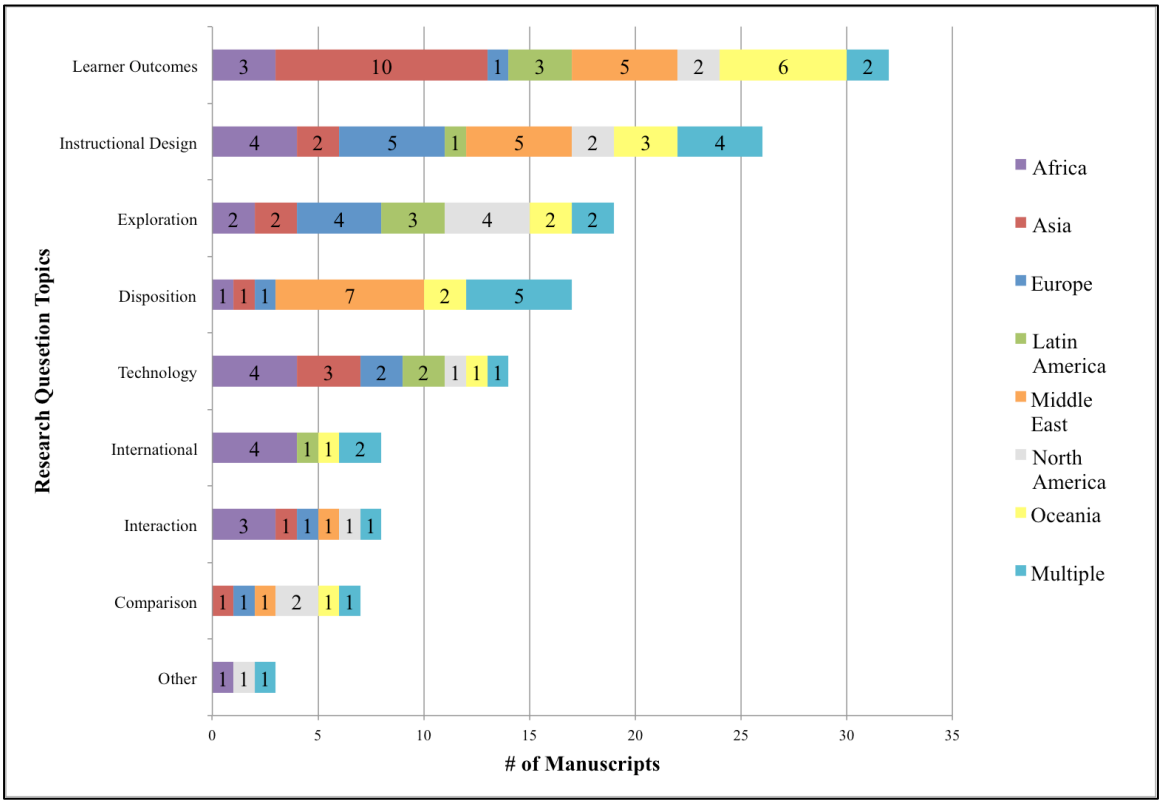

Figure 13. Major topics of research questions by region. *For Latin America N=6, for all other regions N=10.*

Conclusions

The goal of this research was to discover and compare the topics and themes of the top articles on BL from different regions of the world in order to understand the current focus of BL research worldwide. Though we can only present a snapshot of the field we believe approximate findings are a valuable starting point. While Spring and Graham (2015) found a large divergence in citation patterns among regions and a low level of collaboration involving multiple regions, there are strong similarities in BL research processes, practice, terminology, and focus. Among the top cited articles these characteristics are more alike than not between regions. There are small differences between the top articles in each region and the top articles in general as analyzed by Halverson et al. (2012), but they follow largely similar patterns, which indicates that the most cited articles from around the world could fit well within the topical, research, and

publication practices of the field at large. Our results suggest that although different regions have their own nuances and needs, they have much in common and considerable potential to learn from one another and even collaborate on shared interests. We believe that exploring the experiences of isolated BL communities could increase awareness and connections among them.

Future research may include a more in-depth analysis of each region, as well as insights to be gained from discussions with involved researchers about the current state of the field. More research is also needed concerning BL publications in languages besides English, with the potential to delve further into more linguistically unique areas of the community. We suspect there are many insights to be gained from further exploration of BL worldwide. We look forward to the future of blended learning as scholars and practitioners worldwide become more aware of each other and work together to improve learning for all students.

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ARTICLE 3: The Current Landscape of International Blended Learning

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Abstract

Each blended learning (BL) context is unique, but also shares attributes and concerns with others. As people in each each context strive to improve their own research and practice they have developed various approaches to common BL issues that can be applied and adapted by others regardless of location. Our findings suggest to us that BL researchers and practitioners across the world have more common experiences than particular ones, and that as each strives to improve his or her own teaching and context, new discoveries can be widely applicable. Previous research has examined the most cited research in international BL, but it is not possible to assess the current climate through a literature review. The current research describes a snapshot of the present state of blended learning. Conclusions are drawn from interviews with current blended learning researchers and practitioners (n=13) focused on BL around the world.

Introduction

Blended learning has existed for over a decade (Garrison & Kanuka, 2004; Osguthorpe & Graham, 2003). It has grown more ubiquitous and accepted (Dziuban, Hartman, Juge, Moskal & Sorg, 2006). By 2011 Norberg, Dzuban and Moskal referred to BL as the "new normal" (p. 208). Thousands of BL articles have been published worldwide, and hundreds outside of North America. New BL articles join the ranks weekly.

Halverson, Graham, Spring and Drysdale (2013) found that BL research originating from regions other than North America and Europe were underrepresented in the most impactful BL publications. Spring and Graham (under review) located and analyzed the most impactful articles from each of seven regions: Asia, Africa, Europe, Latin America, the Middle East, North America and Oceania. This research found a disparity in citations across regions, but similarities in methods, contexts and themes in research published over the last 12 years (Spring & Graham, under review). Because BL is a rapidly changing field we believe it is time to explore the current state of BL worldwide.

This research builds on the quantitative findings of Spring and Graham (under review) to learn how the most impactful and emerging BL scholars see the field. We believe that a deeper understanding of BL as it is today will facilitate further communication and collaboration between researchers and practitioners around the world.

The aim of this exploratory research is to discover the current state of BL worldwide: What is happening? What are the concerns? What are the possibilities? To answer these questions we asked more specific questions of researchers and practitioners of BL. These queries referred to research questions, other impactful researchers, important BL conversations, BL models, the purpose of BL, BL adoption, access as well as other topics that emerged through

survey answers and through the course of interviews. We first discuss the methods we used to collect and analyze our data. Next we present an analysis of the most salient pieces of information we collected. Finally we conclude with implications for future work in the field of international blended learning.

Methods

This research was conducted through distance communication and was not bound by site. Researchers who had no connections with participants other than mutual professional interest in BL performed member checks and debriefing to establish trustworthiness. The data was analyzed using a narrative framework and typological, collaborative open coding in accordance with the type of interview data collected as well as negative case analysis.

Research Design

This research is open to any sites that meet the criteria of including a researcher or practitioner of blended learning (BL), especially outside of the United States and Canada. Respondents were located through a highly cited or recent BL publication because of their experiences as influential and/or up-to-date blended learning researchers and/or practitioners.

Survey. We created the survey based on our research questions. After several iterations we piloted the survey with two independent professors not on the research team who are both experienced with BL. Per their experiences and suggestions we improved the survey. Finally we sent it via Qualtrics to the authors of the twenty most cited BL articles world wide as identified in Spring and Graham (2015) as well as authors of new international BL articles. All who took the survey were asked to refer us to colleagues who might also have expertise in BL within a certain region. When they did, we contacted these individuals as well.

Trustworthiness. In order to demonstrate trustworthiness we have conducted member checks, negative case analysis on the salient points of our findings, and debriefing as a research team. Coding, which we discuss later in more detail, included a negative case analysis where we searched for and focused on pieces of information that disagreed with our findings (Lincoln & Guba, 1985). This allowed us to mention dissenting cases and confirm or disconfirm that our findings are supported by the data.

Member checking was another part of the process. After each interview was transcribed and analyzed we sent each participant the transcript of their interview and gave each participant an opportunity to modify anything in their transcript. We accepted any changes to the transcripts requested by the participants.

Throughout the entire process we have regularly debriefed as a research team. We reviewed the data and findings together and clarified and modified them until we were in agreement. This has allowed us all to think more deeply about our coding decisions and findings to examine both from additional perspectives.

Data Analysis

Data analysis took place in two parts, the analysis of survey data and the analysis of interview data.

Survey. The survey data were downloaded from Qualtrics and compiled. Quantitative data was analyzed using descriptive statistics. In the cases of individuals who agreed to participate in an interview data was also reviewed to adapt the interview protocol (Appendix A).

Interview Framework. We approached this data analysis with a narrative framework. Clandinin and Connelly Connelly (2000) qualify narrative inquiry as something that is almost ongoing, happening over and over as the researcher reshapes his conclusions. Since we

categorize this project as "explore" research (Graham, Henrie & Gibbons, 2013) our goal was to repeatedly search the data and formulate understandings about international BL. We acknowledge the subjective nature of this research, and feel our data and by extension our findings are "true to experience in the sense that experience presents itself in a poetic dimensionality saturated with the possibilities of meaning, however perishable, momentary, and contingent" (Bochner, 2000, p. 270). The experience shared by our participants must by necessity pass through numerous lenses, their own, those of the researchers and those of the readers, and be distorted by each. We acknowledge this while aiming to be as transparent in our processes as possible.

Interview methods. We used a combination typological and open coding to analyze the data. We chose typological analysis because it lends itself to data where typologies are fairly clear (Hatch, 2002). Our data was generally divided into typologies based on the interview protocol (Appendix A); each question encompasses its own typology, and all questions are divided into groups under parent typologies. After identifying high-level typologies we read through the interview transcripts and coded excerpts typologically based on the questions answered and in an open sub code based on the subject matter of the answer. We added additional typologies as necessary. Then we looked for patterns within these categories and grouped the excerpts based on those patterns. After the first coding another member of the research team reviewed the codes and the team met together to remedy any disagreements. The first author made all final coding decisions. We continued to examine the excerpts and looked for non-examples of the patterns we found and connections between patterns and interviews. After all of the coding was completed the team met together to further narrow codes affirm final agreement. Finally we briefly described the patterns and connected them to specific supporting

excerpts. We conducted our data analysis collaboratively, based on the process described by Hall et al. (2005). Data was reviewed, individually, in pairs and then as a full team.

Participants and Demographics

We received 69 unique responses from Africa (12), Asia (10), Europe (17), Latin America (5), North America (14), the Middle East (3), and Oceania (8). The majority of individuals who responded to our survey (39.4%) identified themselves as professors. Another 7.4% identified themselves as lecturers or retired professors and 26.6% considered themselves researchers. This is consistent with the 77.2% that worked with post-secondary blending, which is to be expected as our initially invited group was selected because of BL publications, which are most common in higher education settings. Corporate (12.3%) and K-12 (10.5%) were the focus of much fewer proportions of respondents. We know that some BL exists in these sectors, likely much more than we've been able to find because of our methods and the looseness of the existing BL worldwide community.

While almost as many participants had heard of *hybrid learning* (32.8%) or *mixed-mode* (21.9%) as *blended learning* (39.4%) the overwhelming majority (87.0%) identified *blended learning* as the accepted term. Course level blending was implemented by almost half (46.8%) of respondents, followed by activity level (27.8%) and program level (17.7%). These worldwide proportions follow those found by Halverson et al. (2014), which were dominated by North America and support the finding that the field has common demographics regardless of region.

Findings and Discussion

The survey data presents an overview of top and most recent BL authors. Interview data provides a more in-depth perspective on BL in different regions. After coding we extracted

quotes on the most salient topics for further analysis. We used these excerpts to discover patterns in the data on the most prevalent issues. These include:

1. BL adoption
2. Reasons for blending
3. Access
4. Hopes for the future

Researchers and practitioners around the world are struggling with individual, but often overlapping concerns. While many we spoke with look forward to a stronger international network, we believe that in most cases people are too isolated and engaged with the constant work of education to find time for community building. Highlighting this issue and providing simple ways to connect with the most salient publications worldwide may help educators everywhere overcome their challenges together and build a stronger BL network.

Reasons for Blending

Benefits of BL are widely documented (Concannon, Flynn, & Campbell, 2005; Graham, Allen & Ure, 2005). We expected improved pedagogy and flexibility, but were surprised by enthusiasm for social justice as an expressed reason for blending.

We hope that all blending would occur for a salient purpose, but realize it is a concern in many situations. One educator explained, “I think some of us probably use technology for the sake of the technology rather than actually concentrating on delivering a good learning experience.” It can be tempting to pursue intriguing tools with good intentions, but without evidence of effectiveness. Another faculty member discussed harnessing technology for a specific function. “I have quite a bit of experience [with] the problems students encounter: the loneliness, the motivation they sometimes lack. That basically started me thinking, how can one

use technology to bridge that gap?" Following are examples of ways that BL researchers and practitioners around the world have used technology to solve problems and improve learning in their own contexts.

Pedagogy. Improved pedagogy is a major factor in choosing blended learning (Garrison & Kanuka, 2004; Porter et al., 2014). For our respondents pedagogical enhancements manifested in several ways including student engagement, personalization, communication, and learning outcomes.

Student engagement. While engagement is difficult to define, it is a major concern for educators (Griffin, 2014; Halverson, Graham, Spring & Drysdale, 2014; Owston, York & Murtha, 2013). Many reported that students seemed more engaged in BL than traditional models. A secondary-school teacher in Africa illustrated, "Imagine if I said to them, 'Do me a propaganda trailer [instead of a poster].' That would get them so spiked...they'd actually do the research and probably put more effort into it." A university professor in Europe related similar experiences, "I tend to use simulation games to help really bring theory alive...a lot of students aren't as interested in theory as they might have been, but sometimes...they see an action and a consequence and start to look for the theory." Others provide the teachers with tools they need to adapt content to the needs of their students around the world. "We challenge them with something they haven't seen before…the class has to do something. They might have a contest… they might create a human histogram…. And no two uses of any given Blossoms videos in different classes will be the same." At an African university students are producing better work with better affective outcomes through BL. "I have had students spending hours with me…to justify their report text…so that it will 'look good' when publicly displayed…Some of my Engineers, who traditionally *hated* English…started writing little monographs…Use of the

Internet apparently stirred authorial ambitions which had hitherto been dormant." These instructors found, despite vastly different contexts, that using blending to raise engagement helped students connect more with their content. While each institution and even course will have its own needs, all need to foster student engagement and can learn from experiences from similar and dissimilar contexts.

Personalization. Personalization took several forms for participants. One professor in Asia uses technology to reach students with specific interests. "I'll say...'those of you who have more interest and/or are confused…here's where to go to learn more about it.'" This allows him to efficiently reach his students at different levels of understanding. Another institution, this time in Europe and based primarily online, uses supplementary face-to-face sessions to cater to the needs of their students. Students can attend "face-to-face tuition sessions that [are]...more interactive... it's just offering a different kind of learning." Rather than focusing on diversifying content this institution varies learning experiences. Making changes in either arena can provide students with the information and experiences they need.

A professor in Europe found, each student experience is unique, "sometimes you might use the same simulation approach, but the learner gets different things out of the experience according to their level of understanding." A single flexible learning experience might fill the needs of many students. Another professor in Europe uses blending to reach a class of "sixty-ninety students which is…too large [a] group for foreign language learning" in the traditional model. She finds "if there are 60 [students]...they are at 60 different levels….Grammar [online gives]...lower level students…time to search for additional resources…[and] higher level students…just finish it in their own time." These students participate in the same experience with different results, but in this case the time they spend is variable. Every student can spend the time

they need without falling behind or waiting for others. Students all bring a unique set of experiences and understandings to each lesson, and adapting lessons to specific needs through blending can help students learn effectively. All students are individuals, and strategies for personalized teaching can be applicable regardless of locale.

Communication. Though BL often reduces seat time, it can improve communication. One professor in Asia noted that an asynchronous component gives students a chance to avoid feeling like "they're asking a question that shouldn't be asked in the class." This can be especially important for more reticent students or students from more reserved cultures. "Since English is their second language, they're usually...more comfortable in using an asynchronous model where they think through what they want to write as opposed to having to try to speak it... it's also a bit of a cultural issue...they like to think things through more before they respond...whereas an American would just pop off." In some cases communication is affected by culture, but even the most outspoken cultures produce some reserved students, and more and more students from many backgrounds are found within a single classroom. A teacher in Africa experienced enhanced face-to-face communication. "I'll walk around and I'll talk to them and we'll share ideas. Some of them will come and ask me stuff and other times they're just talking to each other. Though, you know, there's stuff happening that wouldn't happen within a traditional classroom." Different contexts and learning outcomes require unique adjustments, but there are many possibilities, as illustrated by these differing examples, for improving communication through blending. Whether the issues is with reticent students due to culture or subject matter or opportunity BL practitioners can learn from each other about improved communication.

Learning outcomes. Learning outcomes has been an important topic in research on BL (Miyazoe & Anderson, 2010; Spring & Graham, under review). One second-language teacher found students "come prepared and therefore feel more confident speaking. [Also] because a lot of material is supposed to be covered during class time, speaking would be the first…off the list because there would not be enough time...this way we free up the class time for [speaking]." Learning may improve in any context when time-consuming, but important learning activities are possible. Another instructor finds that BL provides stronger evidence of student work, so that he is "comfortable in awarding higher grades." In some contexts it is crucial to support marks with evidence that BL can help provide. Learner outcomes are the most prevalent concern among all of our respondents regardless of location. Strategies like freeing-up time, creating evidence of student work and many others can be applied in a variety of contexts. Working as a community toward this goal may help researchers and practitioners worldwide reach it more efficiently.

Flexibility. Flexibility is a well-documented benefit of BL (Graham, 2006; Hahessy et al., 2014; Vaughan, 2007). Participants experienced flexibility through BL in terms of both time and place. Around the work instructors and discovering interesting ways that BL can create flexibility for their students. One professor in Asia shared, "I'll say, 'Alright, I'll stick around here for the remainder of the designated class time if anybody wants to have a personal chat, but other than that, you're free to go!'" This allows interested students to receive more attention and others to spend their time elsewhere. Other universities have flexible physical locations. One professor in the US explained that her institution has "online courses so [students] can go home...[and take classes during breaks which] helps them graduate sooner." Another institution in Europe serves non-traditional students with other "commitments, which means they may not be able to attend a Saturday face-to-face tuition session. It's optional, but we do strongly

recommend that they attend." A blended model allows these students to use their time in ways that will be the most beneficial to them. One secondary teacher is working to create n flexible environment in his library. "It's about the flexibility...you're not only going outside of your traditional space and time...We're trying to get this library into this informal learning area." In this school the flexibility is encompassing time and space as well as the environs the students learn in. There are many facets of flexibility that can be enhanced by BL as necessary in different contexts. Improved flexibility regardless of point of origin, can be helpful in many contexts.

Social Justice. As BL spreads to developing countries there are concerns about educational colonialism and social justice (Frehywot et al., 2013, Gunga & Ricketts, 2007; Larson & Murray, 2008.) This is of course most common in areas where resources are not available to design original content, but is also an issue for designers elsewhere. One professor explained, in terms of "providing education and training to people in remote and isolated places, the easier you could do it, the more people could be in it, and the better educated your community could be." The familiar benefits of blending can provide education to more people. Another professor is motivated by, "the common good rather than individual greed, arrogance, and selfishness...I want to have these shared…understandings." Educators often aim to help others, so it is reasonable that this would also be a motivator for blending.

The common method of improving learning worldwide through sharing content may be the new colonialism. "This whole ethos that we produce the best knowledge in the US or Europe and Moodle's a brilliant way for people in poor countries to access them and get the best knowledge is utter, utter, utter rubbish." One professor we spoke with suggested, "what we should be doing is enabling African educators to train African people in African interests. Not learn second-rate." He argues that importing content "is actually a danger to…[improving

education]. It enables imperial[ism] to be much more prevalent. It's much easier for an academic or teacher in a poorer part of the world to download something and just use it than it is for them to develop their own." He shared a particularly salient experience:

> I was struck years ago…in Ethiopia....All the learning posters for the non-Ethiopian alphabet, so your Latin alphabet, had pictures of European things. *Y* for *Yacht*. Now come on, how's a kid in a poor part of central Ethiopia ever going to have seen a yacht? Or *A* for *Apple?*...For sums, *2+2=4*. It had two yachts and two yachts equals four yachts. And—ah! It should be things that they know locally.

While it is becoming easier and cheaper to disseminate content around the world these issues must be addressed to avoid causing more harm than good. One professor shared his goals for social justice in BL, "I want to support the aspirations of my African brothers and sisters in developing their own solutions." As we share and become more collaborative we will need to confront these complex issues, which are present for both the creators and recipients of content. This is a global concern that is best faced by a strong international community.

Adoption

In order for BL to grow it must move from implementation by individual instructors to adoption across an institution. Graham, Woodfield and Harrison (2012) posited that BL adoption occurs in three stages: (a) awareness/exploration, (b) adoption/early implementation, and (c) mature implementation/growth. We would place almost all of the institutions our respondents discussed with us in stage I, *awareness/exploration*. An institution in our study that is significantly developed in terms of BL has strong administrative backing. It serves non-traditional students in Europe who need flexible scheduling, and the administration has adapted the model of their institution accordingly. This institution provided our strongest example of *top-down* adoption. One similar institution employed a "combination" that was "probably more administrators". This secondary school in Africa experienced widespread change catalyzed by

administrative involvement, but also strongly supported by "little pockets of people that are really keen". Both examples with wider adoption involved robust administrative backing.

Institutions where instructors drove BL implementation experienced acceptance on a smaller scale. One instructor in Europe shared, "I've had really, very little influence on my colleagues." Her administration is "encouraging, but that's about it." A supportive administration is an asset, but broader changes require advocacy. A university in Africa is "very pro-change" and gives lecturers the freedom to implement their strong ideas and share with one another. We found one unique example at another university in Africa. In this case the university has implemented an LMS that many faculty oppose. As a result faculty have started another platform for BL. Over time this approach has spread around the university. In most cases faculty encouragement is important for a successful BL adoption, but must be coupled with an institution-wide strategy, structure and support for adoption to succeed on a larger scale (Porter, Graham, Spring & Welch, 2014). Most instructors are facing barriers to institutional adoption that threaten their BL programs. Implementing alone and struggling with one's institution is time consuming, but as practitioners reach out to learn about successes regardless of location they will be more successful and simultaneously build the BL network.

Instructor experiences. Faculty support is an important part of BL adoption (Moskal, Dziuban & Hartman, 2013; Porter et al., 2014; Taylor & Newton, 2013). Our participants mentioned several barriers including technology. In South Africa many teachers in rural areas have limited access to technology. Teachers with more resources struggle to use them and are "still trying to take baby steps." A professor based in Asia shared that teachers who are asked to implement technology struggle to use it effectively, "some people just throw their lecture slides up there and do very little." Some students are also not prepared for the changes, "It's a mutual

acclimation…little by little they realize the way you're coming at things and vice versa." Blended learning requires a change in both teaching and learning, so instructors and students must both be prepared to succeed.

Implementation requires time from busy potential adopters. At one European university "blended learning has proven to be...a lot of additional work and people are not willing to undertake the additional workloads." Sometimes extra effort is not recognized by students or colleagues. "I'm surprised that communication with the instructor didn't stand out [in evaluations]…Because from my point of view...all I did the whole semester was answering emails and seeing people in video calls and discussing in discussion threads." It can be difficult to shoulder a heavier workload or convince others to experiment with BL when it seems under appreciated.

Because of the obstacles to BL, it is often necessary to cultivate faculty buy-in. Extrinsic motivators such as giving teachers iPads, are usually surpassed by intrinsic reasons. Some institutions experience outside recognition as in one school in Africa is receiving such appreciation, "the newspapers... had an article [saying] that our school was....[an] iPad Pioneer." Training also helps faculty invest in BL. Teachers "have weekly meetings with the... *iPad Champions*. In a sense, they're the pioneers. They're going out there to get everyone else, [to] share and cross-pollinate." One worldwide initiative trains teachers to encourage and prepare them for blending. "In each of our partner countries...We trained them (a) on how to use this in the classroom and (b) on how to design and create these themselves... they must become a co-producer as well as a co-user." A strong focus on training suggests that decision makers believe that teachers would blend with the right tools. Issues with technology, time, and buy-in are

present worldwide and recommendations for addressing them can be applied regardless of region.

Access

Many of the struggles faced involve access to BL. Cultural imperialism through content, limited access to technology, and isolated students and teachers must be addressed in several contexts.

Cultural imperialism. We discussed above some of the concerns about importing content to developing nations. Similar issues existed in developing locations within other countries. One professor discussed problems with content even within a single nation:

> "If you wanted to teach coastal communities about the role of trade unions in the development of the country, you better talk about waterside workers…[but] in rural areas you've got to talk about shearers unions….You've got to be able to have systems that are appropriately moderated so that while students are doing very different things, they're doing the different things at the same level so you can moderate their learning outcomes even though they're not the same curriculum, the same content."

This issue is exacerbated by standardized testing: "if you've got students that are in remote, difficult, and isolated places...they're not all the same, none of them are the same... the subtleties are not picked up by these kinds of standard tests." Content created for the majority and then shared, while more efficient, can inadvertently disadvantage the minority students. The specifics of waterside workers and shearers unions will apply to very distinct locales, but these divides exist in any country or region with a large enough population.

Even developed, well-funded countries experience these issues. One professor using computer simulations explained, "we don't mind working in dollars, yen, and euros with a lot of the global games, but sometimes...the games we use are coming from different countries...mainly the United States, I suppose, and they all use...language that's peculiar to how business is carried

out in the United States." This might be helpful for preparing students for international business, but it also makes it more difficult for them to learn business in their own context, or in the context of places they may work that don't have "thousands of hours" to develop such software.

Initiatives exist to help people worldwide create customized content. One group from MIT called Blossoms wants "the world to be creating Blossoms lessons, not just MIT folks." One of their mainstays is "cultural awareness and cultural appreciation" while improving pedagogy, "each country has its own style of teaching and learning." The professor we spoke with gave several examples of how people "celebrate their culture" through creating unique content and then making it available to others:

> They show a shot of the Malaysian wedding in a big banquet hall and then they say, 'Well, how is the Malaysian wedding relate to the topology of the internet network?'...In Pakistan one of them is called "Donkey Cart Physics". A huge fraction of traffic in the streets of Pakistan are donkey carts….[If you] load up the cart wrong, the donkey's front legs go up in the air...We like to celebrate this culture because we worry [about] the students who use these lessons in their classrooms—not only to learn the math and science, but also to become culturally aware, culturally appreciative, and see people who look different, talk different from them be able to teach them things. And so that's another goal of Blossoms.

The goal is not to remove culture from education, but to give students an opportunity to focus on and share their own culture and experience new cultures. As the world becomes essentially smaller and more connected, BL researchers and practitioners will need to address the overlap and will be more equipped to do so as part of a strong network.

In some regions this is less of a concern. One teacher shared, "I think what helps, generally, is that we are very open to other cultures. So English language and the level of language competence in Serbia is quite high. So not just people learning English, but people using technology and TV and radio know a lot of English." This acceptance of other cultures is seen as positive in this context, which helps people learn and become aware of other cultures.

Decisions about responding to globalization will be better informed if they take in these experiences as well.

Technology. BL requires some level of technology access. One concern is that "you've got to have connectivity of some sort and you've got to have a high-level device to be able to deliver that. Unless everybody has access to both of those, that will increase inequality." While the goal is to improve education for everyone, greater inequality can actually make things worse for many. One professor in Europe makes adjustments based on university policies: "we can't assume that people have a computer and resources outside of classes. The reality is that they do, but I can't because of the way university regulations are set up." This is one way to combat inequality, but limits students that actually do have access. Some European students "have a very low, poor connection in their dorms, so they would have to go to the university library or maybe Internet cafes or something, so this is very tricky. They wouldn't have access to internet all the time, that's why we never actually tried synchronous online learning." Sometimes access to technology limits the type of blending that can be accomplished.

Everyone that discussed technological difficulties also shared solutions. Some of the most encouraging information came from Africa. One teacher explained, "If you're sharp, you can find it...there is a fair amount of WI-FI available." Another professor in Africa is also using mobile technology to reach students: "Everybody has…smart phones nowadays. You can use the smart phones to download these documents, podcasts and vodcasts." A professor working in another part of Africa agreed, "it's possible to do [blended learning] anywhere in Africa if you have connectivity and the will." There has to be Internet to connect to, but driven students can usually find a way to access information. Of course some areas do not worry about Internet access at all. A professor in Asia shared, "in general, the Internet performance and capability and

access mobility is better than in the US. You can use your mobile phone in a subway train in Hong Kong." Each region has technology problems and adaptations, but many overlap enough to share useful information and solutions. Concerns about access, funding, location and similar issues are also often more similar between regions than within them. Making useful solutions more readily available to practitioners and researchers regardless of locale can help everyone improve their own context more efficiently.

Rural and remote locations. Several regions include extremely isolated and rural students and teachers. One professor in Oceania described the divide there:

> "Most of the people who taught in the rural and remote places came from urban places….They're going to teach in places where they've never been to before. The social context is different…unless you knew how to live within that social context, you get yourself very quickly isolated as a teacher. [You are] significantly less-effective if you're excluded from the community."

Even established remote teachers face difficulties. One teacher in Africa described challenges for their rural teachers, most "teachers in the rural areas, were qualified many, many years ago when there was no technology. They don't even have overhead projectors." It can be hard for an isolated teacher to stay abreast with new developments. Technology is however still useful in rural areas. Another participant shared "the poorly educated students, particularly those from rural areas, hungered for technology and were delighted to be given a chance to use it as part of actual lessons." Though technology can be difficult to implement in some circumstances it is a worthwhile endeavor that can greatly benefit students. Remoteness is more prevalent in some places than others, but exists on a spectrum and every region will have some who experience a type of these challenges.

Remoteness does not at all denote a lack of ideas or innovation. One North American working worldwide shared an important learning moment in an unlikely locale:

> We had this "Aha moment"…in a remote, poor village in the center of China...They were in a classroom with two incandescent lights hanging from a sod ceiling and it was an unheated classroom, by the way, it was cold outside. There was a donated VCR and old TV in the front of the classroom and the teacher would show that lecture which was made way earlier in Shanghai by [another] teacher. And then the live teacher that we watched would on occasion stop the video and let the class react to it...And I said to my colleague, 'Wow, what if we designed videos to be interrupted. What if we designed them to be a duet with the in-class teacher giving half the lesson...and the other half be made by us?' That was the 'Aha moment'...we are now in year six of this service project.

This sort of innovation is possible and feasible when people are willing to leave their own contexts and learn from the ideas of others, regardless of their circumstances. A stronger BL network would support these types of experiences as well as globally learning from them when they occur.

Potential

Blended Learning is growing and developing to fit the needs of students, educators, and institutions. Those that we spoke with have high hopes for BL in the future, particularly in terms of harnessing technology, improving engagement, and collaborating within the field.

Technology. Access to and comfort with technology are important for students and teachers who are blending (Bhuasiri, Xaymoungkhoun, Zo, Rho, & Ciganek, 2012; Cheawjindakarn, Suwannatthachote & Theeraroungchaisri, 2012). Two participants discussed their hope for more widespread technology use, especially student access, "I want to see as many schools as possible encouraging their kids to access the available technologies and to use them in educational sound and sustainable ways." One also looks forward to more comfort for teachers like a colleague who has had a difficult time adjusting, "he's worked up the courage to ask one of my librarian[s]…' will you set up the DVD player for me?' And then he goes and watches DVDs. So you know, anyone can take the step." Another lecturer in Africa "would like to translate the success I have had in live workshops…into workable MOOCs which somehow

capture the personal interest I have been able to inject into live workshops." This use of technology would allow her to reach students more efficiently. Technology is becoming increasingly prevalent worldwide and institutions are experimenting with new tools every day. Some technology is more available for learning in some places than others. For instance mobile phones and tables were much more commonly used in by our respondents Africa while they seem to have been passed over in favor of personal computers by participants North America and Europe. Practitioners in all of these places may benefit from the use of mobile learning and the findings of colleagues overseas if they could more easily connect.

Interaction and engagement. Enhancing interaction and engagement through technology is a common goal. Participants agreed that interaction can be adjusted but not removed, "You still need that kind of facilitation. Whether that's physical in face-to-face interaction or whether that's online interaction, you need some kind of facilitator, some kind of guide, some kind of mentor through that process." Some feel that BL is falling short of it's potential at this stage. "I think one hint is technology being used far too much just for content distribution rather than for the exciting potential it has to interact and shaping communities…" Others are hoping to address this problem at their own institutions. Some are focusing on student awareness; "We can certainly improve that [engagement] with better communication and creating a better awareness of what's available online and the benefits of each learning support." Engagement can be improved at all levels, and must be addressed in order to maximize the possible benefits of BL. This common concern would be best supported through a BL network rather than individually in each context. While there are many factors influencing engagement and strong pedagogy they are relevant to every instructor and every student.

Collaboration. Many participants are excited about the possibilities of collaboration among BL advocates. One professor in Africa explained, "We need to share our ideas. Every country has got its different problems but we all aim to support the students. So whatever we can share with each other is a wonderful idea and I would love to be part of that." We see common goals of improved learning for students across the world. Another professor in Europe agreed, "None of us are going to solve this, but we're all chipping away at bits of it and it's a collective endeavor…. There are hundreds of us out there. Maybe together we can make some progress." Steps toward greater collaboration can be taken even within a single institution. "[BL] can easily get siloed within individual disciplines…I would hope to see…looking across different areas and engaging practice as well as academia." As we begin to cooperate with one another within our own institutions and around the world we will be better able to improve BL for all of our students.

Definition. One participant questions the definition of BL. "we don't have a clear category of face-to-face, we don't have a clear category of online. So having a category that brings the two together is even less clear for me… it's too blunt a category to really—to discriminate in a useful way." If we are to build the field or teach and design efficiently we must delineate our model. We asked survey respondents to define blended learning and coded their answers using pre-existing codes (see Table 20). Half of participants (50.0%) gave a basic definition, while another third (34.8%) gave a qualified one. Only a few supplied basic+ (6.5%) or other (8.7%). On the whole regional percentages were similar to the whole. Participants from Oceania shared a higher proportion of qualified definitions (66.7%) and a lower of basic ones (33.3%). Respondents from Latin America gave the most unique responses (66.7%), suggesting that the definitions used for blending may be more particular in that region. The types of

definitions generally align, but are also quite broad. The community may need to be more specific if it is to make significant improvements.

Table 20
A priori codes used to analyze definitions of blended learning.

Code	Definition	Example
Basic	Combing face-to-face and online learning	"Mix of face-to-face and online teaching & learning"
Basic+	Adding in other dimensions that might be blended	"Blended learning is a combination of a number affordances (e.g., f2f and online) or a combination of pedagogies."
Qualified	Requiring some kind of quality.	"Combining online learning and face-to-face learning to exploit the best out of both methods for the given learning objectives."
Other		"I think that the term is fundamentally flawed; I wouldn't define it, but would rather replace it."

Conclusion

Through our discussions with blended learning researchers and practitioners around the world we gained a greater understanding of the state of the field. We have learned that there are widespread demographic similarities including context, level of blend, terms for blending that can promote interaction and collaboration within the field. We also found that practitioners worldwide share similar reasons for using BL in their teaching. Those we spoke with also had similar difficulties with implementing and maintaining BL in the form of adoption issues and problems with access. They also shared their strategies for dealing with overcoming them and their common hopes for the future. As they each strive to improve their own research and practice they have developed various approaches to common BL issues that can be applied and adapted by others regardless of context. These findings suggest to us that BL researchers and practitioners across the world have more common experiences than particular ones, and that as each strives to improve his or her own teaching and context, new discoveries can be widely

applicable. Forging the strong BL community we seem to be prepared for will promote more efficient improvement and better education for all of our students.

Future research should look at each region in more detail to learn more about regional issues and work toward solutions to concerns within each region as well as crossover between different contexts. It might also examine shared characteristics that might lend themselves to efficient transfer. Future research might also answer questions about how collaboration is currently happening, what the barriers are, and how they can be overcome so that the field of BL can become stronger and individual researchers and practitioners can connect with and learn from one another.

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Article 3 - Appendix A

Interview Protocol

Content Areas and Potential Probes:

1. Blended learning (BL) research questions
    a. You mentioned some research questions you are working on concerning professional students, what interests you in these questions?
    b. Are you aware of other researchers focused on these topics?
2. Impactful BL researchers
    a. Who do you think are the most impactful BL researchers?
    b. How do you determine which researchers you feel are the most impactful?
    c. Do you focus primarily on researchers in your region or elsewhere?
3. BL conversations
    a. What BL conversations are you aware of?
    b. What is the nature of these conversations?
    c. Which conversations do you participate in?
    d. How do you decide which conversations to participate in?
    e. What do you think can be done to improve these conversations
4. BL models
    a. Which BL models do you think are the most useful?
    b. Which BL models do you think are the most useful within your region?
    c. What do you think can be done to improve the development of BL models?
    d. What do you think can be done to improve the use of BL models?
5. Purpose of BL
    a. Why are you interested in BL?
    b. Do you feel that BL is a useful teaching and learning format? Why or why not?
    c. What do you think BL's potential is?
    d. What do you think BL's potential is within your region?
    e. Under what circumstances do you think BL is the most useful? For which types of learners? In which types of environments?
6. BL adoption patterns
    a. In which stage of adoption would you classify your institution in: Early Exploration, Adoption, Evaluation and Improvement?
    b. Is BL adoption a grassroots, top down or some other type of process at your institution?
    c. How has your institution adapted BL to fit its specific needs?
    d. What changes have been made to accommodate and support BL?
7. Regional BL adaptations
    a. How has your region adapted BL to fit its specific needs?
    b. What cultural issues support BL?
    c. What cultural issues make BL more difficult?
    d. Do you feel that BL in your region is more similar to or different from BL in other regions?
8. Probes will also be gleaned from the participants' answers to the survey

THESIS CONCLUSION

In this article the authors: (a) compared the top cited blended learning (BL) articles to understand which articles from each region are the most cited, how the regions compare in terms of citations and which journals publish these highly cited articles; (b) delved deeper into the top articles to discover and compare the topics and themes of the top articles on BL from different regions of the world; and (c) took a snapshot of the present state of blended learning. The authors began by constructing a broad overview of the field, followed by more specific focus on the themes of top articles, and finally took an in-depth look at a handful of BL contexts.

The field of international blended learning is prepared for stronger communication and collaboration. Collaboration is currently limited, and regions vary greatly in terms of citations. However, BL is growing worldwide and each region has much to offer to the community. There are also strong similarities in BL research processes, practice, terminology, and focus. Among the top cited articles these characteristics are more alike than not between regions. There are small differences between the top articles in each region and the top articles in general as analyzed by Halverson et al. (2012), but they follow largely similar patterns, which indicates that the most cited articles from around the world could fit well within the topical, research, and publication practices of the field at large. Finally specific experiences and concerns of BL researchers and practitioners worldwide overlap greatly. While there is a large disparity in citation patterns, there is agreement about publication venues, research methods, themes, and many shared experiences around the world. We believe that the global BL community is prepared for greater collaboration and that such sharing will result in great benefits.

Future research should look further into areas of the field that work and publish in languages other than English. We are especially interested in Latin American experiences; as we

struggled to locate articles that fit our criteria we came across many in other languages, which suggests a thriving community we could not tap. Future research might also look more specifically into certain regions to learn more about the nuances and developments that have been made. It may also consider the attributes that regions share or that might support more efficient sharing and collaboration around the world.