

The Present and Future State of Blended Learning at Workplace-Learning Settings in Adult Education: A Systematic Review

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Abstract

The main objective of this study is to examine the present and future state of blended learning (BL) for adults in workplace-learning settings. Data were collected in numerous areas from various databases and sources from 1990 to June 2018. This topic was found mainly in the fields of education and business. The data collected were thoroughly analyzed and evaluated, and a quality assessment of the literature was carried out. Major findings of the studies were analyzed. Eighteen peer-reviewed articles were selected, as were 10 surveys, five qualitative studies, two case studies, and one randomized control trial, which included studies carried out in different parts of the world. The sample size of the studies under analysis ranged from 16 to 674 participants, and the aggregate sample size was 3,250. The length of the investigations ranged from 4 weeks to 7 months. Conclusions: The findings showed that BL is expected to be more prevalent in workplace environments due to the use of authentic and collaborative learning approaches.

Key words: *Blended learning, Hybrid learning, Workplace training, On-the-job training, Adult education, Workplace learning.*

Introduction

Workplace learning has become a topic of increased research interest, and the workplace-learning processes of numerous professional groups, including teachers, HR professionals, nurses, engineers, instructors, and accountants, have been investigated. Large changes in organizational environments require people in every workplace to continually learn. In fact, learning is considered a major aspect of individual and organizational growth and innovation (Collis et al., 2005), whereas others view it as providing a key competitive advantage (Bonk et al., 2007). Recently, the emergence of technological evolution and a “knowledge-driven economy” meant that economic growth opportunities arose due to technological advancement. This emergence led to the widespread use of non-traditional learning opportunities in adult academic and work settings (Schildermans & Schreurs, 2010), signaling a shift from the Industrial Age to the Information Age

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(David et al., 2012). In many instances, blended learning (BL), or “hybrid learning,” is one innovative method that has been successfully utilized in higher education and workplaces (Bonk et al., 2006a). The term “hybrid course” was used prior to “blended learning”; both are now used interchangeably in higher education (Graham, 2009). Two more terms for blended learning, used in Arabic, are “integrated learning” and “multi-learning methods” (Al-Shahwan, 2015).

Because there are many unknowns concerning BL in the training program area, BL in adult work settings and workplaces faces particular challenges, including large training class sizes, inadequate facilities, and effective implementation in organizations (Chang et al., 2014). According to Kim et al. (2008), BL represents a major trend in adult workplace settings. BL integrates opposing training approaches—online and face-to-face experiences, collegial connections and digital references—to attain individual and organizational goals. Graham (2006) specifies and categorizes three definitions of BL widely used in current research. BL is defined by its delivery media or instructional modalities, its combination of instructional methods, or its combination of face-to-face and online instruction. BL has become an important factor in corporate, government, military, and nonprofit organization workplace growth (Teng et al., 2007).

Graham (2006) also reports that BL can be delivered at four levels: the institutional level, the activity level, the course level, and the program level. At the institutional level, organizations decide how to implement BL. By contrast, activity-level blends have instructors and stakeholders, and BL occurs during the process of training. Course-level blends should be pre-planned by the instructor. A program-level blend assumes the student will be involved in courses that include both online and face-to-face communication (Graham, 2006; Graham, 2009).

Workplace learning involves people who use different formal and informal learning strategies. Although BL is recognized by many organizations, various issues should be addressed in terms of delivering this kind of learning in workplace-learning settings (Kim et al., 2008).

BL involves multiple technologies and delivery methods, though there is insufficient knowledge about the relationship between predictors of success and actual success, learners' satisfaction, and the learners' ability to transfer knowledge in online learning (Gunawardena et al., 2010). Moreover, BL is asynchronous learning: this is a student-centered teaching approach that uses educational technologies to deliver the information to the adult students; the teacher merely facilitates the learning process. The learners can access materials anywhere and at any time, and can work at their own pace. Numerous BL applications and models can be useful in adult

workplace learning, such as a synchronous chat or videoconferencing (Bonk et al., 2006a; Graham, 2006). The variety of possible BL techniques and technologies may create confusion among practitioners concerning the decision about which BL techniques are optimal and how to evaluate BL programs or tools. Considering the numerous knowledge gaps concerning BL in the workplace, guidelines should be developed so that human resources development (HRD) professionals are aware of the optimal BL techniques for delivering training to adults in their organizations (Kim et al., 2008).

The future of BL and its consequences for the design delivery of job training should be studied to allow BL practitioners to respond to rapid changes in their field and enhance organizational performance.

After examining survey results over the past several years, Kim et al. (2008) reported that most respondents admitted that the use of BL approaches in the workplace improved their job satisfaction, job performance, and productivity levels. Governmental and societal needs require BL applications in adult workplaces. Because of its effectiveness, most respondents thought that policymakers should consider BL training in the workplace (Bonk et al., 2006b). BL will be used increasingly until it becomes the standard in adult workplace settings (Schildermans & Schreurs, 2010; Mohanty, 1988). Moreover, analysts recommend that BL be put into practice during training and development planning in their organizations (Bonk et al., 2006 a&b).

Most organizations and trainees perceive BL to be faster and more effective, low-cost, flexible, and scalable for workplace training. Therefore, organizations and trainees support the use of BL learning for the following reasons: extending the reach to a broader group of employees; cost and time optimization; and greater effectiveness over traditional forms of instruction. Pennsylvania State University, the American Society for Training and Development, Stanford University, and the University of Tennessee have provided detailed mechanisms that illustrate how BL is more effective than traditional and individual forms of online teaching (Singh, 2003). Employees expect that BL will be increasingly implemented as a more authentic, personalized, and student-centered learning approach in the digital age workplace.

Because BL has been found to be the most efficient and widely used approach to teaching in education, businesses, and organizations, researchers recommend that it has become a core component of workplace training environments. For example, smartphones can be used in training to allow convenient and flexible learning for the busy professional because they can access

learning materials from their location (Boitshwarelo, 2009; Macdonald & Chiu, 2011; Dzakiria et al., 2012). Overall, the online environment plays a crucial role in BL, and its quality remains a major concern when considering BL in organizational workplace settings because it has replaced “on-the-job training” in a knowledge-based economy (Mata-Domingo, 2018; Lee & Bonk, 2014; Peters, 2007; Ruey, 2010). Therefore, the implementation of BL approaches introduces the major benefits of e-learning, which deliver “just-in-time” training to busy professionals (Bielawski & Metcalf, 2003).

The aim of this paper is to examine the present and future state of BL for adults in workplace learning settings.

This study provides review of theoretical and conceptual frameworks and an analysis of the primary research findings of recent studies to determine major current trends in BL and future trends in workplace-learning settings. The different types of studies reviewed for this research paper allow for the generation of a particular perspective and evidence concerning the issue under analysis. Accordingly, this research paper aims to identify future directions of BL in workplace settings based on the research findings of other studies.

Blended Learning Theory

Carman (2002) points out that many theories could apply to BL in different workplace situations. He emphasis is on the relationship between the nature of the learning task in educational or training environments and its characteristics when situated in real use.

The five key elements of BL processes stem from the learning theories are:

- (1) **Live Events:** Synchronous, instructor-led learning events in which all learners participate at the same time, such as in a live “virtual classroom.”
- (2) **Online Content:** Learning experiences that the learner completes individually, at his own speed and on his own time, such as interactive Internet-based or CD-ROM training.
- (3) **Collaboration:** Environments in which learners communicate with each other, such as e-mail, threaded discussions, and online chat.
- (4) **Assessment:** A measure of learners’ knowledge. Pre-assessments can come before live or self-paced events to determine prior knowledge, and post-assessments can occur following scheduled or online learning events to measure learning transfer.
- (5) **Reference Materials:** On-the-job reference materials that enhance learning retention and transfer, including PDA downloads and PDFs (Carman, 2002, p. 2).

Purpose of the Study

The purpose of this paper is to investigate the present and future trends of BL in workplace settings. More specifically, this paper seeks to:

- Provide a comprehensive view of how employees perceive the practice of BL in the workplace.
 - Present the benefits and challenges of current and future BL approaches.
 - Review the role of new technologies in current BL programs on BL and determine their future importance.
 - Achieve an understanding of BL that can be used in the next few years as an effective mechanism for organizational training.
 - Review existing literature on the investigation of BL effectiveness in workplace-learning settings.

Research Questions

The following questions guide the study:

- How do employees perceive the practice of BL in the workplace?
- What are the benefits and challenges of current and future BL approaches?
- What is the role of new technologies in BL programs, and what will their importance be in the near future?
- Will BL become widely used in the next few years as a mechanism for organizational training?

Significance of the Study

Findings from this paper will contribute to the fields of blended adult pre-service training and in-service training; adult education, including adult basic education for illiterate adults and homeless or unemployed adults; and BL research in both adult education and workplaces. This paper will recommend how adult educational institutions and the business sector can best prepare, practice, and support a BL environment.

This paper is written for specialists in the field of online learning more generally, and BL more specifically. Therefore, it attempts to research BL in greater depth. In addition, while a few studies have attempted to describe the structure of BL, few have attempted to detail the present and future of BL in the workplace.

Finally, the study findings will provide an overview of BL in the workplace to provide key information for further research in both adult education and workplace training. Furthermore, the findings may provide guidelines for policymakers.

Method

Search Methods

Four methods were used in this research paper to search the relevant literature for collecting the necessary information about the issue under analysis:

- **Conventional Subject Searching:** A systematic search was made in all peer-reviewed publications in English-language journals for inclusion in this paper. The reference lists of relevant primary and review articles were also searched. Data were collected from a variety of databases, academic journals, and sources, including EBSCOhost, ProQuest, LexisNexis, ERIC, JSTOR, OAIster, Emerald, Business Source Complete, PsycINFO, and Google Scholar.

Keywords used were “blended learning,” “adult education,” “workplace learning,” and “future trends in blended learning.” The timeframe chosen for the literature was from 1990 through June 2018. The search was aimed at the identification of full-text, peer-reviewed articles, but abstracts were also reviewed to determine any references concerning the topic. Additional references were located through a review of the bibliographies of valuable studies.

- **Reference List Checking:** Reference list checking was used to identify relevant and valuable studies.
- **Contact with Experts:** In this study, collaboration with experts was a major research method used to search the relevant literature. BL experts with a solid knowledge base and expertise in adult education were engaged to determine the most valuable research papers. These experts aided in the process of determining and analyzing relevant and important studies.
- **Citation Searching (CS):** The citation search was carried out through the use of multiple databases, such as Google Scholar and GetCited.

Inclusion and Exclusion Criteria

The search and selection of papers was based on a standardized evaluation process. For papers to be selected for final review, the following five criteria had to be met:

- Studies that focused on BL in workplace-learning settings only.
- Articles published in academic, peer-reviewed journals.
- Articles published in the period 1990–2018.
- Papers from the following study settings and populations: post-graduate students, adult students, and employees of various organizations.
- Papers of a specific study type and design: three criteria that played a crucial role in the search for relevant and necessary studies—objectivity, quality, and currency—were analyzed for the articles identified.

Review Process

The articles were analyzed, and the most valuable and relevant ones were selected. Full-text articles were selected for the review. Those studies that corresponded to the inclusion criteria were indicated as relevant for data extraction and quality assessment. Objectivity and the lack of bias were the two main criteria for the analysis of each article. The resulting studies were selected on the basis of data extraction and quality evaluation.

Data Extraction

Initially, the search of the literature was carried out by use of the following keywords: “blended learning,” “learner satisfaction of blended learning,” and “workplace learning techniques.” Data were collected on the basis of the following criteria: the author, the year of publication, country of origin, the type of research paper, characteristics of participants, sample size of participants involved, method of gathering the primary information, time period of obtaining the results, and the findings.

Eighteen articles were selected: ten surveys, five qualitative studies, two case studies, and one randomized control trial. These types of studies were not randomly selected: they provided the most verified and relevant primary data due to the research methods used.

Quality Assessment

Recognizing that numerous investigations would be incorporated, studies were qualitatively assessed through standardized checklists with appropriate criteria. In this research paper, the critical checklists for qualitative studies designed by Spencer et. al. 2003 was used.

Furthermore, the assessment of study quality was carried using the evidence weights evidence by Pawson et al., 2003 and Gough 2007. It consists of seven major dimensions by which to evaluate

a research paper: accuracy, purposively, utility, propriety, accessibility, and specificity (Pawson et al., 2003; Gough, 2007). Table 1 illustrates the quality and characteristics of each study identified.

Table 1

The quality and characteristics of each study

Study	Type of study	Number of participants assessed	Weight of evidence A	Weight of evidence B	Weight of evidence C	Weight of evidence D
Kim, Bonk & Zeng, 2005	Survey	239	High	High	High	High
Collis et al., 2005	Case study	130	Medium	High	Medium	High
Bonk & Kim, 2006b	Survey	202	High	High	High	High
Kim & Bonk, 2006	Survey	562	High	High	High	High
Lewis & Orton, 2005	Qualitative study	660	High	High	High	High
Kim et al., 2007	Survey	674	High	High	High	High
Peters, 2007	Survey	29	Medium	Medium	High	Medium
Kim et al., 2008	Survey	118	Medium	High	High	High
Teng et al., 2009	Survey	112	High	Medium	High	High
Gunawardena et al., 2010	A mixed-methods design, selecting both quantitative methods and qualitative methods	37	High	High	High	High
Ruey, 2010	Case study	25	High	Medium	Medium	high
Schildermans & Schreurs, 2010	An explorative survey.	54	High	High	High	High
Macdonald & Chiu, 2011	Qualitative research project	30	High	Medium	Medium	High
Dzakiria et al., 2012	Qualitative case study	39	High	High	Medium	Medium
Van Dam, 2012	Qualitative study	200	High	High	High	High
Lee & Bonk, 2014	Survey + Discussion group	97 (Survey) 30 (Discussion)	High	Medium	High	High

Chang et al., 2014	Randomized control trial	65 (Experimental=33, Control= 32)	Medium	Medium	Medium	Medium
de Brito Neto et al., 2014	Survey	47	Medium	High	Medium	High

Findings

Search Results

The literature search found 495 abstracts, and 54 studies were identified from the citations (a total of 549 papers). Of this number, 301 abstracts were excluded on the basis of the abstract review, 86 articles were non-English, and 144 articles did not correspond to the subject under analysis, considering the inclusion criteria. Eighteen relevant peer-reviewed articles were selected on the basis of the inclusion criteria and were evaluated for suitability. Figure 1 illustrates the data selection process.

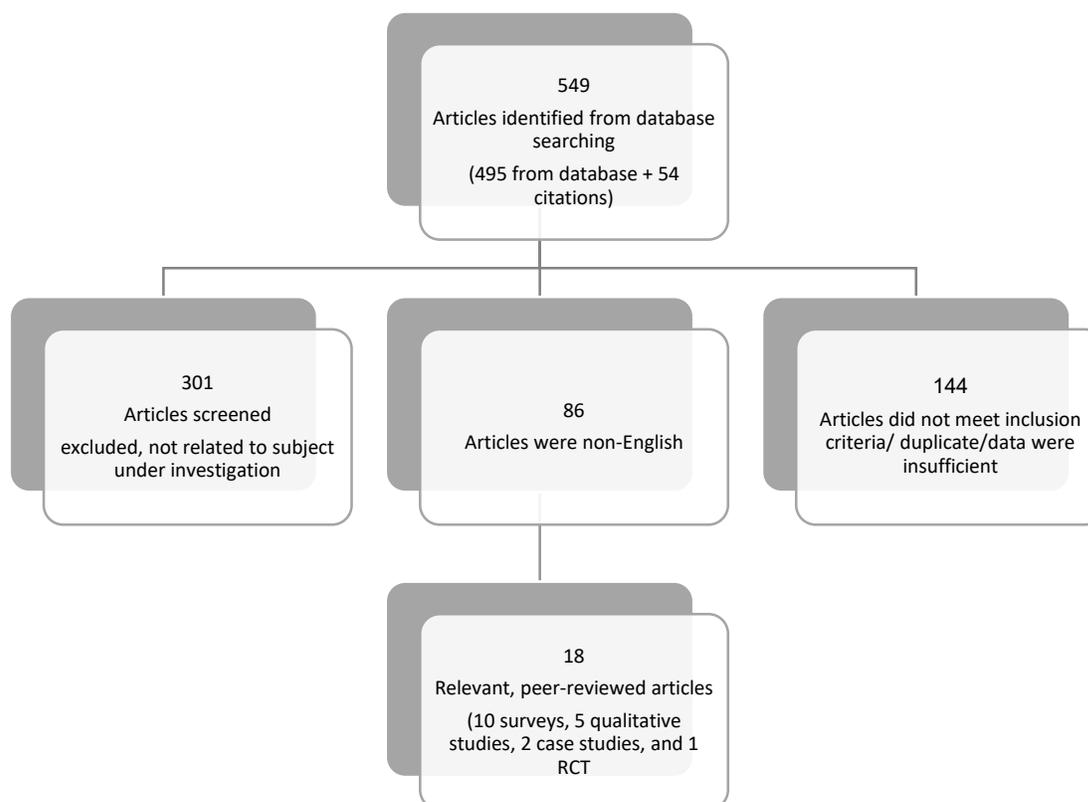


Figure 1. Flow chart diagram of the search and selection of studies

Characteristics of the Studies

Out of the eighteen articles, ten surveys, five qualitative studies, two case studies, and one randomized control trial were selected. The articles mentioned in Table 1 were selected to identify the present and future state of BL in workplace-learning settings in adult education. Ten surveys selected for this review used interviews and questionnaires as a major tool to obtain primary data. These studies were published between 2005 and 2014. All the studies are peer-reviewed, scholarly articles. The sample size of the studies ranged from 16 to 674 participants, and the aggregate sample size was 3,250. These studies were carried out in different regions worldwide: China, Korea, Taiwan, United States, and the United Kingdom: (Kim et al., 2007, Kim et al., 2009); the United States (Bonk and Kim, 2006a; Kim et al., 2005; Lee and Bonk, 2014; Kim and Bonk, 2006); Australia (Peters, 2007); Taiwan (Teng et al., 2009); and Belgium and Holland (Schildermans and Schreurs, 2010).

The sample size of the five qualitative studies ranged from 16 to 39 participants, with an aggregate sample size of 106 participants. The studies were conducted in Malaysia (Dzakiria et al., 2012), the United States (Graham, 2006; Gunawardena et al., 2010; Van Dam, 2012), and Canada (Macdonald & Chiu, 2011). The two case studies were conducted in the Netherlands (Collis et al., 2005) and the United States (Ruey, 2010). The sample size of the studies included 130 and 21 participants, respectively. A randomized control trial (Chang et al., 2014) involved 65 participants and was conducted in Taiwan.

The length of intervention ranged from 4 weeks to 7 months. All the studies under analysis investigated the present and future state of BL in workplace-learning settings. The inclusion and exclusion criteria allowed for the identification of those articles that focused primarily on BL in workplace-learning settings. The major contribution of the studies is the primary data gathered by the researchers during their own designed interviews and questionnaires, with the use of different tools to collect the necessary information.

Tools Used in the Studies

The instruments used in the studies include SurveyShare (an Internet-based survey tool), questionnaires, an achievement test, a self-assessment questionnaire, interviews, an instrumental qualitative case study approach, survey research, online surveys, in-class observations, and online observations. SurveyShare is used to assess teaching and learning, to conduct survey research, and

to evaluate the attitudes of survey participants toward the use and effectiveness of BL in organizations. All research instruments used by the researchers in the analyzed studies aimed at identifying major present and future trends in BL in adult education by using the answers, ideas, perspectives, and opinions of respondents. The instruments used are summarized in Table 2.

Table 2

Instruments used, participants' characteristics, and main outcome of the 18 studies

Study	Instrument	Participants Assessed	Positive	No Difference	Negative	Duration
Kim, Bonk, & Zeng, 2005	SurveyShare (a Web-based survey tool)	Government, Business & non-profit organizations active in e learning	BL is commonly used and expected to experience a dramatic rise in the coming years			2 months
Collis et al., 2005	Web-based Questionnaire	12 blended courses	BL is perceived as highly positive and is on demand			3 months
Bonk & Kim, 2006b	SurveyShare (a Web-based survey tool)	Various Workplace sittings (government or public administration, IT, education, most of them engaged in training development)	Vital for training planning			Approximately 3 months
Kim & Bonk, 2006	SurveyShare (a Web-based survey tool)	Mainly online teachers, professors, lecturers, & 1/4 th are administrators/ instructional designers	BL is crucial in the development and strategic planning in their organizations and online			Approximately 4 months

			learning partnerships	
Lewis & Orton, 2005	An instrumental qualitative case study approach	–	BL will be a widely used learning approach in the future	26 weeks
Kim et al., 2007	SurveyShare (a Web-based survey tool)	Respondents were from various organizations in 5 countries	BL is important and will gain more popularity in the future	Approximately 2 months
Peters, 2007	Interview	Manufacturers of mobile devices, businesses and education providers	Mobile devices will help in promoting BL	3 months
Kim et al., 2008	Questionnaire, SurveyShare	HRD professionals	BL is a popular delivery mode within workplace learning settings	5 months
Teng et al., 2009	Online survey	Belong to various types of organizations and industries involved in e learning in 5 countries	Many workers are not aware of the term blended learning	2 months
Gunawardena et al., 2010	Questionnaire, face-to-face and phone interviews, survey research	Engineers, in 3 engineering courses in a multinational corporation	Online learning are the strongest predictors of learners' satisfaction and collegial support. It, also, impacted the education program in a	3 months

Ruey, 2010	Online questionnaires, interviews, in-class observations, and online observations	Graduate-level students in 18-week course	corporate setting A constructivist learning approach is helpful in workplace settings	18 weeks
Schildermans & Schreurs, 2010	Online, web-based questionnaire	Employees from companies involved in e learning	The popularity of BL will increase in work place settings	1 month
Macdonald & Chiu, 2011	A pilot e-learning course in professional training program for workplace learners	200 hours e learning course for employees in the wood products manufacturing industry	The use of Smartphones will help increase convenience and flexibility of e-learning programs	6 weeks (200 hour) 2 months
Dzakiria et al., 2012	Interview	Business student taking Business Communication course in UUM	High satisfaction with BL compared to other learning and teaching methods	2 months
Van Dam, 2012	An instrumental qualitative case study approach	Various profit large organizations with on-job e learning & training	BL will definitely become popular in the future to have best practice in workplace	1 month
Lee & Bonk, 2014	Online survey	Multinational participants located in North America, Canada, Australia, Japan, Saudi,	BL represents an important tool to improve the transfer of knowledge and	2 months

		Switzerland & the overall Sweden involved in training & learning experience	
Chang et al., 2014	Achievement test, Self-assessment questionnaire	11th graders students, majoring in electrical engineering at a vocational high school	BL results in more positive cognition and skills 5 weeks
de Brito Neto et al., 2014	Multiple-choice questionnaire (SurveyMonkey)	Adult flight attendants	Relevant to their performance E-learning courses during Employment at international airlines

Outcome

Seventeen studies were cross-sectional and one investigation was longitudinal (Kim & Bonk, 2006). All studies used a single-group cross-sectional design, whereas one study employed a two-group randomized controlled design. The effect of blended learning was positive, indicating that e-learning improves the knowledge and skills more than conventional learning, in addition to other advantages. Only one study (Bonk & Kim, 2006b) addressed the challenges and the technology. The challenges, in descending order, were as follows: lack of understanding; insufficient management support; organization or cultural resistance; boring or low-quality content; fast-changing technology; learners lacking self-regulated learning skills; learner resistance. As regards technology, the following were used: knowledge management tools, digital libraries, online simulations, cell phones and other mobile and handheld technologies, webcasting and video streaming, wireless technologies, podcasting, intelligent agents, blogs and online journals, wikis, massive multiplayer online gaming, and e-books. Tables 2, 3 & Figure 2 displays the main outcome of the eighteen studies.

Table 3

Summary of the main outcomes of the reviewed studies

Authors	Intervention	Main Outcome
Kim, Bonk, & Zeng, 2005	Survey questionnaires to various professionals & organizations in USA	<ul style="list-style-type: none"> Positive business impact resulted in more implementation & promising future

Collis et al., 2005	Survey questionnaires from 12 courses + 6 courses leaders + 6 researchers & Designers	<ul style="list-style-type: none"> • Learners' satisfaction • Appropriate learning method, fulfilled learner's objectives • Immediate application to work • Accessible • Lower cost • Positive impact on business
Bonk & Kim, 2006	Survey questionnaires in various work sittings	<ul style="list-style-type: none"> • Appropriate learning method
Kim & Bonk 2006	Survey questionnaires College instructors & administrators in MERLOT & WCET or those with online syllabi in WLH	<ul style="list-style-type: none"> • Important in higher education using various pedagogical methods • Skills & knowledge development
Graham, 2006	Review e learning models	<ul style="list-style-type: none"> • Positive impact on business • Practical for workplace learning • Accessibility • Rich learning environment
Kim et al., 2007	Five countries survey	<ul style="list-style-type: none"> • Accessibility & availability • Lower cost
Peters, 2007	Three survey instruments were developed: manufacturer/ software developer, business, and educational provider	<ul style="list-style-type: none"> • Positive impact on business, manufacturer, & educators, thus increased implementation
Kim et al., 2008	International study of the future of blended learning in corporate training settings in which participants from China, Korea, Taiwan, the United Kingdom, and the United States	<ul style="list-style-type: none"> • Accessibility • Improved learning experience • Lower cost & cost-effectiveness • Rich learning environment • Appropriate learning method
Teng et al., 2009	Different organizations type & size including education	<ul style="list-style-type: none"> • Rich learning environment • Appropriate learning method • Lower cost • Acceptability
Gunawardena et al., 2010	Learners, instructors, and instructional designers from the United States and international sites	<ul style="list-style-type: none"> • Practical for busy professionals • Skills & knowledge development (problem-solving) • Immediate application to work • Global
Ruey, 2010	Survey, multi- course docs, observation, & interview	<ul style="list-style-type: none"> • High technology exposure • Immediate application to work & interaction with others
Schildermans & Schreurs, 2010	Survey was sent to 700 organizations	<ul style="list-style-type: none"> • Rich learning environment • Learners' satisfaction

		<ul style="list-style-type: none"> • Lower cost • Appropriate learning method • Global
Macdonald & Chiu, 2011	10 companies & two interventions <ul style="list-style-type: none"> • Web • Web + mobile 	<ul style="list-style-type: none"> • Appropriate learning method • High technology exposure: Quizzes user-friendly, less anxiety, and immediate results • Practical for busy professionals • E learning is correlated with smart phones features knowledge among learners
Dzakiria et al., 2012	Heterogeneous adult learner	<ul style="list-style-type: none"> • Encourage lifelong learning • Rich learning environment • High technology exposure
Van Dam, 2008	Case study interview on 29 organizations	<ul style="list-style-type: none"> • Reduces administration time and time off from work • Global • Lower cost • Accessibility • Rich learning environment & knowledge transfer
Lee & Bonk, 2014	Questionnaires, sticky notes, & group discussion	<ul style="list-style-type: none"> • Knowledge and skills development • Immediate application to work
Chang et al., 2014	Pretest & post test Experimental group: e learning & control group traditional learning	<ul style="list-style-type: none"> • Positive effects on cognition and skill
de Brito Neto et al., 2014	Various E courses at international airlines	<ul style="list-style-type: none"> • Improved job performance

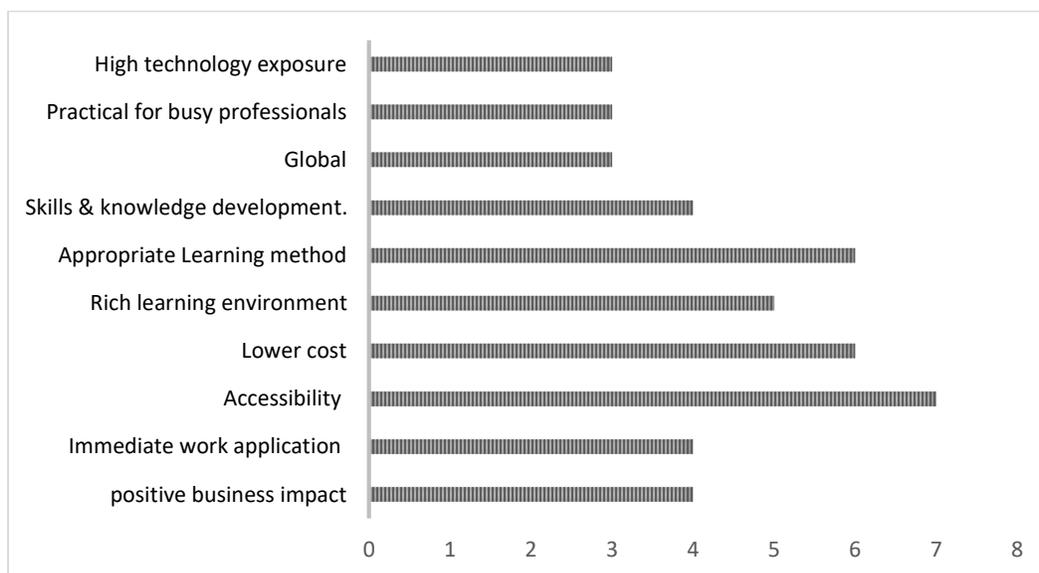


Figure 2. Graphical representation of main studies outcomes

Discussion, Conclusion and Implications

BL is a combination of online and face-to-face instruction that allows a mixture of scheduled and unscheduled learning modules, structured and unstructured learning experiences, and natural achievement differences among learners. Several factors encouraged instructors, learners, and trainers to prefer BL over other learning options: pedagogical richness, social interaction, cost effectiveness, access to knowledge, ease of revision, and personal agency (Graham, 2006). The current literature strongly supports the tendency of educational establishments and workplaces to implement BL approaches. All the studies under analysis admitted the evident advantages of BL as a mechanism for organizational training, but most studies also mentioned obstacles and challenges to successfully implementing blended learning in workplace settings.

One major obstacle is the lack of understanding of the “blended learning” concept (Teng et al., 2009), which significantly affects the survey participants’ perception of BL and its effectiveness, even if this approach is used by their organization. Rossett et al. (2003) state that there are six main challenges related to the development of BL systems: content stability, implementation and development time of the program, human interaction important to the learning process, budget, learning resources, and the nature of learning activities as individual or social. One major concern associated with the use of BL in corporate settings is that although numerous frameworks and models of BL are available in theory, their practical use by HRD professionals is not adequately observed and verified (Kim et al., 2008).

Despite the challenges and obstacles reported by both researchers and participants, BL is expected to grow significantly in workplace-learning settings (Bonk & Kim, 2006a; Kim et al., 2008; Teng et al., 2009; Schildermans & Schreurs, 2010). The literature review showed that organizations currently use BL to train their employees, and this tendency is expected to dramatically increase in the future. Since the BL approach improves the quality of the learning experience, contributes to a better transfer of knowledge, promotes collaboration and interaction, results in cost reduction, and offers new strategic directions in the organization, it is predicted to become a popular and dominant delivery mode in the future. Moreover, BL will be provided through technologies that allow learners to get involved in performance support or just-in-time training.

As the twenty-first century unfolds, most learning and training organizations focus on employee professional development techniques (more skills, knowledge, learning, and re-learning) (Berge, 2007) using BL approaches (Foley, 2007). Blended learning technologies have been highly used

in diverse fields and in both public and private sectors. Recently, leading public and private companies and universities use BL technologies and approaches to train and re-train employees, especially for multi-site and international organizations (Gunawardena et al., 2010). Kim and Bonk (2006b) assessed the present state of BL and the attitude of respondents, such as professors, instructors, lecturers, administrators, instructional designers, and students who held teaching positions. Based on these findings, Kim and Bonk (2006b) predict considerable changes in teaching and learning methods, emphasizing the widespread use of BL as a major learning approach within workplace-learning settings. Moreover, BL is predicted to grow significantly in the future and play a more essential role than online learning.

Supporting the ideas expressed by Bonk and Kim (2006 a&b), Kim et al. (2005) confirm the positive attitude of students, training professionals, and workers toward the inclusion of BL practices in workplace-learning settings. More than half of the participants predicted that their organization will likely use BL more intensively in the coming decade. Researchers also found that e-learning was widely used in organizations due to the possible vibrancy of BL in the future. Though BL may be facing challenges due to a lack of understanding about this learning approach, it is widely used by organizations (Kim et al., 2008). Obviously, HRD professionals need training and guidance concerning the meaning of BL and the ways to implement it in their organizations. Since most respondents of the eighteen articles under analysis admitted the importance of using authentic approaches to learning, the use of technologies to provide just-in-time and authentic learning for employees is predicted by both students and workers.

Whereas recent research indicates a considerably positive effect of BL on student achievement and improved work performance, Chang et al. (2014) show that it is students' self-assessment scores that are more affected by BL, not their achievement test scores. The leaders of nearly any organization will admit that BL is effective as a new mechanism for workplace settings (Collis et al., 2005). This learning approach is recognized as highly relevant to business because it can be used to identify and address immediate business issues, which results in more effective business processes by promoting collaboration and changes in work practices. BL is assumed to aid company development as a competence-based building block in which work-based operations allow the immediate use of theory in the reality of the workplace setting.

BL is emphasized in many organizations because much attention is paid to learning in the workplace through work-based activities that engage other workers as learning partners and use

business resources, which are frequently created by the employees themselves. Dzakiria et al. (2012) found that the popularity of BL techniques was determined by the advancement of technology, which provided new tools and avenues for teaching and learning, and the combination of different technologies with andragogy (adult education) or pedagogy (academic education). An important study (Graham, 2006) verified that participants were highly satisfied with BL compared to other learning and teaching methods. BL provides a comfortable middle ground, representing a pedagogical alternative, which may encourage lifelong learning initiatives worldwide. While BL is predicted to be widely used in the future, it is important to continue determining effective models of BL that may be implemented in work settings at the program, course, activity, and institutional levels, which may be implemented in the work settings.

BL can help adult learners to complete courses or training while they are in their workplace, whether to update their skills, apply for a new position or job, or pursue education as a part of their lifelong learning. Learners also specify that they expect to have their budgetary spending invested into implementing BL within their organizations in the next few years. However, they admit that several issues should be addressed to effectively provide BL in their organizations. Though learners show great optimism concerning an increased use of BL in their organizations, a lack of understanding concerning the meaning of BL remains the most pressing issue (Bonk & Kim, 2006b). The lack of commitment and support on the part of management and the organizational culture are considerable barriers to BL's successful introduction and implementation of BL. Bonk et al. (2006a) also share this assumption and believe that despite the effective use of course management systems and the tendency to emphasize the use of online learning enrollments, these systems are still used to simply "manage" learners through the focus made on administrative tasks specifically, instead of encouraging rich interactive learning experiences. This factor can significantly impede the development and implementation of BL approaches.

Bonk et al. (2006a) report the use of BL in some organizations, but they expect more extensive use in the future. Currently, BL is a prevalent delivery method within workplace settings, which implies that BL is a continuing trend in workplace-learning settings, rather than a passing fad. Future studies should focus on the technology and pedagogy used within BL in workplace settings. Today, BL is predominately used to replace or extend face-to-face environments—e.g., to promote learning communities, access guest experts, provide follow-up resources, provide supplemental

materials, extend training events, offer timely coaching, and provide online simulation activities (Van Dam, 2012).

Through their own investigation of BL in the workplace, Macdonald and Chiu (2011) and Peters (2007) noted that smartphones will have positively affect the convenience, affordability, social interactivity, and flexibility of participating in Internet-based e-learning programs. Through a social constructivist approach, the case study carried out by Ruey (2010) revealed that smartphones beneficially affected adult learners by increasing their sense of responsibility and their ability to collaborate effectively. In addition, BL facilitates their learning. Two studies (Lee & Bonk, 2014; Schildermans & Schreurs, 2010) examine the use of the Internet and BL as collaborative tools in the workplace to encourage learning, collaboration, and innovation among employees. BL is considered an excellent way to promote workplace skill development and knowledge. However, Lee and Bonk (2014) contend that there are concerns about the implementation of collaborative technologies in organizations due individual learning preferences and generational differences in the workplace. Schildermans and Schreurs (2010) state that their survey respondents predicted BL would increase in popularity, which is determined by highly individualized learning. Nevertheless, respondents also indicated several serious challenges in the near future, such as the high cost of delivery, rapidly changing technology, and inadequate information communication technology (ICT) infrastructure.

Kim, Teng, Oh, and Cheng (2008) confirm that BL will be a prominent learning approach in Western countries, the UK, the United States, and Asian countries (China, Taiwan, and Korea). This research also revealed barriers to implementing BL in workplace settings, regardless of HRD professionals' satisfaction with the results of current BL practices. The lack of understanding of the blended learning concept was the most significant obstacle (Teng et al., 2009), which implies that HRD professionals and practitioners should be aware of BL frameworks and models to be able to adapt them to their needs. Practitioners should also be competent in emerging technologies and instructional methods that can be applied to BL.

Bonk et al. (2006a) identified ten major trends and predictions regarding BL: mobile-blended learning; self-determined blended learning; increased on-demand and authenticity learning; greater individualization, hands-on, and visualization learning; linking work and learning; changed instructor roles: increased collaboration, connectedness, and community; changed calendaring, the emergence of specialists in blended learning; and blended learning course designations. These

future trends will allow adult learners to refine their skills in the workplace instead of leaving for new positions. Undoubtedly, adult learners will have more learning opportunities and options in the next few years.

Practical Implications

The results of this study demonstrate that guidelines should be created for HRD professionals on how to implement BL in their organizations. Furthermore, the results of this study, which are based on the primary data of the most relevant research, should help practitioners be more aware of the most appropriate and effective ways of developing, providing, and assessing BL approaches used within workplace-learning settings. The findings of this systematic review on the current state of BL point to the most important issues and challenges faced by HRD professionals in their attempts to implement BL in workplace-learning settings.

Additionally, the results of this study offer some direction for researchers to help managers and HRD professionals cope with the issues they face. Ultimately, the lack of adequate research on BL and its future trends makes this research extremely important. This study is significant for its predictions concerning BL in workplace settings. Also, this study's findings regarding the major barriers and challenges to implementing BL suggests those areas researchers should examine more thoroughly. Because there is much confusion and many unknowns concerning BL, training, and human performance management, and because of its growing importance to workplace learning, human resource professionals should keep abreast of BL research.

Future Aspects

The findings of the present study provide some starting points for individuals interested in pursuing research in BL. Since the study identified several current challenges in BL, these issues should be further explored to indicate whether any changes are taking place and what steps or strategies are being developed to adequately address existing problems. Furthermore, research studies may focus on creating a framework for efficient and effective professional development for HRD, HRT, and training professionals, particularly on emerging technologies and how they can be utilized in BL. Considering that the lack of commitment and support on the part of management for BL is one of the main obstacles for its implementation, future research should focus on the development of "best practice" cases and organizational theories to provide practitioners with the necessary methodological knowledge and awareness to gain support and commitment from managers for

BL. Future studies may research aspects of BL, such as types of activities and types of BL, which may lead to effective implementation of this approach in workplace-learning settings.

Limitations of the Study

One major limitation of this study is the lack of research on the present and, in particular, the future state of BL in adult education. Since this study is a systematic review, its initial objective was to collect as many surveys, qualitative studies, randomized control trials, and case studies as possible, but these types of studies are often limited, unavailable, or inaccessible. Further, the participants' opinions and perspectives may be biased when answering the questions.

Another limitation of the study is the currency of the articles. Since the current study focuses on the investigation of future trends in BL, studies published in the last 5–10 years would be acceptable. However, most of the studies retrieved are dated 2005–2009, and the predictions made in the studies relate to a period of 7–10 years, which implies that the projections are taking place now. Therefore, more current research is needed to make predictions for the next 5–10 years.

BL Training Barriers in the Workplace

Some e-learning barriers that could apply to BL training in the workplace:

1. The high cost of new, upgrading, or developing training programs or systems.
2. Employee resistance to change to new trends in training or management, or lack of organizational BL training culture in the workplace.
3. Technical problems and/or lack of technical support (Guiney, 2015).

Conclusion

This systematic review examined the present and future state of BL in workplace-learning settings. In recent years, this learning approach has gained popularity in both educational and workplace settings due to its benefits. The effects and direction of blended learning in workplace settings is well established and increasing due to its benefits when compared to conventional learning. It is likely that it is substantially improves the job outcomes.

Based on the present findings, it is suggested that in the future, studies should move beyond effectiveness to dealing with obstacles, barriers, and technologies, since all of the studies revealed it is effective despite the variation in business sizes and samples. Moreover, it might be necessary to perform separate analyses on the influence and impact of blended learning on business from different aspects, including knowledge and skills. Therefore, no strong generalizations concerning

the technologies and challenges of blended learning in education can be drawn on the basis of the present results.

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