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The Implications of Blended Learning in Today's Classroom: A Look into the History, Views, Impacts, and Research

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The Implications of Blended Learning in Today's Classroom:

A Look into the History, Views, Impacts, and Research

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A Literature Review Presented

in Partial Fulfillment of the Requirements

for the Degree of Master of Education

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Abstract

Blended learning has transformed the landscape of classrooms over the past few years, as technology has become more readily accessible. This review of literature aims to explore this transformation by looking into the history leading up to the regular use of technology in the classroom, as well as the theoretical frameworks that support the premise of blended learning. Several significant themes in the literature are discussed, next, in addition to some of the main oppositions to the implementation of blended learning. Legislation pertaining to blended learning and technology in education is briefly described, followed by a description of the impacts that the successful implementation of effective blended learning environments can have on students, teachers, and districts. To conclude, several areas for future research are addressed.

The Implications of Blended Learning in Today's Classroom:
A Look into the History, Views, Impacts, and Research

Over the past few decades, advancements in technology have flourished (El-Ghalayini & El-Khalili, 2012). With this eruption in technology available, nearly every aspect of daily life has been impacted. However, the impacts these changes in technology have had in education seem to be more recent. Access to technology is becoming more and more attainable for schools across the world, and with that availability has come a shift to incorporate that technology in education (Alijani, Kwun, & Yu, 2014). One of the biggest transitions brought about by access to technology in the classroom has been a shift away from traditional learning and toward blended learning — a shift Schaber, Wilcox, Whiteside, Marsh, & Brooks (2010) describe as being disruptive to learning as it has been known up to this point.

Traditional learning most typically refers to the face-to-face instruction that takes place within the four walls of a classroom, where both teachers and learners are present in the same space and at the same time (Nortvig, Petersen, & Balle, 2018). Online learning, in contrast, most commonly refers to learning that takes place completely via web-based platforms, where learning can occur regardless of the student's preferred location, time of day, or learning speed (Anthony, 2019; Nortvig et al., 2018). Blended learning, then, can be most readily defined as a mixture of traditional and online learning (Alijani et al. 2014; El-Ghalayini & El-Khalili, 2012; Kassner, 2013; Nortvig et al., 2018; Olejarczuk, 2014; Wong, Tatnall, & Burgess, 2014; Zainuddin & Halili, 2016). This definition of blended learning is extended by Lalima & Dangwal (2017) to include not only face-to-face instruction and online learning, but also to include indirect instruction and collaborative teaching. Musawi (2011) builds on this definition by explaining that blended learning combines three key factors — student needs, access to

technology, and preference of traditional instruction — in order to create a learning environment that incorporates the most effective aspects of face-to-face and online learning. Haijian, Hexiao, Wang, Chen, & Kunru (2011) agree that blended learning incorporates the most effective pieces of traditional and online learning, and add that it also involves a blending of various learning theories in order to maximize the effectiveness of instruction.

This paper aims to explore the implications presented by the shift away from prominently traditional teaching and learning and toward blended learning. In order to better understand how and why these changes came about, this review of literature will take a look into the historical perspectives and the underlying theoretical frameworks behind blended learning. This review will then explore various themes in the literature, and the opposing views or conflicts that surround blended learning, as well as the legislation that relates to this topic. Next, and perhaps most importantly, the impacts blended learning has on students, teachers, and school districts will be explored. Finally, areas for future research will be discussed.

Review of the Literature

Historical Perspective

With the rapid advancements in technological developments, education has been faced with significant changes over the past few decades. Until very recently, traditional learning was the most prevalent classroom structure (Schaber et al., 2010). Traditional learning can be interpreted as the classroom structure in which teaching and learning occur in a physical classroom where both teachers and students are present (Nortvig et al., 2018). During the 1990s, online learning made its first appearance (Schaber et al., 2010). In contrast to traditional learning, online learning refers to those courses which take place completely online — no physical classroom is present, and teachers and students are able to participate in the course asynchronously (Nortvig et al., 2018).

When online learning was first introduced, there was a widespread belief that it had the potential to accommodate a limitless number of students, and was, therefore, an economically ideal choice for education (Schaber et al., 2010). Due to the economic feasibility of online learning, administrators across the nation began to push for teachers to convert their courses into online courses as early as the mid-1990s (Schaber et al., 2010). Shortly thereafter, the misconception that online learning would completely replace traditional learning became one that was not uncommon (Haijian et al., 2011). Unfortunately, however, this push for online learning did not prove as effective as anticipated, as learning was still a mostly passive activity — the only real difference being that lectures were now online (Schaber et al., 2010). Thus, despite being economically optimal, online learning struggled to catch on.

As traditional and online learning continued to evolve, a third method of teaching emerged as a result of fusing traditional and online learning practices. Thus, blended learning

developed as a method which combines the strengths of a variety of theories, technologies, and applications (Haijian, et al., 2011). Since the emergence of blended learning, there has been significant discussion and research comparing traditional, online, and blended learning in an effort to determine the most effective of the three. Researchers (Alijani et al., 2014; Anthony, 2019; Musawi, 2011; Nortvig et al., 2018) have investigated, for instance, which of these methods will result in optimal learning outcomes, the best level of student satisfaction, and the highest level of credit completion. When the results are tallied, though, they tend to suggest that the amount of coursework that is on-line versus off-line is just one of many factors that influence the effectiveness of an educational program (Nortvig et al., 2018). Although it does seem that a combination of on- and off-line work is ideal, compared with sole use of one or the other, and over the recent years, developments in blended learning have led to an increase in students, a change in the the structure of learning, and a shift in student motivation (Haijian et al., 2011).

However, despite research-based evidence and the fact that technology has found its way into nearly every home and school in America creating the perfect conditions for a transformation in its educational system, teaching methods have not seemed to change extensively. Alijani et al. (2014) argue that an economy's ability to thrive is partially dependent on the effectiveness of its educational system, and if today's students are going to be able to successfully compete in tomorrow's technology-based job market, the current educational system will need to undergo significant restructuring. Blended learning, as has been seen over the past few years, has the potential to become a means to achieving this restructuring, especially since it not only inherently creates more opportunities for students to participate in individualized, one-on-one instruction on a regular basis, but it also increases the allowance for

credit recovery and advanced placement opportunities for students in need of such opportunities (Alijani et al., 2014).

Underlying Theoretical Frameworks

Blended learning, by its very nature, not only purposes to meet the learning needs of all students at all levels, but also aims to do so by addressing the various learning preferences of those students (Béres, Magyar, & Turcsányi-Szabó, 2012). Due to this flexibility, it is no challenge to uncover numerous learning theories that can be aligned with blended learning. Béres et al. (2012) identify and describe several of these prominent theoretical frameworks, including the work of Honey & Mumford, Kolb, Meyers-Briggs, Keirse, Felder-Silverman, and Gardner. Brief analysis of the numerous types of student learning preferences, styles, and needs presented in these frameworks can seem daunting, especially when considering the importance of meeting each of the needs and preferences described. However, the flexibility blended learning naturally presents makes it clear that meeting each student's individual needs is no longer an unrealistic goal.

In addition to the numerous theoretical frameworks for learning styles and preferences that have been connected to blended learning, Béres et al. (2012) describe several models that have been developed to enhance the practice of e-learning. One such model is Anderson's Online Learning Model, which combines collaboration, inquiry, and learning community (Béres et al., 2012). Collis & Moonen's Flexible Learning Approach, another example of a model that has been developed for the implementation of blended learning described by Béres et al. (2012), relates the various aspects of flexibility — time, course content, entry requirements, instructional approaches/resources, delivery/logistics — to the two basic categories of acquisition and contribution. Salmon's Five Stage Model for online learning consists of five stages that build

upon each other, which include access and motivation, socialization, informal exchange, knowledge construction, and development (Béres et al., 2012). In addition to these, McLoughlin's Inclusive Pedagogical Model seeks to combine student participation with real-world activities, and emphasizes the idea that knowledge is obtained through both collaborative and independent means (Béres et al., 2012).

Flipped learning is one method for blended learning, and is, at its core, a student-centered classroom model. Bloom's Taxonomy — remembering, understanding, applying, analyzing, evaluating, creating — is often referenced when referring to the flipped learning model (Zainuddin & Halili, 2016). Traditionally, the face-to-face portion of learning has been spent on lecture or some other passive, information-gathering activity (Zainuddin & Halili, 2016). These types of activities are defined by the lower levels of Bloom's Taxonomy — remembering and understanding (Zainuddin & Halili, 2016). The flipped format of blended learning has moved these lower cognitive domains outside of the classroom (e.g. in the form of video lesson, required readings, etc.) in order to make space for activities that have their focus on the higher cognitive domains of Bloom's Taxonomy — applying, analyzing, evaluating, and creating (Zainuddin & Halili, 2016). In traditional classrooms, if these higher cognitive domains are addressed, it is typically in the form of homework — often an activity students complete in isolation from their peers. Blended classrooms, on the other hand, address Bloom's higher cognitive domains by implementing collaborative, and possibly hands-on, activities such as discussions, presentations, or group projects (Zainuddin & Halili, 2016).

El-Ghalayini & El-Khalili (2012) also reference Bloom's Taxonomy in their research, identifying it as one of three taxonomies key to the development of their own approach to a successful blended learning model. In this framework, El-Ghalayini & El-Khalili (2012) use

Bloom's Taxonomy when developing differentiated learning objectives. Redeker's Taxonomy is then used to classify the learning activity as receptive (in which the student is merely receiving information), internally interactive (in which the student is working with the learning objectives independently), or cooperative (in which the student is working with the learning objectives in collaboration with his/her peers) (El-Ghalayini & El-Khalili, 2012). Finally, the framework presented by El-Ghalayini & El-Khalili (2012) utilizes the Guerra Scale to classify the technology implemented in a blended learning lesson based on criteria such as interactivity and functionality.

Alijani et al. (2014) emphasize the importance of student engagement in the learning process, claiming that, according to learning theory, student learning is maximized when students are actively involved in their learning. When students actively participate in their construction of knowledge, learning is a guaranteed outcome. On the other hand, when students are not active participants in the construction of their knowledge, they are merely passive recipients of information, and meaningful learning is not likely (Alijani et al., 2014). This fact alone serves as grounds for the serious consideration of a drastic shift away from traditional, lecture-based learning. Alijani et al. (2014) point out, however, that balance is a key component of blended learning — each piece of a blended learning class needs to be balanced, from the types of technology used to the specific content being addressed. According to Alijani et al. (2014), when students interact with and are engaged in a well-balanced classroom, meaningful learning is a near certainty.

Schaber et al. (2010) describe an effective learning environment as one that is learner-, knowledge-, assessment-, and community-centered. Learner-centered environments are most effective when they strive to motivate students and create opportunities for active learning, while

considering the capabilities and preconceptions students already have. Knowledge-centered environments are most effective when they focus on learning objectives that are significant to the content area being addressed. Assessment-centered environments are most effective when they utilize the data collected from frequent formative assessments in order to provide students with opportunities for reteaching in order that they may better understand the material presented. Community-centered environments are most effective when they have facilitated a group of learners that strive to support, motivate, and challenge each other to grow in their learning (Schaber et al., 2010).

Davies (2011) outlines a framework for understanding and assessing technology literacy which includes three levels: awareness, praxis, and phronesis. The awareness level, according to Davies (2011), is where students and teachers become aware of the various roles technology can have in education; there is an understanding of what certain tools can be used for, but not necessarily an understanding of how to use those tools — what is referred to as declarative knowledge. At the praxis level, students and teachers begin to use technology to accomplish simple learning goals; there is a basic understanding of how to use certain tools, but this understanding may not take into consideration the practicality or meaningfulness of the tools being utilized — what is referred to as procedural knowledge (Davies, 2011). Finally, the phronesis level is where students and teachers are comfortable with using technology and are able to discern which technology will be most efficient and useful in various learning contexts — what Davies (2011) refers to as the highest level of wisdom in technology literacy.

Anthony (2019) discusses two additional frameworks that are not only important to keep in mind when developing an effective blended learning model, but which also seem to encompass many aspects of numerous frameworks previously mentioned. The first of these

frameworks, the Danielson Framework for Teaching, is divided into four key domains: planning and preparation, classroom environment, instruction, and professional responsibilities (Anthony, 2019). In addition to Danielson's framework, Anthony (2019) points to Hattie's work on the effect sizes certain factors have on student learning. Hattie's work, as described by Anthony (2019), includes the effect sizes of nearly all of the aforementioned items, such as collaboration, developing learning objectives, community-centered learning, student engagement, and assessment-centered learning.

Both Jobst (2016) and Laher & Boshoff (2017) discuss Rogers' Diffusion of Innovations Theory as being pertinent to the successful implementation of a blended learning model. This theory argues that there are five steps in achieving successful integration of technology in the classroom: knowledge, persuasion, decision, implementation, and confirmation. The first step in the Diffusion of Innovations Theory, according to Laher & Boshoff (2017), pertains to knowing what a technology tool can do, and how to use it to achieve a learning goal. The next step — persuasion — has to do with the attitudes and perceptions surrounding one technology tool's practicality and usefulness compared with others (Laher & Boshoff, 2017). The next step is making a decision as to which technology tool will be adopted, followed by the implementation of the technology and confirmation of its usefulness (Laher & Boshoff, 2017).

Wong et al. (2014) also describe Rogers' Diffusion of Innovations Theory in the context of their own theoretical framework. This framework — derived for use in education from the eBusiness Indicator Framework developed by the Organization for Economic Co-operation and Development — aims to measure the effectiveness of a blended learning model, and consists of three key indicators related to the adoption of a blended learning model: readiness, intensity of adoption, and impact, or quality of learning achieved (Wong et al., 2014). Several criteria are

taken into consideration when determining a school's readiness to transition to blended learning, including factors such as content, culture, finances, management, student and teacher readiness, and infrastructure (Wong et al., 2014). The intensity of adoption indicator is where Rogers' Diffusion on Innovations Theory comes into play, according to Wong et al. (2014), and, as is suggested by the name of this indicator, the intensity of the blended learning model's adoption is measured. Finally, Wong et al. (2014) say, it is critical to measure the impact — or quality of learning that was attained — through the implementation of the blended learning model.

Themes in the Literature

Numerous models and outlines of key components have been developed in recent years that aim to make the effective design and implementation of blended learning achievable in any classroom (Anthony, 2019; Béres et al., 2012; El-Ghalayini & El-Khalili, 2012; Haijan et al., 2011; Lalima & Dangwal, 2017; Limniou, Schermbrucker, & Lyons, 2018; Miles & Foggett, 2016; Musawi, 2011; Nortvig et al., 2018; Olejarczuk, 2014; Wong et al., 2014; Zainuddin & Halili, 2016). Upon analysis of these models and outlines, it is easy to identify several areas of overlap among them. Among these themes are collaboration, preparation, student preferences and learning needs, student engagement, assessment, flipped learning, balance and variety, and evaluation.

Collaboration. One topic that permeates nearly every model is collaboration. Béres et al. (2012) identifies collaboration as one of the key items in their CECIP model for the effective design and implementation of blended learning. Musawi (2011) lists student interaction and participation with their learning among the six steps in their ASSURE model, stating that learning activities should pique the students' engagement, and students should be expected to interact with the teacher and their peers. Miles & Foggett (2016) hinges on the cohesive

combination of input from each of three essential groups of participants in any effective blended learning environment: teachers, students, and instructional designers (i.e. technology integration specialists, curriculum designers, instructional coaches, etc.). Nortvig et al. (2018) also emphasizes the importance of collaboration among students and teachers, stressing that it is critical for teachers and students to communicate about learning preferences and needs so that activities can be appropriately varied. Lalima & Dangwal (2017) advocate that not only should learning be collaborative in nature, but that teaching should also be collaborative.

Preparation. Throughout the literature on blended learning, one of the main themes is the amount of preparation that must go into the development of effective blended learning models. In fact, the first three steps of Musawi's (2011) six step ASSURE model — which outlines the design and implementation of blended learning — have to do with preparation. The first step in this model is to analyze institutional and pedagogical contexts by considering whether an school is prepared to make the transition, what the student needs are, what the best content development and implementation strategies are, and what the learning objectives will be (Musawi, 2011). Selecting appropriate instructional modes and forms is the next step Musawi (2011) describes, with modes representing the type of activity that will be used for specific content (e.g. discussion, modeling, presentations, etc.), and forms pertaining to the blending of various classroom aspects (e.g. offline and online learning, customized and purchased curriculum, structured and unstructured learning, etc.). Next is to select appropriate technology resources, which includes determining which combination of technologies will be used, testing these technologies to ensure functionality, and preparing various on- and off-line resources for students to access as they work through the content (Musawi, 2011).

Haijan et al. (2011) describe several important, influential components of effective blended learning models, among them are several that have to do with preparation. Teaching materials is first on the list: careful planning and development of materials such as the course syllabus, lesson plans, learning objectives, formative and summative assessments, etc. will provide the foundation for a successful blended learning environment. Haijan et al. (2011) also recommend providing additional guidance and study materials that can be accessed online. In addition to these, they emphasize the importance of constraining tasks to manageable timeframes by chunking information into smaller pieces (i.e. 5-15 minutes of focus time per activity, depending on the age of the students).

Olejarczuk's (2014) entire model relates to preparation, outlining three steps for developing an effective blended learning curriculum. The first step is planning the course. In this step, it is important to consider which pieces of the course will be online and which will not, how student understanding will be assessed, what benefits blended learning could have compared to traditional learning, what online resources students will need to access, and what scaffolds will be in place to support students as they learn to be successful in a blended classroom. Next is designing, preparing, and developing the necessary materials. Here it is important to determine what the balance between the face-to-face and the online components will be, as well as how the various learning needs and preferences of the students will be met (e.g. what different materials, resources, etc. will be used in the class). The final step is to upload the materials to the online platform being used for the class. During this step, it will be important to develop both clearly defined expectations for students, and a system of communication so that student questions and problems can be addressed in a timely manner (Olejarczuk, 2014).

In addition to Musawi (2011), Haijan et al. (2011), and Olejarczuk (2014), Miles & Foggett (2016) and El-Ghalayini & El-Khalili (2012) also stress the role of preparation in a successful blended learning model. In fact, Miles & Foggett (2016) present one of the two phases of the development and implementation of an effective blended learning model as the preparation of teachers, students, and instructional designers. This preparation comes through both learning development and professional development. The first three phases of the five phase model presented by El-Ghalayini & El-Khalili (2012) also pertain to preparation. These phases consist of analysis, design, and development.

Student preferences and learning needs. Another theme throughout the literature on developing and implementing successful blended learning environments is the consideration of the various learner needs and preferences. For example, Béres et al. (2012) begin implementation of their CECIP model with the creation of learner profiles for each student by having teachers gather information (e.g. via surveys, observations, etc.) on their students' learning styles, learning preferences, attitudes toward learning, and expectations for learning. Lalima & Dangwal (2017) take student preferences into consideration by giving students the option to choose between more traditional modes and more technology-based modes of learning. In addition, Lalima & Dangwal (2017) state that blended learning ensures that students are given opportunities to gain experience based on their preferences by using new technologies, enhance various life skills, and develop emotionally and physically. Finally, Nortvig et al. (2018) address the importance of taking the learning needs of students by emphasizing communication between students and teachers in order to ensure activities are appropriately differentiated to account for the various student needs. Nortvig et al. (2018) argue that varying learning activities according to

student needs provides students with more opportunities to meaningfully connect with the content being presented.

Student engagement. Student engagement is also a theme in the literature on creating successful blended learning environments. In fact, in a study completed by Anthony (2019), engaging students in learning was one of three components that distinguished classrooms with high levels of growth from classrooms with low levels of growth. Nortvig et al. (2018) claim that effective blended learning models provide students with more opportunities to meaningfully engage with the content being presented. According to Lalima & Dangwal (2017), the student-centered nature of effective blended learning models promote student engagement by exposing students to new perspectives, new cultures, and new dimensions of learning. In addition, effective blended learning environments promote student engagement by making students constructors of knowledge, rather than merely consumers of it (Lalima & Dangwal, 2017). Haijian et al. (2011) also support the emphasis on student engagement, claiming that blended learning models are more conducive for student engagement in learning because the flexibility of these models creates space for more differentiation among the various learning styles and preferences.

Assessment. Another theme common among much of the literature on blended learning is the important role assessment plays. According to Béres et al. (2012), individual assessment is a crucial piece in any successful blended learning environment. Béres et al. (2012) state that assessments to determine mastery of learning outcomes should be based on Bloom's Taxonomy, with success criteria developed for each level (knowledge, understanding, applying, analyzing, synthesizing, evaluating). In addition, students should be given ample opportunity for both self-evaluation and peer-evaluation in order to enhance their construction of knowledge (Béres et al.,

2012). Nortvig et al. (2018) also advocate for self-reflection, claiming that this leads to deeper student understanding of the content. El-Ghalayini & El-Khalili (2012) emphasize the importance of feedback assessments provide to the learner. Haijian et al. (2011) discuss the importance the design of formative and summative assessments, arguing the idea is that these are developed as assessments *for* learning, rather than solely assessments *of* learning. Anthony (2019) identifies using assessment in instruction as one of three components that distinguished classrooms with high levels of growth from classrooms with low levels of growth.

Flipped learning. Zainuddin & Halili (2016) and Limniou et al. (2018) describe flipped learning as a model for blended learning. The nature of this student-centered learning model holds students much more accountable for their acquisition of knowledge than more traditional learning models. In a flipped classroom, direct instruction (or, lecture) is transferred to video format and shared with students to watch outside of class time. This creates space for two key things to occur. First, moving lectures to video presents students with the ability to watch, pause, rewind, and rewatch the information as many times as they need (Haijian et al., 2011). Second, students are able to spend more time in class collaborating about the content with their peers. By “flipping” the traditional structure of a classroom so that the information-getting portion (the lower levels of Bloom’s Taxonomy) occur outside the classroom, there are more opportunities for self-paced learning, individual instruction, small group work, etc., which are the types of higher-level cognitive activities that often prove to be the most meaningful (Zainuddin & Halili, 2016). Flipped learning also allows for more opportunities for teachers to engage students in small group reteaching and individualized instruction on a more regular basis (Limniou et al., 2018; Lalima & Dangwal, 2017).

Balance and variety. Throughout the literature, balance and variety are emphasized as key components in any effective blended learning environment. For example, Lalima & Dangwal (2017) describe a well-implemented blended learning environment as one with a combination of direct and indirect instruction, collaborative teaching, and technology-based learning resources. Nortvig et al. (2018) reiterate this sentiment, stating that variation in teaching and learning activities is crucial to successful implementation of blended learning in any classroom. The two most important elements of a successful blended learning environment, they continue, are the relationships between online and offline learning activities, and the relationships between students, teachers, and content (Nortvig et al., 2018). There should also be variation in the complexity throughout the content presented in a blended environment. Balancing the amount of challenging and simple material in each lesson produces understanding which is easily accessible for all learners (Haijian et al., 2011). When students are able to engage with material that meets their learning needs, they are more likely to develop their critical thinking skills, which is another of the five key components in the CECIP model presented by Béres et al. (2012). Another area where balance and variety is critical lies in the role of the teacher. Lalima & Dangwal (2017) point out the importance of the diverse role of the teacher in a blended learning environment. Anthony (2019) identifies a teacher's ability to demonstrate flexibility and responsiveness as one of three key factors distinguishing high-growth classrooms from low-growth classrooms.

Evaluation. Frequent evaluation of the blended learning strategies being implemented is critical in maintaining effective implementation of blended learning. In fact, evaluating and reviewing the implementation is one of the key factors in the CECIP, ASSURE, and ADDIE models presented by Béres et al. (2012), Musawi (2011), and El-Ghalayini & El-Khalili (2012),

respectively. Wong et al. (2014) also recognize the significance of evaluation, and present a framework for evaluating the effectiveness of blended learning implementation. One of the key aspects of this framework is the evaluation of the impact, or quality of learning, blended learning has on the students in a classroom (Wong et al., 2014). Evaluation of the impacts on student learning is arguably one of the most important pieces to consider in the development of a blended environment, as it provides the feedback necessary to continuously improve the learning experience for both the students and the teachers.

Opposing Viewpoints or Conflicts

Although blended learning offers a myriad of positive outcomes when implemented well, there are several opposing viewpoints addressed throughout the literature. One of the most common concerns addressed in the literature is the perception that by incorporating online components in the classroom, learning will become a much more impersonal activity (Alijani et al., 2014; Laher & Boshoff, 2017; Limniou et al., 2018). Alijani et al. (2014) points out the misconception that, in a blended learning environment, students' interaction with their peers will be minimal. Laher & Boshoff (2017) also make this observation, noting that many believe implementation of technology in the classroom will lead to students spending more time working in isolation, and less time working in collaboration. Not only is there concern that students will lack opportunities to work with other students, but also that the opportunities for students to work with teachers will be greatly diminished. For example, there is a common misconception in flipped classrooms (one model for blended learning) that video lectures will replace student-teacher interaction (Limniou et al., 2018). Many worry that this supposed lack of human interaction will result in ineffective, uninteresting content delivery (Alijani et al., 2014), which will lead to minimal learning.

Deep-rooted connections to traditional learning methods also stand in the way of the widespread embrace of blended learning. Traditional learning is comfortable and familiar, and as a result, students, parents, and teachers may be inclined to choose hard copies of textbooks over digital textbooks, and pencils and worksheets over digital learning activities (Laher & Boshoff, 2017). Miles & Foggett (2016) point out that, contrary to popular belief, students do not tend to readily embrace the implementation various blended learning models, and the academic technology use and changes to studying and learning approaches that come with this implementation. This resistance may be in part caused by the fact that many students participating in blended classrooms are the first in their families to receive such instruction, and thus may not have access to mentors to provide them support and guidance in what it takes to be successful learners in blended learning contexts (Miles & Foggett, 2016). Zainuddin & Halili (2016) point out that students may struggle to adapt to flipped or blended learning because it is unfamiliar.

Students' ability to adapt to new learning and teaching methods is also a point of contention for many, and rightfully so. Miles & Foggett (2016) draw attention to the fact that for students to transition into a blended learning environment, they will need to drastically change their study habits, organizational skills, and perceptions of what their role as students is in order to accommodate this shift. It is imperative that assumptions are not made prematurely about students' ability to easily make these adjustments on their own (Davies, 2011; Miles & Foggett, 2016). Another common concern is students' ability to stay focused when they are using technology in their learning. For many students, technology has primarily played the role of entertaining, and the shift to using technology as a learning tool may be somewhat of an obstacle in the transition to a blended learning environment (Davies, 2011; Laher & Boshoff, 2017).

According to Limniou et al. (2018), there have been concerns raised about students' commitment and accountability to complete tasks assigned as homework, especially in a flipped model of blended learning where these tasks typically consist of video instruction. Zainuddin & Halili (2016) add to this sentiment, by pointing out that if the video instruction is considered by students to be dull, it will be seen as too much of a chore to complete. Miles & Foggett (2016) point out that, with the transition to the new pedagogies of blended learning, students will need to acquire new strategies for being successful in the classroom, especially strategies for taking ownership of their learning. Olejarczuk (2014) states that although students may initially struggle with planning and procrastination, it is critical to provide students with strategies that can help them in areas such as time management and other organizational skills.

Teachers also present their own skepticisms of implementing blended learning. The amount of time required to develop a well-balanced, effective blended learning program will take is among the main issues presented by educators who are resistant to implementing blended learning in their classrooms (Alijani et al., 2014; Jobst, 2016; Zainuddin & Halili, 2016). According to Olejarczuk (2014), another reason teachers may hesitate to embrace blended learning is due to their discomfort with utilizing technology, perhaps due to lack of familiarity with the opportunities using technology to aid in learning. Some teachers also express hesitation due to the fact that significant portions of learning will become dependent on technology (Olejarczuk, 2014), which may stem from the misconception that blended learning could diminish their role as educators (Limniou et al., 2018).

Opposition to the technology itself is another issue that commonly arises. According to Laher & Boshoff (2017), technology has the tendency to be fickle — wireless internet connections can be slow, devices can malfunction, software can be glitchy, etc. Technology can

also be very costly, not only when considering the purchase price, but also when considering the costs that accompany repairs and replacements if devices are broken or lost (Laher & Boshoff, 2017). In addition, there is concern that accessibility to the online components of a class may be limited for some students once they leave the classroom (Limniou et al., 2018).

Finally, some critics of blended learning argue that there is a lack of evidence to support the effectiveness of blended learning. Both Jobst (2016) and Zainuddin & Halili (2016) point out concerns that blended and flipped learning may not actually improve the quality of student learning. Nortvig et al. (2018) call attention to the fact that while some studies find that the adoption of blended learning methods leads to better learning outcomes, higher achievement, improved performance, and all around positive impacts on students' educational experience, other studies have found the opposite (i.e. students are less successful, have less meaningful interaction with the material, are isolated from their peers and teachers, obtain lower test scores, and receive less direct instruction to support their understanding of challenging concepts). Nortvig et al. (2018) continue that there is essentially no particular aspect of blended learning or of traditional teaching that makes one inherently better than the other, but rather that success in either learning environment has everything to do with the context of the learning. Anthony (2019) and Schaber et al. (2010) also argue that it may not necessarily be a matter of simply whether blended learning is implemented, but rather the significance lies in how it is implemented (i.e. the methods and strategies incorporated).

Legislation

While many are still skeptical that blended learning can lead to meaningful and effective learning environments, legislation has been passed which supports the integration of technology in learning, a reality which promotes the adoption of blended learning in all classrooms. Davies

(2011) points to the U.S. Department of Education, describing requirements set in place by federal legislation that stress the importance of integrating technology in all classroom settings, and at all grade levels. Action plans explaining how technology will be meaningfully incorporated in classrooms must be developed at both the state and local levels, Davies (2011) continues, in order to show how districts plan to fulfill the expectation that their schools are guiding students toward technological literacy. The purpose for this push to adopt technology into teaching and learning practices stems from the beliefs that learning is made more meaningful when technology is intertwined, and that students will need to be technologically literate to be productive citizens (Davies, 2011). However, even though there has been a push for technology to be integrated into classrooms at all levels, many are concerned this integration is not being embraced as whole-heartedly as theory deems necessary for success (Davies, 2011).

Another significant piece of legislation that relates to technology in education is the Individuals with Disabilities Educational Improvement Act, which, as Peterson-Karlan (2015) explains, demands that development of Individualized Educational Plans take into consideration student needs for assistive technology. In addition, Peterson-Karlan (2015) point out, this legislation necessitates that educators are familiar with these technologies, and are able to utilize them effectively to meet the needs of their students. Assistive technology was first defined in U.S. legislation via the Technology-Related Assistance Act of 1988, according to Peterson-Karlan (2015), who argues that this particular definition may need to be altered to encompass any tool that not only permits someone with a disability to complete a task they were previously unable to accomplish, but also allows them to complete the task at the level expected of those without such a disability. Other countries have also developed legislation to ensure equal

opportunities for all learners, and have stressed the importance of students' ability to access these educational technologies (Peterson-Karlan, 2015).

The U.S. Department of Education (2017), in alignment with the Activities to Support the Effective Use of Technology (Title IV) Part A of the ESEA, which is in accordance with amendments by ESSA, has developed and updated the National Education Technology Plan (NETP). In addition to presenting one main goal in each of the areas of learning, teaching, leadership, assessment, and infrastructure, the NETP presents several recommendations for bringing each goal to fruition (U.S. Department of Education, 2017). Technology integration needs to be a priority in education, according to the U.S. Department of Education (2017), and the NETP provides strategies that will enable schools to make this integration a reality. The U.S. Department of Education (2017) argues that when technology is used to reshape learning and teaching environments, communities will be transformed, and students will become better-equipped global citizens.

Impact on Students, Teachers, and School Districts

As with any shift in education, there are a myriad of impacts on students, teachers, and school districts that need to be considered. Earlier in this paper, some of the challenges and concerns surrounding blended learning were discussed. This section aims to cover some of the positive impacts of blended learning covered in the literature, as well as some considerations that will be imperative to the successful implementation of an effective blended learning program. Among these topics are: collaboration, communication, and community; student engagement; shifts in student roles; shifts in teacher roles; differentiation and personalization; and district considerations.

Collaboration, communication, and community. Throughout the literature, there seems to be widespread consensus that blended learning creates space within learning for students to engage in collaborative work, both with their peers and with their teachers (Béres et al., 2012; El-Ghalayini & El-Khalili, 2012; Lalima & Dangwal, 2017; Limniou et al., 2018; Miles & Foggett, 2016; Nortvig et al., 2018; Zainuddin & Halili, 2016). In fact, Miles & Foggett (2016) argue that without frequent collaboration, a blended learning model will not be successful. Not only do students have access to more collaboration through blended learning, but teachers also find the need to collaborate with their peers on a more frequent basis in order to maintain and improve their practice in a blended learning environment (Schaber et al., 2010; U.S. Department of Education, 2017). With the transition to blended learning, administrators, and others in leadership positions, must also commit to shifting their roles to more collaborative ones (U.S. Department of Education, 2017).

Along with the increase in opportunities for collaboration comes the opportunity for improved communication (Alijani et al., 2014; Jobst, 2016; Lalima & Dangwal, 2017; U.S. Department of Education, 2017; Zainuddin & Halili, 2017). Blended learning not only provides more opportunities for students to communicate with each other and with teachers in face-to-face settings, but it also provides them with opportunities to communicate with others via online platforms. With an increase in opportunity to develop collaboration and communication skills, comes an increased sense of community, where learners feel both connected to and trusting of those with whom they are learning (Nortvig et al., 2018). According to Béres et al. (2012) and Nortvig et al. (2018), when well implemented, blended learning has the potential to create meaningful, student-centered learning communities.

Student engagement. Effective blended learning environments provide students with frequent opportunities to engage in learning activities that require higher-order thinking, problem solving, and critical thinking (El-Ghalayini & El-Khalili, 2012; Lalima & Dangwal, 2017; Limniou et al., 2018; Nortvig et al., 2018; Peterson-Karlan, 2015; Zainuddin & Halili, 2016). These opportunities for students to engage in higher-order thinking, problem solving, and critical thinking can both come from and lead to higher levels of meaningful interaction with the content and active learning experiences. Students participating in blended learning environments, according to numerous authors, have greater opportunities to become more active and interactive in their learning through hands-on activities, open-ended questions, student-led discussions, and many other learning activities (Alijani et al., 2014; Kassner, 2013; Limniou et al., 2018; Schaber et al., 2010; Zainuddin & Halili, 2016). It almost goes without saying that the increase in opportunities to engage in active and interactive learning blended learning provides will naturally lead to an increase in student engagement in their learning (Alijani et al. 2014; Jobst, 2016; Limniou et al., 2018; Miles & Foggett, 2016; Nortvig et al., 2018; Schaber et al., 2010; Zainuddin & Halili, 2016). According to Alijani et al. (2014), not only does blended learning have the potential to increase student engagement, but it also has the potential to increase teachers' engagement in the learning process.

Shift in student roles. Transitioning to blended learning will also require a shift in the role students play as learners. Students in well-implemented blended learning environments will naturally gain more autonomy in their learning (Anthony, 2019; Limniou et al., 2018; Nortvig et al., 2018; Olejarczuk, 2014). With this autonomy comes the need for students to develop and improve the responsibilities they hold with respect to motivation, discipline, self-direction, and time management (Alijani et al., 2014; Kassner, 2013; Lalima & Dangwal, 2017; Zainuddin &

Halili, 2016). As students become more independent learners in blended environments, they will naturally make gains in their digital fluency. There are a myriad of technologies available to students, and through them students have immediate access to copious amounts of information (Davies, 2011; Jobst, 2016; Laher & Boshoff, 2017; Lalima & Dangwal, 2017; Peterson-Karlan, 2015). These shifts in the role of students will have long-lasting effects, too, since they are valuable skills for any productive citizen to have (Laher & Boshoff, 2017).

Shift in teacher roles. Not only will student roles shift with the implementation of effective blended learning programs, but teacher roles will also see change. One of these changes found throughout the literature, is the notion that the teacher's role will shift away from being mainly a lecturer, and will instead become that of a facilitator of learning (Béres et al., 2012; Jobst, 2016; Kassner, 2013; Limniou et al., 2018; Musawi, 2011; U.S. Department of Education, 2017). Kassner (2013) describes another role teachers will develop is that of a curator, since in a blended learning environment there will be a greater need for them to compile an abundance of quality content at a variety of levels to meet student needs. Teachers will also need to shift their pedagogy to allow for more student-centered practices, such as collaboration, frequent feedback, differentiation, student choice, physical classroom layout, etc. (Anthony, 2019; Davies, 2011; Kassner, 2013; Limniou et al., 2018; Nortvig et al., 2018; Schaber et al., 2010; U.S. Department of Education, 2017). Another shift that will be crucial for teachers' successful implementation of blended learning environments will be to engage in constant reflection on both teaching strategies and integrated technologies (Anthony, 2019; Davies, 2011; Olejarczuk, 2014; Schaber et al., 2010).

Differentiation and personalization. With the inevitable shifts in student and teacher roles brought about by the implementation of blended learning, comes access to a more

personalized learning environment for students (Alijani et al., 2014; Anthony, 2019; Béres et al., 2012; Haijan et al., 2011; Jobst, 2016; Kassner, 2013; Laher & Boshoff, 2017; Musawi, 2011; Nortvig et al., 2018; Olejarczuk, 2014; U.S. Department of Education, 2017; Wong et al., 2014; Zainuddin & Halili, 2016). Blended learning environments naturally lend themselves not only to more opportunities for formative assessment, but also to more immediate access to the data from these assessments — which means teachers are able to make changes to instruction almost immediately in order to meet the learning needs of their students (Kassner, 2013; Olejarczuk, 2014; U.S. Department of Education, 2017). When teachers are able to immediately access assessment data and make changes to instruction accordingly, the level of differentiation and personalization in student learning soars (Alijani et al., 2014; Anthony, 2019; Béres et al., 2012; Haijan et al., 2011; Jobst, 2016; Kassner, 2013; Olejarczuk, 2014; U.S. Department of Education, 2017). This differentiation and personalization of learning, in turn, leads to improved learning outcomes and improved quality of learning (Alijani et al., 2014; Haijan et al., 2011; Jobst, 2016; Wong et al., 2014; Zainuddin & Halili, 2016).

Without the flexibility and accessibility offered by blended learning, the level of differentiation and personalization described in the literature would not be possible. Due to the fact that a significant portion of learning has been moved online, both students and teachers are able to reap the benefits of the influx in flexibility students have to learn from material that is at an appropriate level, and at a pace that suits them (Alijani et al., 2014; Haijan et al., 2011; Kassner, 2013; Laher & Boshoff, 2017; Musawi, 2011; Nortvig et al., 2018; Olejarczuk, 2014; U.S. Department of Education, 2017). The accessibility provided by blended learning is a major contributor to its flexibility. Since the vast majority of instructional materials can be found online, students participating in blended learning classrooms have access to content at any time

they choose, and anywhere they have an internet connection (Jobst, 2016; Kassner, 2013; Laher & Boshoff, 2017; Musawi, 2011; Olejarczuk, 2014).

District considerations. In addition to the aforementioned impacts on students and teachers, there are also consideration that will need to be made by districts planning to adopt blended learning in their classrooms. One, somewhat obvious, consideration districts need to make is the cost of implementing blended learning — both financially and with respect to time (Musawi, 2011). While there will be potential savings on textbooks, and other hard copies of classroom materials, the purchase and maintenance of student and teacher devices will need to be well-budgeted for (Alijani et al., 2014; U.S. Department of Education, 2017). Districts will also need to consider the copious amounts of time teachers may need to spend developing a well-rounded, blended learning curriculum (Jobst, 2016), as this transition may prove to be rather time consuming. The U.S. Department of Education (2017) also points out that districts will need a solid infrastructural foundation in order to implement an effective blended learning program, describing the importance of maintaining connectivity, learning devices, and digital content, as well as the significance of developing a responsible use policy for participants in the blended learning program to abide by. Another consideration that cannot be overlooked is the need for adequate professional development and support for teachers — especially considering the increased need for self-reflection and collaboration necessary to develop and maintain a meaningful blended learning curriculum (Alijani et al., 2014; Jobst, 2016; Kassner, 2013; Miles & Foggett, 2016; U.S. Department of Education, 2017).

Areas for Future Research

While this paper has explored much of the literature on the topic of blended learning, there are still several topics directly related to blended learning which call for further

exploration. Kassner (2013), for example, states that more research should be conducted with regard to the impacts of blended learning on various ethnic demographics. Alijani et al. (2014) also calls for more research on how various blended learning models impact various student demographics. In addition, Alijani et al. (2014) continue, further research is needed to explore the financial impacts of blended learning on districts, and to determine what opportunities could exist for grants and other funding.

Limniou et al. (2018) call attention to the need for future research that explores the implementation of various learning materials and activities in the flipped classroom setting in order to definitively determine the benefits of flipped learning on student achievement. In addition, more research may be necessary to determine whether the flexibility created in blended learning environments could lead to more flexibility in the structure of the school schedule. Musawi (2011) states that blended learning will result in students being less restricted by the traditional structure of the school calendar, which could potentially lead to a shift away from grouping students solely based on age. Alijani et al. (2014) also hints at this, calling for future research that will explore changes in how classrooms are structured, as well as changes in how academic growth and progress are measured. Another area for future research that would be interesting to explore would be the effects blended learning environments have on the growth mindset of students.

Conclusion

Blended learning has the potential to completely transform both teaching and learning. While this review of literature seems to have merely scratched the surface, it is clear that not only do an abundance theoretical frameworks support the premise of blended learning, but also that several models have been developed which encompass some of the most effective elements of blended learning (Alijani et al., 2014; Anthony, 2019; Béres et al., 2012; Davies, 2011; El-Ghalayini & El-Khalili, 2012; Haijan et al., 2011; Jobst, 2016; Laher & Boshoff, 2017; Lalima & Dangwal, 2017; Limniou et al., 2018; Miles & Foggett, 2016; Musawi, 2011; Nortvig et al., 2018; Olejarczuk, 2014; Schaber et al., 2010; Wong et al., 2014; Zainuddin & Halili, 2016). Among the main themes discussed among these models are collaboration, preparation, student preferences and learning needs, student engagement, assessment, flipped learning, balance and variety, and evaluation.

In addition to the many frameworks explored and the myriad of learning models presented, there are still those who are skeptical of the effectiveness of blended learning. Among these skepticisms are the claims that learning will become too impersonal, the deep-rooted ties to traditional learning, the struggle students may encounter in adapting to new learning requirements, the copious amounts of time teachers will need to invest to develop and modify curriculum, the costs of technology, and the supposed lack of evidence supporting implementation (Alijani et al., 2014; Davies, 2011; Laher & Boshoff, 2017; Limniou et al., 2018; Miles & Foggett, 2016; Nortvig et al., 2018; Olejarczuk, 2014; Zainuddin & Halili, 2016). It is important to remember, however, that despite these criticisms, blended learning can have tremendous impacts on students, teachers, and districts. Included in this list of impacts are increased opportunities for collaboration, communication, and community; higher levels of

student engagement; positive shifts in student and teacher roles; more opportunity for differentiation and personalization; and district level considerations (Alijani et al., 2014; Anthony, 2019; Béres et al., 2012; Davies, 2011; El-Ghalayini & El-Khalili, 2012; Haijan et al., 2011; Jobst, 2016; Kassner, 2014; Laher & Boshoff, 2017; Lalima & Dangwal, 2017; Limniou et al., 2018; Miles & Foggett, 2016; Musawi, 2011; Nortvig et al., 2018; Olejarczuk, 2014; Peterson-Karlan, 2015; Schaber et al., 2010; U.S. Department of Education, 2017; Wong et al., 2014; Zainuddin & Halili, 2016). While there are still numerous areas to explore related to blended learning — such as further research focusing on various demographics (Kassner, 2013; Alijani et al., 2014) and classroom structure (Alijani et al., 2014; Limniou et al., 2018; Musawi, 2011) — there seems to be a solid foundation of resources and evidence available for teachers to embrace and adopt blended learning in their own classrooms.

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