THE ART OF BLENDING: BENEFITS AND CHALLENGES OF A BLENDED COURSE FOR PRESERVICE TEACHERS

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ABSTRACT

In this study, we explore the design and delivery of a blended social studies teaching methods course according to principles and core attributes of blended course design. In a survey at the end of the course, pre-service teachers were asked to reflect on their experience in the course, and identify the benefits and challenges of the blended design. Five overarching themes were identified from the analysis, which include the benefits of flexibility and pace, access and modeling, peer relationships and community, clear communication and feedback, and the challenges of time management and self-discipline.

Keywords: blended learning, teacher preparation, blended course design

INTRODUCTION

There has been a notable surge in the use of technology in university and K–12 classrooms as of late. Driven by mobile technologies, user-friendly applications, and ubiquitous electronic devices (Cavanaugh, Sessums, & Drexler, 2015), this upswing has stimulated recent innovations in how, when, and where technology is used for teaching and learning. Most significant is the move toward using technology as a means for content delivery and student engagement outside a traditional classroom, with the goal of improved pedagogy to advance student learning outcomes (Porter, Graham, Spring, & Welch, 2014). The concept of blended learning, which is the planned integration of face-to-face instruction and online learning components, is expected by many experts to be standard practice in both K–12 and university classrooms of the future (Johnson, Adams Becker, Estrada, & Freeman, 2015; Murphy, Snow, Mislevy, Gallagher, Krumm, & Wei, 2014). In fact, several states and school districts in the United States currently require high school students to complete a blended or online class as a requirement for graduation (National Conference of State Legislators, 2016; Watson, Murin, Vashaw, Gemin, & Rapp, 2013). To further underscore the rapid growth of online and blended learning in both K–12 and university classrooms, the U.S. Department of Education 2016 National Education Technology Plan (NETP) states:.

> *Our education system continues to see a marked increase in online learning opportunities and blended learning models in traditional K–12 schools. To meet the need this represents better, institutions of higher education, school districts, classroom educators, and researchers need to come together to ensure practitioners have access to current information regarding research-supported practices and an understanding of the best use of emerging online technologies to support learning in online and blended spaces. (U.S. Department of Education, 2016, p. 37)*

Despite this call to action and the rapid increase of K–12 online and blended programs (Watson et al., 2013), online and blended learning is not often explicitly taught or practiced in teacher preparation programs (Archambault et al., 2016), which still tend to separate pedagogical instruction from technology training,

To meet this challenge, future teachers need to be exposed to blended learning environments in their professional development (O'Byrne & Pytash, 2015). In line with Kolb's theory on Experiential

Learning (Kolb, 1984), which posits that knowledge is created through the transformation of concrete experience paired with reflection on the experience, preservice teachers need to engage in a blended learning course to understand first-hand the benefits and challenges of such an instructional design. Online teachers have reported that the experience of taking an online class as a student helped in their development as an effective online teacher (Archambault & Larson, 2015). In fact, Parks, Oliver, and Carson (2016) recommend teacher professional development experiences that include teacher-as-student learning situations to deepen understanding of the concept at hand. This includes using blended teaching to teach blended learning (Shand & Glassett Farrelly, 2017).

Understanding blended learning requires specific knowledge of blended course design, with a keen eye on its benefits and challenges. An awareness of the benefits and challenges aids in the course design process, as it enables the instructor to make informed decisions about how to blend the online and face-to-face components. There is much to learn from the successes and challenges experienced by faculty who have developed, implemented, and assessed their courses in search of an effective model of blended learning instruction and from the students who have experienced blended learning directly. McGee and Reis (2012) note a gap in the current blended learning literature of effective blended course models. Likewise, Keengwe and Kang (2012) note a lack of robust studies in the field of blended learning in teacher preparation programs. Both sets of researchers call for the publication and dissemination of research and examples of various blended course models, including the unique elements of blended learning that differ from other models of instruction.

This study is a step to fill that gap, as it describes the design and implementation of a blended teacher preparation course, keeping core blended learning principles in mind, and uses student reflections on the benefits and challenges of the course design. The purpose of this study is two-fold: to present a model of a blended course specifically designed for preservice teachers and to assess if the design met the needs of the students by soliciting their opinions on the affordances, constraints, benefits, and challenges of the blended course model. From this, the following research question emerged: "What are the benefits and challenges of participating in a blended course designed for preservice teachers?"

LITERATURE REVIEW

The term "blended learning" evokes diverse visions of the teaching and learning process, and where and how it occurs. K–12 teachers and university instructors have long used technology-mediated activities within their courses to promote student engagement with course content and ensure academic success. The number of blended courses in higher education continues to increase as does demand for them (Porter et al., 2014), and it is considered by many scholars to be the emerging default course design (Alammary, Sheard, & Carbone, 2014; Halverson, Graham, Spring, Drysdale, & Henrie, 2014; Jeffrey, Milne, Suddaby, & Higgins, 2014). Likewise, many K–12 schools have implemented blended courses, either through "flipping" the classroom, incorporating online or digital modules in class, or conducting online class sessions in lieu of on-campus meetings (Christensen, Horn, & Staker, 2013). The use of blended learning in K–12 classrooms is increasing because of its potential to transform pedagogy toward a more student-centered and personalized approach (Christensen et al., 2013; Johnson et.al., 2015; Murphy et.al., 2014; Shand & Glassett Farrelly, 2017).

Several benefits of blended learning have been reported in the literature, with the most common benefit being flexibility (Gedik, Kiran, & Ozden, 2012). Other benefits include opportunities for students to work at their own pace and with personalized curriculum (Shand & Glassett Farrelly, 2017), reinforcement of learning, and added engagement with peers (Gedik et al., 2012). In a study of blended teacher's beliefs on the affordances and constraints of blended learning (Jeffrey et al., 2014), many reported that a key benefit to the blended experience was the opportunity to meet face-to-face, as they believe their social presence and content expertise had a greater impact during in-person classes. Furthermore, many claimed the benefit of the online portion of a blended course was the continuous access and availability of the course learning management system (LMS), which served as a repository of content resources and grades and enabled fast and frequent communication.

A key benefit of blended learning for K–12

teachers is the availability of various online tools and resources to differentiate instruction (Graziano & Feher, 2016). Online learning affords the use of games, tutorials, videos, and such that can support learning at different levels and for students with specific needs. Graziano and Feher (2016) also found that classroom management issues were mitigated by the online environment. Student disturbances and complaints are reduced and easier to deal with in an online environment.

However, blended learning is not without challenges. A few significant issues with blended learning have been identified in the current literature. One challenge noted by Lopez-Perez, Perez-Lopez, and Rodriquez-Ariza (2011) is sustaining student engagement in the online component of the course when students see more value in the face-to-face sessions. This was echoed by Jeffrey et al. (2014), who reported similar findings with teachers. They found many teachers harbored the belief that there was more value in the face-to-face portion of a blended course and therefore favored it more than the online portion. A recent study on the problems of implementing blended learning among university instructors (Mozelius & Rydell, 2017) revealed that the most common challenges were the extended time to learn new technology tools, a lack of support for learning critical functions of the LMS, and discomfort with understanding and implementing effective online pedagogy. Gedik et al (2012) specified additional barriers to blended learning, such as the complexity of the work, where students are expected to engage in and complete tasks in two environments; staying disciplined and on track in the online activities; and struggling with technology issues.

Blended Learning in Teacher Education

The National Education Technology Plan specifically states:

> Teachers need to leave their teacher preparation programs with a solid understanding of how to use technology to support learning. Effective use of technology is not an optional add-on or a skill that we simply can expect teachers to pick up once they get into the classroom… Schools should be able to rely on teacher preparation programs to ensure that new teachers come to them prepared to use technology in meaningful ways. (U.S. Department of Education, 2016, p. 32)

To support this goal, the NETP recommends that educators be provided with professional learning experiences using technology to increase their capacity to create "compelling learning activities that improve learning and teaching, assessment, and instructional practices," and teacher preparation programs that "develop a teaching force skilled in online and blended instruction" (U.S. Department of Education, 2016, p. 37). Although many K–12 teachers are increasingly using technology in their classrooms for teaching and learning, few have been formally prepared to facilitate online or blended learning activities (Kennedy & Archambault, 2012; Moore-Adams, Jones, & Cohen, 2016; Worthen & Patrick, 2015). Furthermore, many teacher credential programs do not explicitly prepare teacher candidates for teaching in an online or blended environment and are not required to do so by their state credentialing/licensure agencies (Archambault et al., 2016; Kennedy & Archambault, 2012; Moore-Adams et al., 2016; Worthen & Patrick, 2015). Currently, only a handful of states offer a formal endorsement, license, or authorization for K–12 online and blended learning (McAllister & Graham, 2016). In these formal teacher preparation programs, students are required to complete some type of online field experience, usually as a partnership between the teacher candidate and an online teacher. However, these online teaching experiences are not the norm, as most states do not offer such field experiences for teachers in training (Archambault et al., 2016).

Collopy and Arnold (2009) found that undergraduate students in a teacher preparation program who participated in a blended course reported significantly greater levels of competence and comfort in putting into practice what they learned than similar students enrolled in an online-only course. Having a face-to-face component of the course enabled students to feel more confident with the material due to their interaction with peers and instructors. The authors surmised that students who meet with fellow students and the instructor at least part of the time feel more self-efficacious and comfortable with the course material, which promotes transfer of learning.

To deal with this move toward online and blended learning in K–12 schools as well as the

lack of teacher candidate preparation for this, many local school districts have taken it upon themselves to offer professional development for their teachers who want to transition from teaching in a traditional classroom to teaching in a solely online or blended classroom (U.S. Department of Education, 2016; Worthen & Patrick, 2015). Teacher preparation programs need to follow suit (Moore-Adams et al., 2016; Williams & Casale, 2015).

The blended course design process involves identifying core attributes and principles of effective blended-course models. This section proposes design principles for blended learning based on a synthesis of blended learning research and reports of blended learning in higher education. Several researchers have studied different blended learning designs and implementation practices at the college level, and they have offered practical and theoretical guidance on effective blended course design (Alammary et al., 2014; Jeffrey et al., 2014; McGee & Reis, 2012; Means, Toyama, Murphy, & Baki, 2013). The meta-analysis of Means, Toyama, Murphy, and Baki (2013) provided statistically-derived evidence of blended learning's positive impact on student achievement, and it identified effective pedagogical practices and types of tasks that benefit from an online versus face-to-face delivery. Additionally, multiple authors describe principles and best practices that support a transformational design process for blended learning at the college level (Alammary et al., 2014; Jeffrey et al., 2014; McGee & Reis, 2012; Means et al., 2013). Careful and systematic review of the literature revealed the following areas were fundamental in effective blended course design: 1) planning course objectives, 2) planning for content delivery and student engagement, and 3) planning the blend of face-to-face and online components.

Planning course objectives. Effective blended course design focuses on the objectives of the course, not on the technologies (Alammary et al., 2014; McGee & Reis, 2012). Successful planning starts by identifying key learning outcomes before designing learning activities that integrate online and face-to-face components. The design of a blended course should emerge from the goals and objectives of the course and focus on the content to be learned, skills to be mastered, and outcomes to be assessed. Once these objectives have been established, meaningful instructional activities, both with and without technology and on and off campus, can be planned to target these objectives.

Allamary et al. (2014) and Hofmann (2006) suggest that instructors should look at each course objective and then consider the best media for meeting each objective. McGee and Reis (2012) posit that clearly defining course objectives prior to the start of the design process is critical because the objectives should determine the content delivery mechanism, the pedagogical choices for activities, and the amount of time spent in online versus face-to-face pursuits. Learning outcomes are more effectively achieved when targeted by specific activities appropriately matched to delivery modes (Means et al., 2013).

Planning for content delivery and student engagement. Several researchers posit that content delivery mechanisms, student engagement activities, and assessments should be based on course content, the learning needs of students, and pedagogical affordances of the designated technology tools (Jeffrey et al., 2014; McGee & Reis, 2012; Means et al., 2013; Shand, Guggino, & Costa, 2013). The selection of course activities and the media used to deliver them is probably the most challenging of the blended design process (McGee & Reis, 2012). Jeffrey et al., (2014) found that teachers perceived lectures, tutorials, and online environments to serve different functions and parsed out course topics and materials to the different media based on these beliefs. For example, many teachers in the study claimed that lectures were meant to teach theory and are best conducted in face-to-face settings, while tutorials were meant to apply knowledge and could be completed online. Additionally, course resources and materials could be placed online for student reference and reinforcement. These attitudes about course content seem to drive the course design.

Means et al. (2013) postulates that the focus of the design process for blended courses should be on using the content delivery method that best meets the needs of the learners while honoring the blended nature of the course. Additionally, the complexity of the content to be learned needs to be considered. For example, if the content of a lecture is straightforward and relatively easy to comprehend, a narrated online lecture would be an appropriate fit. However, if the material is more complex and the instructor anticipates a lot of student questions

that need immediate attention, then a face-to-face lecture will better address student needs (Means et al., 2013).

The affordances and constraints of the technology tools planned for the course also need to be considered in selecting content delivery methods and student engagement activities. Technology tools can be grouped by purpose and selected for use in a blended course based on how well the purpose of the tool aligns with the course and lesson objectives (Shand et al., 2013). For example, when course objectives call for discussion and communication of certain topics, and the discussion can move forward in an asynchronous environment, communication tools and apps can be used in the online component of the course. Likewise, when course objectives call for student identification and presentation of ideas, online presentation tools can effectively be utilized online. These technology tools can also be utilized in the face-to-face meetings for similar purposes. For example, students can showcase their web-based presentations, concept maps, and web sites with their peers in class and participate in structured conversations about the content. They can also engage with the technology tools in small groups to think critically and grapple with difficult concepts.

Planning the blend of face-to-face and online components. To ensure a smooth and meaningful blended course, online and face-to-face components need to be integrated into a comprehensive whole (Hofmann, 2006; Jeffrey et al., 2014; McGee & Reis, 2012). Hofmann (2006) claims that when designing a course for blended instruction, all too often course instructors and program designers string together stand-alone components into a learning path rather than truly weaving learning experiences together. In a blended course, the face-to-face and online components must connect with each other and flow meaningfully from one medium to the next (Powel, Rabbitt, & Kennedy, 2014). For example, if one of the online modules for a course contains a presentation on a key topic, the face-to-face meeting can follow up with a facilitated group discussion on the topic. This is often the intent of flipped classrooms in both university and K–12 settings. Students need multiple passes through the content, often through different media, to better construct knowledge. An effective weave of online and face-to-face components helps to support this goal and improves the quality of the learning experience. The weave is planned in the design stages and carried out in the implementation and facilitation of the course.

APPLYING BLENDED LEARNING PRINCIPLES TO COURSE DESIGN

In this case study, a social studies instructional methods course for preservice teachers was designed using the principles and core attributes of blended course design identified in the literature. This was followed by collecting feedback on the blended experience, specifically on the benefits and challenges of the blended model. The following narrative describes the elements of the course design process with a focus on principles and core attributes for blended learning course design.

Course Objectives

The first step in the blended course design process was to focus on the objectives of the course rather than the technologies as recommended in the literature (Alammary et al., 2014; Hofmann, 2006; McGee & Reis, 2012). The overall goal of the instructional methods course was to prepare future teachers to understand the purpose and practice of teaching social studies in public schools. The objectives centered on the content and skills students were expected to master by the end of the course. The course provided the students with the necessary learning theories, instructional methods, engagement strategies, assessment techniques, and resources to teach social studies in ways that promote critical thinking, concept formation, and student engagement. It emphasized practical aspects of classroom instruction, such as synthesizing content into units and individual lessons, working with state and national content standards, and using a wide variety of strategies to actively engage middle and high school students with history-social studies content. Technology tools were not included in the objectives as they serve as vehicles of instruction and engagement to help target course objectives but are not directly connected to student learning outcomes.

After the course objectives were determined, the next step was to establish how to target them through instructional methods and activities and to consider what format (online or face-to-face) would be appropriate for each method of instruction. The focus for this part of the design was to ensure that content delivery mechanisms, student engagement

activities, and student assessments were based on course content, the learning needs of students, and pedagogical affordances of the designated technology tools (Hofmann, 2006; McGee & Reis, 2012; Shand et al., 2013). In pursuit of this principle, the student learning needs were considered and the course topics identified. Then, the optimal method for content delivery and engagement (i.e., lecture, inquiry, reading, discussion, project-based learning, etc.) was selected for each topic (Means et al., 2013; Shand et al., 2013).

It is important to note that the learning needs of students enrolled in this course were unique and these needs were a major impetus for the course design (Collopy & Arnold, 2009; Means et al., 2013). The students were part of a secondary teaching credential program that integrates coursework and fieldwork. They were required to student teach in local public schools for a minimum of four hours a day (often more) and simultaneously complete university coursework to satisfy state credentialing requirements. To be successful in both coursework and fieldwork, students needed to be highly organized, efficient, and flexible. Their learning needs were specific and relevant to their student teaching experience, including the need to learn how to plan effective lessons, gather relevant resources, create useful instructional materials, and design engaging, differentiated student activities and assessments for their history/social studies classroom. They needed multiple passes through the course content with different lenses to see how the instructional strategies might be applied to different historical topics and grade levels and with diverse learners. Additionally, they needed time and space to confer and collaborate with their classmates to help broaden their perspectives on how and why specific strategies could be used to meet their student learning goals (both for themselves and for their K–12 students).

The students in the course needed to master these concepts and skills rather quickly and efficiently to employ them in their own student teaching. Moreover, they needed large chunks of time to create, develop, and reflect on their lesson plans. Their time was scarce and they needed flexibility in when and where they completed their credential coursework. However, it was essential that the integrity of the course and credential program be maintained. Considering these needs, a blended format, with the flexibility of conducting some of the class sessions online to reduce travel and on-campus seat time, was a perfect fit for this course (Collopy & Arnold, 2009). The challenge was in deciding what topics and activities would work best online versus face-to-face. Determining the balance between online seat time and face-to-face seat time was a consideration that accounted for the course objectives, topics, and student learning needs.

The course contained several topics addressing how to teach history/social studies in secondary school. The lesson topics were ordered to flow in a logical progression, so that concepts and skills built on one another. The content of each lesson was carefully examined to determine the best mode of delivery and engagement, either online or face-to-face (Hall & Villareal, 2015; Means et al., 2013). The affordances of the technology tools available for content delivery were also considered when deciding on the optimal mode of instruction (Shand et al., 2013). Information that could be easily understood without the need for real-time instructor-student interaction was slated for online delivery through narrated lecture presentations and web-based activities (Hofmann, 2006; Means et al., 2013). The presentations were designed to cover facts and concepts essential to the topic at hand, and the narration allowed the instructor to explain the concepts in greater detail and discuss how these concepts are applied in the K–12 classroom. Narration also provided a sense of instructor expertise and presence in the online component of the course. Topics not suitable for lecture presentations were delivered through inquiry-based means, such as WebQuests, simulations, and interactives.

All course topics were at a minimum introduced in the online component of the course. Easier topics were completely covered online and more challenging concepts were introduced in online presentations and videos and followed-up in face-to-face meetings with student engagement activities, discussions, and real-time interactions with the instructor and peers. However, the online component was not merely for presentations and videos. Several engagement activities were also conducted online as students utilized web-based tools to complete relevant exercises, simulations, and assignments.

To ensure a fluid learning experience, it was imperative that the online and face-to-face components were woven together into a comprehensive design (Hofmann, 2006; Jeffrey et al., 2014; McGee & Reis, 2012; Powel et al., 2014). First, it was necessary to establish the time required for both the online and face-to-face portions of the course. Getting the "blend" correct has been identified as one of the most difficult aspects of designing a blended course (Maarop & Embi, 2016). Considering the topics set aside for online lectures and student engagement activities, it was determined that two-thirds of the course would be online and one-third of the course would be face-to-face. The on-campus class meeting days and times were adjusted to fit this format. Specific topics and activities were designated for each portion of the course, and two-week modules were planned that included a set of online activities and a face-to-face meeting. Each course module followed a standard format and progression, beginning with an outline of goals and objectives, required readings, activities and assignments, and due dates and times. Making explicit the goals, objectives, activities, and assignments for each module helped students better understand the expectations of the course. It also enabled the students to plan their study time each week, anticipate the time it would take to complete each activity, and ensure they had reliable internet access.

Each module followed the same sequence beginning with an online narrated lecture or inquiry activity designed to present the lesson content, followed by an online student engagement task, and then a face-to-face meeting on campus to enrich, clarify, demonstrate, and reinforce the content learned online. Face-to-face engagement activities were planned to flow directly from the online content. Students were expected to come to class with an initial understanding of the topic from their online learning experience and be prepared to use that knowledge in the face-to-face discussions and activities.

The face-to-face meetings for the course were held every other week and focused on whole class and small group discussions of course content. The instructor capitalized on the face-to-face time to answer questions and check student understanding (Collopy & Arnold, 2009). Each face-to-face meeting consisted of an activity or discussion that helped students process the new content, buttress difficult concepts, engage with peers on how to apply these concepts to their own teaching, and reflect on their learning and teaching experience. Discussions ranged from whole class seminars to peer feedback and critiques of assignments and structured dialogues between small groups of students (Kang, 2014). Most discussions were conducted in the face-to-face component of the course, but not always. Occasionally, dialogue between students was required in the online component of the course as an online communication activity. Discussions, both face-to-face and online, provided students with opportunities to engage dynamically with the course instructor and peers over difficult content matter and reflect on their learning (Kolb, 1984). It also helped students feel they were part of the course learning community, and it encouraged socialization, an important part of the learning process.

With respect to assessment, due dates for all assignments and activities were routine from week to week so students knew when things were due and could plan their online engagement time accordingly. Scoring guides and samples were included as appropriate, and all work was submitted or linked through the LMS to ensure a uniform and available course environment. All grades, feedback, and course announcements were housed in the LMS for consistency, accessibility, and support.

RESEARCH METHODS

To reiterate, this study was designed to address the research question: What are the benefits and challenges of participating in a blended course designed for preservice teachers? The course used in the study was specifically designed according to the learning needs of preservice teachers, and the blend of online and face-to-face meetings was planned to effectively support understanding and completion of course assignments. To assess student perceptions of the blended course model, and to answer the research question, students who completed the course were asked to participate in a survey about their experience in a blended learning environment. The purpose was to determine the benefits and challenges for preservice teachers participating in a blended course.

Participants and Instrumentation

The class consisted of 24 students who were preservice teachers enrolled in a teacher preparation program for secondary teachers. At the end of the course, students were emailed a survey with open-ended questions that addressed the benefits and challenges of the blended course. All students were provided the opportunity to complete the survey. Eighteen participated. The survey was administered through Qualtrics and was completely voluntary and anonymous. The open-ended questions included:

1. What were the benefits (if any) of having part of the class online?
2. What were the benefits (if any) of having part of the class face-to-face (on campus)?
3. What were the challenges or drawbacks (if any) of having part of the class online?
4. What were the challenges or drawbacks (if any) of having part of the class face-to-face (on campus)?
5. Do you have any additional comments on how the course was structured or delivered?

In accordance with a case study, the survey results were analyzed for descriptive purposes. The responses were transcribed and then reviewed, analyzed, and coded by the authors. During the coding process, the authors met on multiple occasions, discussed discrepancies in their analysis, and came to a mutual consensus on the appropriate codes assigned to all data. Saldaña (2009) defines coding as "a word or phrase that symbolically assigns a summative, salient, essence-capturing, and/or evocative attribute for a portion of language-based or visual data" (p. 3). The process of coding requires extracting and arranging the data in a systematic way to categorize and make meaning of the content. The codes, when clustered together by similarity and regularity, form patterns in the data from which categories emerge.

Descriptive coding was used in the analysis, which is coding that summarizes the basic topic of a passage into a word or phrase (Saldaña, 2009). The initial line-by-line coding of the data allowed descriptive codes to be identified and reworked as the analysis progressed. In the first round of coding, several subcategories were identified. The initial topics included: flexibility, time constraints, instructor support, relationship building, peer feedback, independent learning, clear directions/expectations, technology use, and pace. Following the initial coding, a second round of focused coding was employed to identify the most frequent and significant codes. Together, the authors searched for natural links and connections between the subcategories which were then were grouped and regrouped into categories (Saldaña, 2009). Themes were established from the categorical structure and then subsequently refined. Five overarching themes were identified from the analysis, which include the benefits of: 1) flexibility and pace, 2) access and modeling, 3) peer relationships and community, 3) clear communication and feedback, and 5) the challenges of time management and self-discipline. Example statements were then selected to exemplify each theme.

RESULTS

Students were asked to comment on the benefits of both the online and face-to-face components of the course. Consistent with the findings of Collopy and Arnold (2009) and Gedik et al. (2012), most students remarked that increased flexibility and control over pace were the greatest advantages of having part of the class online. One student stated, "it was very convenient and flexible, which worked well with my schedule," while others noted "we were able to work on our digital unit plans on our own time," and "it [the online modules] broke up the work load and allowed for more independent instruction." These comments, which were mimicked in some form by several students, all reinforce the idea that students appreciate the ability to make choices of when they will engage with online course material and how long they will take to complete the activities. Several students commented on how the flexible schedule allowed them more time to work on creating lessons for their student teaching and other aspects of student teaching (Collopy and Arnold, 2009). These include, "I enjoyed the fact that I did not have to make the hour commute [to campus] every week… having the class online allowed me to spend more time planning lessons," and "it gave me more time to focus on my student teaching."

Some students focused on the benefit of having constant access to course materials in the online environment. This supports the claims made by several authors who conclude that supporting student independent learning is connected to

student success (Hall & Villareal, 2015; McGee & Reis, 2012). Comments include "[the course] allowed me to access/revisit information at any time, and let me view peer's work," and "I could always get access to instructional materials when doing work at home." Modeling technology use was another noted benefit, as one student said, "[the online course] modeled use of technology," which provides an example of how preservice teachers might incorporate technology into their own classrooms.

Feedback on the value of having part of the class face-to-face was also solicited. The overwhelming benefit expressed by the students was the sense of community that developed in the face-to-face meetings. This finding supports results from several recent studies (Collopy & Arnold, 2009; Gedik et al., 2012; Hall & Vilareal, 2015). As with fully online courses, it is essential for blended courses to focus on establishing a sense of community (Kang, 2014; McGee & Reis, 2012). As one student remarked "[I was] able to grow a relationship with the other credential students. It is also great to discuss problems we are having or the hard times of student teaching with each other. It was very important to spend time together." This sentiment was reflected in other student comments, such as, "I got to reflect [in class] what I learned and what I did not learn. It was also very encouraging to talk to other peers about the same issues we have and good things we were facing." Remarks such as, "[the course was a] good mix of working at my own pace but also having peer interaction," and "being with my peers and hearing their ideas and being able to converse with them was a huge help," added to the evidence that face-to-face interaction was necessary and productive for their professional development.

Another benefit of face-to-face meetings was the ability to ask the instructor questions in real time and get clarification on assignments. The importance of clear communication and expectations along with frequent opportunity for feedback, both from the instructor and peers, has been established as critical for student success (Hall & Villareal, 2015; Henrie, Bodily, Manwaring, & Graham, 2015; McGee and Reis, 2012). Student feedback included, "one benefit was receiving information or reassurance from the instructor or peers. Also, being able to ask questions with more immediate feedback and listening to peer questions, because I often don't think of the same details as my peers," and "the benefits were the face-to-face instruction, immediate answers to questions, the ability to connect with peers, venting sessions, and class discussions." The comment, "having misconceptions cleared up was a benefit of being in class," is consistent with Henrie, Bodily, Manwaring, and Graham (2015), who found that clarity of instruction and relevance of activities were primary predictors of student satisfaction.

These findings are in line with Kolb's (1984) emphasis on the dialectic nature of experiential learning in which learners must first participate in concrete experiences and then grapple with the experience through reflection in order to ultimately undergo positive transformation. By affording a more flexible schedule, the blended model allowed students to prioritize the student-teaching when appropriate. Therefore, when it was time for reflection, both in their online work and in the face-to-face environment, students could engage in ways that were neither rushed nor marginalized due to the demands of the current or upcoming school day. Moreover, because this was a digital environment, students could collaborate with one another whenever it was convenient to develop curriculum and face day-to-day teaching challenges, which strengthened their performance when teaching. Likewise, during the reflective component of the course, both face-to-face and online discussions allowed for transformative thinking and encouraged student teachers to mull over the design aspects of blended learning that positively impacted them as students and would be fruitful when applied to a middle- or high-school environment.

The blended design was not without challenges. Students were asked to provide feedback on the challenges or drawbacks of having part of the class online and part face-to-face. Their comments revealed the need for self-discipline and time management when completing online activities. Students remarked, "it was a challenge keeping up with all of the work and deadlines since we only saw the instructor every other week," "it was hard making sure that I was completing the assignments, because it was on my own time," and "I had to make sure that I understood what I was responsible for completing." These comments confirmed the need

to design online components of blended courses with supportive structures that assist student self-regulation capability (Borup et al., 2014; Hall & Vilareal, 2015; McGee & Reis, 2012; Torrisi-Steele & Drew, 2013).

Familiar themes also emerged when students identified disadvantages of the face-to-face classes, namely flexibility and time. Almost all students mentioned travel time as a drawback to attending class on campus. Several students replied, "the drive took away from time I could have been productive," "commuting time [was a drawback]," and "it was difficult getting to campus with a busy schedule." Because student teachers teach several hours a day at a secondary school, the additional class time on the university campus during face-to-face meetings was perceived as an inconvenience (Collopy & Arnold, 2009). However, when asked if they wanted fewer face-to-face sessions, thirteen students responded that the model of two-thirds online, one-third face-to-face with a class meeting every other week, was ideal. Two students wanted more time during the face-to-face meetings but still have them every other week. One student wanted less time during the face-to-face meetings but still have them every other week, while two other students wanted more face-to-face meetings. The blended model was certainly a trade-off. The students needed time to be productive, yet they wanted community with their peers and interaction with the instructor. However, students were willing to accept the trade-off to meet their specific needs (Gedik et al., 2012; Hall & Vilareal, 2015).

When asked for additional comments on the structure of the course, students had this to say:

> *I really enjoyed the structure of the course and the activities we had. I gained a lot from attending class and from working at home online, [and] I loved how the class was structured! I really appreciate that the instructor would explain the expectations for the assignments for the upcoming week and was able to answer questions as needed. I also liked that we were able to have a class discussion after the explanation to make sure everyone was clear on the expectations and it was nice that we had examples of each project/assignment.*

The overall student responses support the design for the blended course and affirm that the design created and implemented for the blended course met the needs of the students. These responses confirm what Collopy and Arnold (2009) found that a blended design can meet the needs of different teacher candidates at different times.

LIMITATIONS

As with any research study, there are inherent limitations to our approach. This study was based on a course designed and taught by a single instructor, which resulted in a small sample size. Student responses and reactions to the course may have differed under a different blended design or different instructor. Although this study was based on a single group of students, surveying more than one group of students may have led to additional or even conflicting outcomes. However, student experience did seem consistent with other studies of student perceptions in blended courses (Collopy & Arnold, 2009; Henrie et al., 2015) and the blended course design was based on principles established in the literature (Alammary et al., 2014; Hofmann, 2006; McGee & Reis, 2012).

The results of the study are descriptive and represent student perceptions of the benefits and challenges of the blended course. Because the survey was anonymous, the researchers do not know which students responded. It is quite possible that the students who responded might have been more favorably disposed to the blended course. The results do not assess student learning outcomes, nor do they measure how preservice teachers use the experience to inform their practice, as they have not yet been employed as in-service teachers.

As noted previously, there are few studies that assess the blended learning experience of preservice teachers (Keengwe and Kang, 2013). Although the study is relatively small, the population being studied (preservice teachers) is important considering the steep growth in K–12 blended learning (Archambault et al., 2016).

IMPLICATIONS FOR PRACTICE

The study identified many benefits of the blended course model. The online component benefits students by affording increased flexibility in when and where they complete their work, freedom of pace over how long they spend on the course activities, and continuous access to course resources, examples, and content. The face-to-

face component benefits students by providing opportunities to build peer relationships and community and by providing occasions for clear communication and feedback from the instructor.

The flexibility and control over work pace in the online portion of the course was clearly a benefit to many. Students enjoyed the freedom of working through the online modules at their own pace and with their own purpose. This is consistent with the definition of blended learning offered by Staker and Horn (2012) which states that instruction should include "some element of student control over time, place, path, and/or pace" (p. 3). This demonstrates the need for instructors to create online modules that can be completed in chunks and at a slower or faster pace depending on student needs.

Continuous access to course materials, examples, and instructions was also beneficial to student learning. This benefit goes hand-in-hand with the affordance of flexibility and pace. Students need the ability to access and refer to course content when they are ready to engage with the course or when they need to look back to clarify any misunderstandings. Instructors who design online and blended courses should consider what materials, resources, examples, and guidelines are critical to student success and place them in the online environment where students have immediate and convenient access.

Student comments from this study suggest that time spent in face-to-face peer discussions, where students discussed how their practice in the field links to course content, was constructive and meaningful. Kang (2014) found that structured dialogue on course topics and informal conversations on fieldwork experiences helped preservice teachers share how they applied course content to the field, discussed new strategies and methods, and worked through problems collectively. This reflective practice, as postulated by Kolb (1984), coupled with shared discourse (Kang, 2014), enabled students to use their experience to make changes in their thinking about the course content and their personal teaching practice. Moreover, class time devoted to interacting with the instructor was also a benefit, as it provided an opportunity to clarify concepts and instructions and solicit direct feedback. The results of this study add to the evidence that plentiful peer discussions in blended environments promote student learning, and instructors should include opportunities for both formal and informal dialogue in the design of the course and provide dedicated time for teacher-student interaction as well.

The challenges of the blended course identified in the study include time management and self-discipline in completing the online portion. This is a continual challenge in fully online courses as well. Therefore, instructors need to be mindful of the supports they include in the online portion of the course to help keep students on track. Email reminders, planned pacing of activities, and scheduled deadlines all help.

DISCUSSION

The blended course design seemed to effectively meet the objectives of the course and the needs of the students. It also provided several benefits to those enrolled in the course. The online components were appropriate and productive and provided students with the flexibility to engage with the content when they were able. The face-to-face components of the course provided students with the necessary socialization that made them feel part of a learning community. They provided dedicated time for instructor-student interaction and question/answer time that is vital to the learning process. Additionally, the blended course design allowed students to move efficiently and effectively within Kolb's (1984) cycles of experiential learning by blending both face-to-face and online classes with the students' teaching experience.

CONCLUSION

If teacher educators are going to address the NTEP (U.S. Department of Education, 2016) and provide preservice teachers with the recommended skills, knowledge, and experience in blended and online instruction, teacher education courses will need to be designed for these environments. This paper identifies attributes of blended learning course design that aid in creating a course that meets student needs. Designing a blended course by following essential principles, such as those outlined in this paper, makes the process systematic and sound. Following a set of principles puts the course objectives and learning needs of the students at the forefront of the design process and influences the choice of activities for each component of the course, which makes the blending of each course as unique as the content, instructor, and students.

The NETP (U.S. Department of Education, 2016) and the International Association for K–12 Online Learning (iNACOL) (Worthen & Patrick, 2015) call for teachers, both preservice and in service, to receive professional development that enables them to successfully implement blended and online learning. Effective management of a blended learning environment requires teachers to "understand and manage the face-to-face and online components of lesson planning and organization within a blended course" (Powel, Rabbitt, & Kennedy, 2014, p. 19). Modeling in professional development, especially in teacher-as-student learning situations, allows the learner to experience structural and instructional best practices that provide rich learning opportunities not available in nonmodeled settings (Parks et al., 2016). This article presents a design model that provides the necessary scaffolding for K–12 teachers and teacher educators to achieve this goal. If teacher educators use this model to design their instruction, their students (future teachers) can acquire the necessary skills, knowledge, and experience to implement effective blended environments into their practice. In this way, the design model, which provides many benefits to students, serves both teacher educators and their students who are current or future teachers.

REFERENCES

Alammary, A., Sheard, J., & Carbone, A. (2014). Blended learning in higher education: Three different design approaches. Australasian Journal of Educational Technology, 30(4), 440–454. doi:10.14742/ajet.693

Archambault, L., & Larson, J. (2015). Pioneering the digital age of instruction: Learning from and about K–12 online teachers. Journal of Online Learning Research, 1(1), 49–83. Association for the Advancement of Computing in Education (AACE). Retrieved from http://www.learntechlib.org/j/JOLR/v/1/n/1/

Archambault, L., Kennedy, K., Shelton, C., Dalal, M., McAllister, L., & Huyett, S. (2016). Incremental progress: Re-examining field experiences in K–12 online learning contexts in the United States. Journal of Online Learning Research, 2(3), 303–326. Association for the Advancement of Computing in Education (AACE). Retrieved from http://www.learntechlib.org/j/JOLR/v/2/n/3/

Borup, J., West, R. E., Graham, C. R., & Davies, R. S. (2014). The adolescent community of engagement: A framework for research on adolescent online learning. Journal of Technology and Teacher Education, 22(1), 107–129.

Cavanaugh, C., Sessums, C., & Drexler, W. (2015). A call to action for research in digital learning: Learning without limits of time, place, path, place…or evidence. Journal of Online Learning Research, 1(1), 9–15. Retrieved from http://www.learntechlib.org/j/JOLR/v/1/n/1/

Christensen, C., Horn, M., & Staker, H. (2013). Is K–12 blended learning disruptive? An introduction to the theory of hybrids. Lexington, MA and Redwood City, CA: The Clayton Christensen Institute. Retrieved from http://www.christenseninstitute.org/publications/hybrids/

Collopy, R. M. B., & Arnold, J. M. (2009). To blend or not to blend: Online-only and blended learning environments. Issues in Teacher Education, 18(2), 85–101. Retrieved from http://www.itejournal.org/back-issues/fall-2009/10collopy&arnold.pdf

Gedik, N., Kiraz, E., & Ozden, M. (2012). The optimum blend: Affordances and challenges of blended learning for students. Turkish Online Journal of Qualitative Inquiry, 3(3), 102–117. Retrieved from http://dergipark.gov.tr/tojqi/issue/21396/229377

Graziano, K.J., & Feher, L. (2016). A dual placement approach to online student teaching. Contemporary Issues in Technology and Teacher Education, 16(4), 495–513. Retrieved from https://www.learntechlib.org/j/CITE/v/16/n/4/

Hall, S., & Villarreal, D. (2015). The hybrid advantage: Graduate student perspectives of hybrid education courses. International Journal of Teaching and Learning in Higher Education, 27(1), 69–80. Retrieved from http://www.isetl.org/ijtlhe/past2.cfm?v=27&i=1

Halverson, L. R., Graham, C. R., Spring, K. J., Drysdale, J. S., & Henrie, C. R. (2014). A thematic analysis of the most highly cited scholarship in the first decade of blended learning research. The Internet and Higher Education, 20, 20–34. doi:10.1016/j.iheduc.2013.09.004

Henrie, C. R., Bodily, R., Manwaring, K. C., & Graham, C. R. (2015). Exploring intensive longitudinal measures of student engagement in blended learning. International Review of Research in Open & Distance Learning, 16(3), 131–155. Retrieved from http://files.eric.ed.gov/fulltext/EJ1067884.pdf

Hofmann, J. (2006). Why blended learning has not (yet) fulfilled its promises: Answers to those questions that keep you up at night. In C. J. Bonk & C. R. Graham (Eds.), The handbook of blended learning: Global perspectives, local designs (pp. 27–40). San Francisco, CA: Pfeiffer.

Jeffrey, L. M., Milne, J., Suddaby, G., & Higgins, A. (2014). Blended learning: How teachers balance the blend of online and classroom components. Journal of Information Technology Education: Research, 13, 121–140. Retrieved from www.jite.org/documents/Vol13/JITEv13ResearchP121-140Jeffrey0460.pdf

Johnson, L., Adams Becker, S., Estrada, V., & Freeman, A. (2015). NMC horizon report: 2015 K–12 edition. Austin, TX: The New Media Consortium. Retrieved from http://cdn.nmc.org/media/2015-nmc-horizon-report-k12-EN.pdf

Kang, J. J. (2014). Learning to teach a blended course in a teacher preparation program. Contemporary Issues in Technology and Teacher Education, 14(1), 54–71. Retrieved from http://www.citejournal.org/volume-14/issue-1-14/current-practice/learning-to-teach-a-blended-course-in-a-teacher-preparation-program

Keengwe, J., & Kang, J. (2012). Blended learning in teacher preparation programs: A literature review. International Journal of Information and Communication Technology Education, 8(2), 81–93. doi:10.4018/jicte.2012040107

Keengwe, J., & Kang, J. (2013). A review of empirical research on blended learning in teacher education programs. Education and Information Technologies, 18(3): 479–493. doi:10.1007/s10639-011-9182-8

Kennedy, K., & Archambault, L. (2012). Offering preservice teachers field experiences in K–12 online learning: A national survey of teacher education programs. Journal of Teacher Education, 63(3), 185–200. doi:10.1177/0022487111433651

Kolb, D. A. (1984). Experiential learning: Experience as the source of learning and development. Englewood Cliffs, NJ: Prentice-Hall.

Lopez-Perez, M. V., Perez-Lopez, M. C., & Rodriguez-Ariza, L. (2011). Blended learning in higher education: Student perceptions and their relation to outcomes. Computers & Education, 56(3), 818–826. Retrieved from https://www.learntechlib.org/p/50834/

Maarop, A. H., & Embi, M. A. (2016). Implementation of blended learning in higher learning institutions: A review of literature. International Education Studies, 9(3), 41. doi:10.5539/ies.v9n3p41

McAllister, L., & Graham, C. R., (2016). An analysis of the curriculum requirements for K–12 online teaching endorsements in the U.S. Journal of Online Learning Research, 2(3), 247–282. Retrieved from http://www.learntechlib.org/j/JOLR/v/2/n/3/

McGee, P., & Reis, A. (2012). Blended course design: A synthesis of best practices. Journal of Asynchronous Learning Networks, 16(4), 7–22.

Means, B., Toyama, Y., Murphy, R. F., & Bakia, M. (2013). The effectiveness of online and blended learning: A meta-analysis of the empirical literature. Teachers College Record, 115(3), 1–47. Retrieved from https://www.sri.com/sites/default/files/publications/effectiveness_of_online_and_blended_learning.pdf

Moore-Adams, B. L., Jones, W. M., & Cohen, J. (2016). Learning to teach online: a systematic review of the literature on K–12 teacher preparation for teaching online. Distance Education, 37(3), 333–348. doi:10.1080/01587919.2016.1232158

Mozelius, P., & Rydell, C, (2017). Problems affecting successful implementation of blended learning in higher education: The teacher perspective. International Journal of Information and Communication Technologies in Education, 6(1), 4–13. doi:10.1515/ijicte-2017-0001

Murphy, R., Snow, E., Mislevy, J., Gallagher, L., Krumm, A., & Wei, X. (2014). Blended learning report. Michael and Susan Dell Foundation. Retrieved from https://www.msdf.org/whitepapers/blended-learning-report/

National Conference of State Legislators (2016). Online learning. Washington, DC: National Conference of State Legislatures. Retrieved from http://www.ncsl.org/research/education/online-learning-as-graduation-requirement.aspx

O'Byrne, W. I., & Pytash, K. E. (2015). Hybrid and blended learning: Modifying pedagogy across path, pace, time, and place. Journal of Adolescent & Adult Literacy, 59(2), 137–140. doi:10.1002/jaal.463

Parks, R., Oliver, W., & Carson, E. (2016). The status of middle and high school instruction: Examining professional development, social desirability, and teacher readiness for blended pedagogy in the southeastern united states. Journal of Online Learning Research, 2(2), 79–101. Retrieved from http://www.learntechlib.org/j/JOLR/v/2/n/2/

Porter, W. W., Graham, C. R., Spring, K. A., & Welch, K. R. (2014). Blended learning in higher education: Institutional adoption and implementation. Computers & Education, 75, 185–195. doi:10.1016/j.compedu.2014.02.011

Powell, A., Rabbitt, B., & Kennedy, K. (2014). iNACOL blended learning teacher competency framework. Viena, VA: International Association for K–12 Online Learning. Retrieved from http://www.inacol.org/resource/inacol-blended-learning-teacher-competency-framework/

Riel, J., Lawless, K., & Brown, S. (2016). Listening to the teachers: Using weekly online teacher logs for ROPD to identify teachers' persistent challenges when implementing a blended learning curriculum. Journal of Online Learning Research, 2(2), 169–200. Retrieved from http://www.learntechlib.org/j/JOLR/v/2/n/2/

Saldaña, J. (2009). The coding manual for qualitative researchers. Thousand Oaks, CA: Sage.

Shand, K., & Glassett Farrelly, S. (2017). Using Blended teaching to teach blended learning: Lessons learned from preservice teachers in an instructional methods course. Journal of Online Learning Research, 3(1), 5–30. Retrieved from http://www.learntechlib.org/j/JOLR/v/3/n/1/

Shand, K., Guggino, P., & Costa, V. (2013). Planning with technology in mind: Preparing pre-service social studies teachers to integrate technology in the classroom. Journal of the Research Center for Educational Technology. Vol 9(1), 174–191. Retrieved from http://www.rcetj.org/index.php/rcetj/article/viewArticle/194

Staker, H., & Horn, M. (2012). Classifying K-12 blended learning. Retrieved from Clayton Christensen Institute for Disruptive Innovation: http://www.christenseninstitute.org/wp-content/uploads/2013/04/Classifying-K-12-blended-learning.pdf

Torrisi-Steele, G., & Drew, S. (2013). The literature landscape of blended learning in higher education: The need for better understanding of academic blended practice. International Journal for Academic Development, 18(4), 371–383. doi:10.1080/1360144X.2013.786720

U.S. Department of Education, (2016). Future ready

learning: Reimagining the role of technology in education. Office of Educational Technology. Retrieved from http://tech.ed.gov/files/2015/12/NETP16.pdf

Watson, J., Murin, A., Vashaw, L., Gemin, B., & Rapp, C. (2013). Keeping pace with K–12 online & blended learning: An annual review of policy and practice. Tenth edition Evergreen, CO: Evergreen Education Group. Retrieved from https://www.inacol.org/resource/keeping-pace-with-k-12-online-and-

blended-learning-10th-edition/

Williams, N. V., & Casale, M. J. (2015). The preparation of teacher candidates for K–12 online learning environments: A case study. Mid-Western Educational Researcher, 27(2), 142–151. Retrieved from http://www.mwera.org/MWER/archives/MWERv27n2.html

Worthen, M., & Patrick, S. (2015). The iNACOL state policy frameworks 2015: 5 critical issues to transform K–12 education. Viena, VA: International Association for K–12 Online Learning. Retrieved from http://www.inacol.org/resource/inacol-state-policy-frameworks-2015-5-critical-issues-transform-k-12-education/