Informing Professional Development to Support K-12 Blended Teaching: A Study of Practices of Seasoned Blended Teachers and Coaching Experiences of Emerging Blended Teachers

Michelle Jensen
Brigham Young University

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Informing Professional Development to Support K-12 Blended Teaching:
A Study of Practices of Seasoned Blended Teachers and Coaching
Experiences of Emerging Blended Teachers

Michelle Jensen

A dissertation submitted to the faculty of
Brigham Young University
in partial fulfillment of the requirements for the degree of
Doctor of Philosophy

Charles R. Graham, Chair
Jered Borup
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Department of Instructional Psychology and Technology
Brigham Young University

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Informing Professional Development to Support K-12 Blended Teaching: A Study of Practices of Seasoned Blended Teachers and Coaching Experiences of Emerging Blended Teachers

Michelle Jensen
Department of Instructional Psychology and Technology, BYU
Doctor of Philosophy

This dissertation is presented in a journal-ready format and aims to inform professional development designed to support blended teaching. The first is a qualitative study of the practices of secondary educators currently using blended teaching strategies. Thematic analysis of the interviews identified activities teachers use in the online space and how they are connected to in-person activities. Activities aligned with two prior frameworks. Moore’s (1989) interaction framework supported classifications of student interactions with content, other learners, and instructors. Kimmons et al.’s (2020) technology use framework supported classifications of student use of online technology in passive, interactive, and creative ways. Participants connected online activities to in-person learning through (a) using data generated while students worked online to inform in-person activities, (b) building relationships in the online and in-person space, and (c) preparing for and reinforcing in-person learning in the online space. These findings lead to recommendations for preservice and inservice teacher professional development as well as future research.

The second article is a phenomenological study of the lived experiences of two elementary and two secondary educators new to blended teaching that received coaching support while participating in a professional development program aimed at supporting their implementation of blended teaching practices. Studying these experiences can inform practicing coaches, administrators of coaching programs, and current research regarding what contributes to a successful coaching program to support blended teaching. Coaches supported participants’ teaching practice during planning, implementation, and reflection phases. Coaches also built partnership relationships with teachers by conveying credibility, treating teachers as equals, communicating in a positive, non-judgmental way, being readily available, and cooperating with other teaching supports. Future research could address the changing support needs of teachers as they gain experience.

Keywords: blended teaching, blended learning, professional development, teacher education, K-12
ACKNOWLEDGEMENTS

I would be lost without the encouragement and inspiration of mentors and colleagues. I have been blessed to work with eduheros, Dr. Joe Jensen, Cody Spendlove, and countless K-12 teachers, who are willing to take risks and innovate to offer students the education they need to be happy, contributing humans. The gentle encouragement and high expectations of my chair, Charles Graham, helped me not only survive a rigorous doctoral program but participate in a way so that I felt I had an impact. My committee insisted our work be something we could all be proud of. I was inspired and amazed by the hard work and inquisitive minds of my graduate school colleagues.

It really is not possible to capture the gratitude I have for my family. My mom, Vickie Purser, believes there is nothing her children cannot do so fiercely that we believe it too. My late father instilled a lifelong desire for learning and improvement in all of his children. My brother and sister, Robert and Melany, both exceed me in coolness and humor but willingly concede the academic wrestle to me. My children (10) and grandchildren (5) give me something to look forward to when I step away from the computer. My husband Paul provides heaps of encouragement and miles of patience during every journey we take together.
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DESCRIPTION OF RESEARCH AGENDA AND STRUCTURE OF DISSERTATION

This dissertation, *Informing Professional Development to Support K-12 Blended Teaching: A Study of Practices of Seasoned Blended Teachers and Coaching Experiences of Emerging Blended Teachers*, is written in article format with two articles in the main body of the dissertation and a literature review in an appendix. This format fulfills the university’s dissertation requirements. The goal of this dissertation is to inform professional development practices that support blended teaching practices.

The research in this dissertation is presented as two publishable articles. As such the intent was to conform to the length and style guidelines of literature within the domain of educational technology. However, future editing may be needed to conform with the specific requirements of targeted journals in the future.

The first two articles, *Learning From Secondary Blended Teaching Practitioners: Selecting Activities and Connecting In-Person and Online Learning* and *Coaching to Support Blended Teaching: A Phenomenological Study of the Coaching Experiences of Emerging K-12 Blended Teachers* present qualitative studies intended to inform K-12 professional development research and practice. Each of these articles are formatted as journal submissions with the resources cited at the end of each.

An extended literature review is included in Appendix A, *Exploring Secondary Blended Teachers’ Decisions and the Motivation Behind Them: A Systematic Literature Review*. The extended literature review was written as an initial exploration of the literature pertaining to decision making involved in implementing blended teaching strategies. In this article we explored the decisions blended teachers made and how those mapped to known blended teaching
competencies (Graham et al., 2019). We also explored what sources were used to motivate or inform the teacher decisions about blended teaching strategies.

Appendix B includes the Institutional Review Board approval letters and consent forms for both research studies. Appendix C includes the instruments used for both research studies—one interview protocol and a survey used to screen participants for the first study; two interview protocols, a blended unit planner, and a reflection template used in the second study. The dissertation concludes with a reference page of articles cited outside of the two articles and extended literature review.
ARTICLE 1

Learning From Secondary Blended Teaching Practitioners: Selecting Activities
and Connecting In-Person and Online Learning

Michelle Jensen
Charles R. Graham

Brigham Young University
Abstract

Implementation of blended teaching (BT) practices is increasing rapidly in K-12 classrooms, leading to an urgent need for professional development to support this mode of teaching. An understanding of how experienced teachers are implementing BT can inform teacher educators and leaders of professional development as they develop training that supports this practice. We interviewed 24 secondary educators implementing blended teaching strategies to determine what activities they include in the online space and how they connect them to in-person learning. Qualitative thematic analysis of the interviews revealed that experienced blended teachers used a variety of online activities providing opportunities for learners to interact with content, other learners, and the instructor. Learner-content interactions occurred in passive, interactive, and in ways that encouraged artifact creation. Instructors connected online to in-person activities in a variety of ways including: (a) using online data to inform in-person activities, (b) building relationships in both online and in-person activities, and (c) preparing for and reinforcing in-person learning in the online space. Our findings provide direction to educators and administrators overseeing professional development efforts.

Keywords: K-12, blended, online, data, teacher education, faculty development
Introduction

Excitement surrounding blended teaching (BT), a combination of in-person and online instruction (Graham, 2019), is evidenced by the "exponential" rate at which it has been expanding in K-12 environments (Barbour, 2017, p. 38). This rapid growth has also been noted by several other researchers including Graham (2019) and Schwirzke et al. (2018). However, understanding and implementation of professional development (PD) to support the effective implementation of BT has not kept up with the swift pace of blended learning adoption (Barbour, 2017). A lack of research on this topic is evidenced by a small number of articles available for two recent literature reviews. Philipsen et al.’s (2019) literature review found 15 peer-reviewed articles addressing PD to support BT between 2004 and 2015, and Short et al.’s (2021c) literature review found 21 peer reviewed articles addressing PD to support BT between 2007 and 2019. Inadequate PD to support BT practice was especially clear when rushed implementation that lacked prior preparation during the COVID-19 pandemic led some to assert that the online teaching (that was often part of a blended approach) should be termed “emergency remote teaching” because it lacked systematic planning, preparation, and development time (Hodges et al., 2020, p. 1). Moving forward, it is important for teacher educators and K-12 leaders responsible for PD programs to support progress towards effective BT practices (Trust & Whalen, 2020).

In a meta-analysis of PD to support blended and online teaching, Philipsen et al. (2019) put forth a framework that identified important structural characteristics of PD to support online and blended teaching. In answer to this article, An (2021) asserted that in addition to the recommended structures for PD to support BT, more needs to be understood about the content of such PD programs including what competencies are important for successful BT implementation.
During this time other researchers identified and compared teacher competencies for blended teaching (Pulham & Graham, 2018; Pulham et al., 2018. Further work was done in conjunction with the Michigan Virtual Learning Research Institute to synthesize the competencies into a Blended Teaching Readiness (BTR) framework and validate instruments for evaluating teacher readiness (Graham, Borup, Pulham, & Larsen, 2019; Archibald et al., 2021). The core BT competencies in the BTR framework focus on online integration, data practices, personalization, and online interaction (Graham, Borup, Short, & Archambault, 2019; Short et al., 2021b).

Online integration, the ability to effectively combine online instruction with in-person instruction, is foundational to effective BT because this mode of teaching combines two others—online and in-person learning (Graham, Borup, Short, & Archambault, 2019). In their practitioner resource, Graham, Borup, Short, and Archambault (2019) explained that an educator that is successful in the competency of online integration is able to utilize the affordances of online activities and in-person activities to allow the technology to do what it does best—this ensures that in-person time can be leveraged to meet the needs of learners in an efficient, non-repetitive way. Without effective online integration, educators risk “course and a half syndrome,”—a situation where an educator is reluctant to eliminate activities that were previously part of a course even when the learning goals of those previously implemented activities are met through online activities, perhaps in more effective ways (Kaleta et al., 2007, p. 125).

In a meta-analysis, Gerbic (2011) found integration of online and in-person learning an important issue in blended learning research. We can learn from the experiences of teachers currently using BT strategies as we look closely at what online activities they find effective and how they connect them to in-person learning activities. To accomplish this, we will address the following research questions:
1. What activities are blended teachers choosing to do online?
2. How are blended teachers connecting online activities to in-person activities?

**Literature Review**

In this section we will first explain how current researchers define blended teaching. Next, we will share recent research that explored the growth and effectiveness of blended teaching. Finally, we will review theoretical frameworks that our findings build upon. These frameworks include competencies important to effective BT, specifically those suggested in *K-12 Blended Teaching* (Graham, Borup, Short, & Archambault, 2019), the Passive Interactive Creative (PIC) portion of the PICRAT framework (Kimmons et al., 2020), and Moore’s (1989) Three Types of Interaction.

**Definition of Blended Teaching**

The terms “blended teaching” (BT) and “blended learning” (BL) are often used interchangeably in the literature, with one focusing on the activity of the teacher and the other focusing on the activity of the students. For our purposes in this article, we will use the term “blended teaching” unless we are directly quoting a source. BT must be accurately defined and its development understood prior to productive academic conversations on the topic (Barbour, 2017). We adhere to a broad definition of BT which represents a combining of instructional modalities (online and in-person) but does not require adherence to a specific pedagogical method (Graham, 2019; 2021). Within the broad definition of blended teaching, there are many more specific models. Often these models were identified through observation of existing teaching practices and require a particular pedagogical approach (see flipped model in Horn et al., 2014 or HyFlex model by Beatty, 2019). It is important for researchers to document the wide
variety of blended models and pedagogical strategies used in BT to help guide future teachers in their pedagogical decision making.

**Growth and Effectiveness of Blended Teaching**

There is evidence that the adoption of BT in secondary schools is increasing at a rapid rate. This increase is difficult to quantify and verify because of differing definitions of BT among institutions and difficulty documenting educators who implement the practice independently without their institution’s awareness (Graham, 2019). However, Graham (2019) included several clear pieces of evidence of this growth including national surveys that reveal an 8.6% increase between 2007 and 2008 in districts claiming they were implementing BT. In 2009, this same report found that 98% of K-12 blended learners were secondary students. Schwirzke et al. (2018) attributed this growth to growing acceptance of the practice, concern over competition from other educational providers, an increase in technology tools and resources, and understanding of BT’s potential to improve student learning.

The growth of BT has outpaced research evaluating its effectiveness (Barbour, 2017). Barbour (2017) went on to explain that much of the research findings on BT effectiveness comes from the Christensen Institute, an organization advocating for the practice. Additionally, most of the early research has found BT to produce results that are the same or only a little better than those of in-person programs. However, Barbour asserted that this early research is not grounds for abandoning BL; it is still possible to implement the practice effectively. Graham (2021) warned of the danger of using BT as a “treatment effect” and recommended researchers identify and evaluate the methods or pedagogical strategies implemented within the BT program being studied. This is because “the instructional methods used in a blend are the active ingredient that influences student learning” (Graham, 2021, p. 9). Thus, the question that researchers need to
answer is not “Does BT work?” but “What new opportunities does BT offer?” “Which of these opportunities should educators focus on to improve student learning?” and “What are the best practices or most effective ways of implementing these opportunities?” (Arnett, 2014; Schwirzke et al., 2018). Additionally, researchers have found that the success of BT initiatives is often the responsibility of the program’s administration requiring careful planning, professional development for teachers, continued support, and patient follow through as BT programs can take several years to show improved student outcomes (Schwirzke et al., 2018).

**Blended Teaching Competencies**

As BT emerged as a common instructional practice, initial PD efforts focused on technology tools (Graham, Borup, Pulham, & Larsen, 2019). However, researchers found that BT was more than simply adding technology to traditional teaching (Bjekic et al., 2010). Thus, it is important that educators obtain the skills or “competencies” necessary to successfully engage in this mode of instruction. Though some of these competencies may be a part of traditional or even online teaching methods, some are unique to BT and some are implemented differently with this mode of instruction (Pulham et al., 2018). Researchers have worked to identify these competencies (Akarawang et al., 2015; Bjekic et al., 2010; Pulham & Graham, 2018). Pulham and Graham (2018) narrowed these competencies down to eight practices. This research progressed to produce a validated instrument to measure BT readiness that included 13 competencies (Graham, Borup, Pulham, & Larsen, 2019). As this work continued, Graham, Borup, Short, and Archambault (2019) developed a practitioner resource to explain and support four competency areas of online integration, data practices, personalization, and online interaction.
K-12 Blended Teaching includes descriptions of all four competencies—online integration, data practices, personalization, and online interaction. A teacher that is competent in data practices can create and track mastery-based assessments that are aligned with identified learning standards and identify and use student performance patterns to recommend effective learning activities for students and improve instruction and learning materials. Personalization involves planning learning activities and assessments that allow students to direct their own learning based on their individual interests, abilities, and goals. Though personalization may be guided by the teacher, this practice allows many learning decisions to be made by the student. Effective online interaction requires a teacher to facilitate effective communication practices between teacher and students and between students and the rest of the class. Teachers that are competent in this practice can create and facilitate synchronous and asynchronous online discussions and engage in an effective feedback cycle (Graham, Borup, Short, & Archambault, 2019).

Online integration is the competency this study focuses on. Online integration is foundational and unique to BT because BT combines two other modalities: in-person and online instruction. Strategic integration of these two modalities can result in amplifying student learning. As educators plan for online interactions, it is important that they implement new management practices to create routines and expectations for respectful and efficient use of the learning tools. This may include developing, teaching, and practicing new norms and routines and effective monitoring and coaching student activities while transitioning to and working online (Graham, Borup, Short, & Archambault, 2019). The following two frameworks address the types of online activities educators may select in a BT format.
Three Types of Interactions

Moore’s (1989) interaction framework classified student learning interactions into three categories—learner-content (L-C), learner-instructor (L-I), and learner-learner (L-L; See Figure 1). Though initially described for distance learning, this framework is applicable to other modes of teaching including this study of BT. L-C interaction involves learners interacting with the content independently through text, audio media, or video media. L-C interactions should result in a change in the learner’s understanding or perspective. L-I interaction involves learners interacting with the instructor synchronously through face-to-face or virtual meetings or asynchronously through digital communication. This interaction can support student interest in the course topic and motivation to succeed in the course. Individual L-I interactions can address individual student needs. L-L interaction involves students interacting with one another. Some consider this type of interaction essential to developing collaboration skills needed in the workplace and society. Moore goes on to suggest that an appropriate mix of all three types of learner interactions leads to more effective student learning.
In an effort to guide effective use of technology integration, Kimmons et al. (2020) developed the PICRAT framework. For the purposes of this study, we focus on the PIC (passive, interactive, and creative) portion of the framework. This portion of the framework addresses what students are doing with technology. Examples of passive use of technology include reading a digital text or watching an instructional video. Examples of interactive use of technology include responding to questions and prompts, engaging in formative assessments that provide immediate feedback, exploring simulations, collaborating with other students to solve a problem, visits to virtual worlds, simulations of labs, and activities that would otherwise be impossible or cost prohibitive. Examples of creative use of technology might be students creating digital presentations of their learning such as blog posts, videos, or slides. Though educators should
strive to have students interact with technology in creative ways, there is a place for passive and interactive interactions with technology.

Methods

This research study is part of a larger research project that collected data through interviews from 62 participants exploring their blended teaching practices. Currently published articles from the data include research that has focused on barriers and enablers to blended teaching (Hanny et al., 2021) and competencies within the blended teaching readiness framework (Short et al., 2021a), including specifically the competency of personalization (Short & Graham, in review). A description of how these participants were selected and rational for our narrowed participant selection follows, along with descriptions of our data collection and analysis processes.

Participants

This study draws on a subset of participants from a larger study looking at all four competencies in the K-12 blended teaching readiness (BTR) framework (Graham, Borup, Short, & Archambault, 2019; Archibald et al., 2021). The full pool of participants included 62 teachers across grade levels and subject areas who were recruited through a variety of professional networks and were selected to interview because they had at least one year of blended teaching experience. For this research study we have chosen to focus exclusively on the BTR competency of online integration in the secondary school context. Therefore, we selected the subset of 24 participants who taught the core subjects of English Language Arts, Math, Science, and Social Studies in high school contexts. All six teachers in each of these 4 core subject areas were selected resulting in 24 participants. The 24 selected participants had between 3 to 10 years of
teaching experience and represented school districts throughout the country including Nevada, Virginia, Utah, and Georgia.

**Data Collection**

Selected teachers participated in a 60- to 90-minute interview over zoom with a member of our BT research team. The interviews were conducted in a semi-structured format using a previously developed protocol centered around teacher experiences with the K-12 blended teaching competencies. The protocol included a section that specifically addressed the competency of online integration and asked teachers to describe their blended instruction and their decision-making process and rationales for their blended approach.

**Data Analysis**

The purpose of the first research question was to better understand what kinds of activities participants were moving to the online portion of the blends they were creating. We were interested to know if the online portions of the blend spanned a spectrum of interaction types or if they tended to focus mostly on learner-content interaction. To do this we began by identifying each online activity that teachers mentioned. Next, we categorized them according to two existing frameworks. This aligns with Wolcott’s (1994) work suggesting that turning to existing theory is one possible approach to qualitative interpretation that allows researchers to link their work to prior research. The identified activities were categorized using Moore’s (1989) interaction framework based on the types of learner interaction occurring in the activity (learner-content, learner-learner, learner-instructor). We further used the PICRAT framework (Kimmons, et al., 2020) to categorize the activities involving learner-content interaction as passive, interactive, or creative. Because we used a priori codes for analysis of the first research question, we tested the reliability of our code book by having a second coder independently apply the
codes. We feel confident in our coding categories, as we were able to achieve an 80% or greater inter-rater agreement for all categories. We also utilized negative case analysis by noting the prevalence of participants that supported each theme, thus offering transparency when themes lacked supporting evidence from some participants. We then reviewed the interviews of the participants that did not explicitly make comments supporting one or more themes, looking for evidence of disagreement with identified themes and noting this in our findings.

The purpose of the second research question was to understand how teachers were connecting the online and in-person parts of their blended instruction. Because there were not any existing frameworks addressing this question, we used Braun and Clark’s (2006) thematic analysis process for identifying emerging themes and patterns. The steps that our analysis followed are listed in Table 1. Though some of the steps were repeated and refined, this is a general overview of how our analysis proceeded.
Table 1

Thematic Analysis Process

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<tr>
<td>1</td>
<td>Familiarize oneself with the interviews by reading them several times and making annotations.</td>
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<tr>
<td>2</td>
<td>Generate initial codes and gather data that pertains to each code.</td>
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<tr>
<td>3</td>
<td>Organize and combine codes into initial themes and gather data that pertains to each theme.</td>
</tr>
<tr>
<td>4</td>
<td>Review themes with the original transcript to check for coherence to the whole of the data.</td>
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<tr>
<td>5</td>
<td>Define and name themes in a way that clearly presents the data and tells a compelling story in relation to existing research and theoretical frameworks.</td>
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<td>6</td>
<td>Produce a report by selecting interview quotes that relate to the original research questions and prior research.</td>
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</table>

Note. Adapted from “Using Thematic Analysis in Psychology” by V. Braun and V. Clarke, 2006, Qualitative Research in Psychology, 3(2), p. 87.

The lead researcher became familiar with the interviews by reading them several times and making annotations. Then the researcher analyzed the interviews and assigned initial codes using Quirkos. Following this, the lead researcher organized the codes into themes. These themes were reviewed with the original transcript to check for coherence to the whole of the data. Themes and related interview excerpts were also reviewed by three other experienced BT researchers and refined based on their input. Next, the lead researcher defined themes and mapped the thematic network. Finally, the lead researcher presented and discussed the themes in a report with quotes from the interviews and findings related to existing theoretical frameworks and the original research questions. Partial member checking (Lincoln & Guba, 1985) was
achieved by asking 6 of the 24 participants to review findings in the final report. These six agreed with the reported findings.

**Limitations**

This study attempted to understand general online integration decisions and interviewees were asked to focus on pre-pandemic practices. However, since many interviews occurred during the COVID-19 pandemic, some responses may have reflected the emergency remote teaching that was occurring during that time rather than the general teaching practices of our interviewees. Also, our research team included members with extensive blended teaching experience—both as researchers and practitioners. It is likely that this carries with it some biases which we attempted to mitigate by including team members with diverse experiences.

**Ethics**

Research participants received a small stipend for their participation. Approval for this research was granted through the associated university’s Institutional Review Board.

**Findings**

We sought to understand what learning activities BL instructors were including in the online space and how they were connecting them to in-person learning. We found that the online activities aligned with Moores’ Three Types of Interaction framework (1989), with online activities including learner interactions with content, the instructor, and other learners. L-C interactions aligned with the PIC (passive, interactive, and creative) portion of Kimmons et al.’s PICRAT framework (2020). We found that participants’ strategies for connecting the online space with the in-person space aligned with several themes that we labeled Data, Relationships, and Preparation and Reinforcement.
Online Activities

The blended teachers we interviewed talked about their experiences moving their instruction to a blended modality. They often talked about specific activities or lessons that they created or repurposed for the online space. Upon review of participant interviews we identified 18 distinct activities (see Figure 2). On average, participants reported on 10 activities in their interviews. We classified these activities as Learner-Content (L-C), Learner-Instructor (L-I), and Learner-Learner (L-L) interactions (Moore, 1989). We further classified the L-C activities as Passive, Interactive, and Creative (Kimmons et al., 2020). See Figure 2 for a map of the thematic analysis of online activities.
Moore (1989) identified three types of activities that occur in distance or online learning. In answer to our first research question, we found evidence of L-C interactions and L-L interactions among 100% of teachers interviewed and evidence of L-I interactions among 83.3% of the teachers we interviewed (Table 2).
Table 2

Evidence of Three Types of Interactions in 24 Participant Interviews

<table>
<thead>
<tr>
<th>Code Occurrence</th>
<th>Type of Interaction</th>
<th>Interaction code description</th>
</tr>
</thead>
<tbody>
<tr>
<td>100%</td>
<td>Learner-Content</td>
<td>Learners are interacting with content online.</td>
</tr>
<tr>
<td>100%</td>
<td>Learner-Learner</td>
<td>Learners are interacting with other learners online.</td>
</tr>
<tr>
<td>83.3%</td>
<td>Learner-Instructor</td>
<td>Learners are interacting with the instructor online.</td>
</tr>
</tbody>
</table>

**Theme 1: Learner-Content**

All of our interviews showed evidence of L-C interactions, with this category including the largest variety of activities among the L-C, L-C, and L-I classifications. Perhaps this is because as instructors begin blending, they often start by moving content online. These interactions aligned with Kimmons et al.’s (2020) PIC framework, further answering our first research question (Table 3).

Table 3

Evidence of PIC Activities in 24 Participant Interviews

<table>
<thead>
<tr>
<th>Code Occurrence</th>
<th>Type of Activity</th>
<th>Activity code description</th>
</tr>
</thead>
<tbody>
<tr>
<td>87.5%</td>
<td>Passive</td>
<td>Learners are interacting with content in passive ways.</td>
</tr>
<tr>
<td>100%</td>
<td>Interactive</td>
<td>Learners are interacting with content in active ways.</td>
</tr>
<tr>
<td>83.3%</td>
<td>Creative</td>
<td>Learners are interacting with content in creative ways.</td>
</tr>
</tbody>
</table>

Evidence of passive L-C online activities occurred in 87.5% of our interviews. This lower occurrence may be due to our participants’ desire to use passive learning activities less often in an attempt to move towards interactive learning activities, as the PIC portion of the PICRAT
framework recommends (Kimmons et al., 2020). Participants used the online space for passive activities including readings and videos, both instructor-created and curated (Table 4).

Table 4

*Examples of Passive L-C Online Activities*

<table>
<thead>
<tr>
<th>Passive L-C Activities</th>
<th>Examples From Interviews</th>
</tr>
</thead>
</table>
| **Readings**           | • Instead of me giving them this one article that you're going to read using a blended format, they could pick from five different options that they wanted that all connected back into the objective, but had a lot more options. (Beth)  
• Well, even with my Weebly, I started posting articles on there, particularly, if at the last minute I decided I wanted to use something with several pages and I didn't want to copy it. (Travis) |
| **Videos (Instructor Created)** | • I could post recordings and show them exactly how to do it with my own voice or read them something in the tone that I wanted them to understand it. (Brad)  
• My team teacher and I, we had made our videos and then uploaded them to YouTube because YouTube imports closed captioning and for our ESL students the hearing and seeing the written word is better for them. (Darren) |
| **Videos (Instructor Curated)** | • The one way that I've used the blended learning aspect is to have them watch on their own. I don't know if you're familiar with the TV series Band of Brothers, but there's a scene in that where they actually find a concentration camp and they liberate it. (Marshal)  
• You can even go as far as just using YouTube to really get kids to be inspired. You can show them a clip, a phenomenon, something that's going on and say why do you think this is happening. (Peter) |

Evidence of interactive L-C online activities occurred in 100% of our interviews. Our participants often mentioned the benefits of instant feedback, data collection, and personalization of pacing afforded by online interactive L-C activities. Interactive L-C activities that participants included in the online space are games, choice boards, interactive presentations, formative
quizzes, personalized software, simulations, research and exploration, assignments, and taking
notes (Table 5).
<table>
<thead>
<tr>
<th>Interactive L-C Activities</th>
<th>Examples From Interviews</th>
</tr>
</thead>
<tbody>
<tr>
<td>Games</td>
<td>It's like a review. They go through these questions, but it's like a race and it's fun, because it's a game, right, they're all competitive. (Maria)</td>
</tr>
<tr>
<td>Choice Boards</td>
<td>When it comes to the playlist, I give them more information that they need in the playlist, and I put the most important one at the top. If they still can't figure it out there's more resources underneath going on for quite a while and the objective is that they learn to self-select from that list. (Mandy)</td>
</tr>
<tr>
<td>Interactive Presentations</td>
<td>I like to use Nearpod because it's an interactive experience for them. They draw what they remember seeing under the microscope or they take a quiz, or they do a poll and they engage. (Maria)</td>
</tr>
<tr>
<td>Formative Quizzes</td>
<td>I did regular assessing, like quizzes and used data more often. And as a result, test scores skyrocketed. (Mai)</td>
</tr>
<tr>
<td>Personalized Software</td>
<td>Students read through the article. Take a little four question quiz at the end . . . It takes a few readings and quizzes for them to get a baseline and then gives them this reading level. And then it also gives little indications for which skills that they're doing great on and which skills they're struggling with. (Don)</td>
</tr>
<tr>
<td>Simulations</td>
<td>I will give them an online simulation, a lab where they go through the mixed reactions and they can do 10, 20, 30 trials, which would take maybe two weeks if we did it hands on. They can do it in 20 minutes, see the data and then think, why do you think those things happened? (Peter)</td>
</tr>
<tr>
<td>Research &amp; Exploration</td>
<td>They had to tell me, in the end, how much it would cost to carpet their house, how much it would cost to paint the walls in their house using area and that stuff . . . They had to do the research. How much does paint cost? (Trina)</td>
</tr>
<tr>
<td>Assignments</td>
<td>I use Google Slides to do a lot of interactive assignments… I can create background images with instruction that the students can't mess up and then there are just interactive parts, click and drag this here, take your link and place it here. (Tom)</td>
</tr>
<tr>
<td>Taking notes</td>
<td>I've copied and pasted it into a Google Doc. They can highlight, they can make notes that way. So, they're engaging with that. (Sandy)</td>
</tr>
</tbody>
</table>
Creative L-C activities were mentioned at a slightly lower frequency—83.3% of our interviews. Though most of our participants saw value in creative interactions, some found it difficult or less effective to move these types of activities to the online space, preferring to reserve creative learning activities for the in-person space where students could be monitored and supported by instructors and easily collaborate with their peers. However, our participants that did provide online creative L-C interactions for their students realized the benefits of a short feedback loop and technology that allowed their students to demonstrate their learning in new and exciting ways. Creative L-C activities that instructors moved or added to the online space included coding, essays, projects, posters and brochures, and art (Table 6).
Table 6

Examples of Creative L-C Online Activities

<table>
<thead>
<tr>
<th>Creative L-C Activities</th>
<th>Examples From Interviews</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coding</td>
<td>Some students might like Minecraft, scratch. (Sara)</td>
</tr>
<tr>
<td>Essays</td>
<td>I've had a student that has revised a paper several times over and over and just kept sending it back and I said the same thing. Here's what you've done well. Here's one thing I would consider revising... She had turned this thing in I don't even know how many times. (Tom)</td>
</tr>
<tr>
<td>Collaborative Projects</td>
<td>In addition to collaborating with their international peers, students collaborated with their classmates. One example is where a class collaborated on a school-wide Peace Week project. Students were divided into subgroups based on whatever topic they were most passionate about. (Mai)</td>
</tr>
<tr>
<td>Posters &amp; Brochures</td>
<td>We made brochures. We made like travel guides and they got to pick. Quarter two to was all about urban legends. And so they pick an urban legend out of any of the ones that we went over and had to create a brochure. (Sandy)</td>
</tr>
<tr>
<td>Art</td>
<td>They're creating an original work based on an assigned mathematical equation...where they can use a number of different platforms like maybe they want to create a PowerPoint or maybe they want to make a video. (Robyn)</td>
</tr>
</tbody>
</table>

Theme 2: Learner-Instructor

Evidence of L-I online activities occurred in 83.3% of our interviews. This lower percentage was due to some participants reserving L-I interactions for the in-person space—using the online space for L-C interactions to allow more time for individual conferencing and small group instruction. Some instructors found online interactions too time consuming, preferring to communicate to students in large groups in person. However, participants that communicated online with their students often found that they were able to provide more timely feedback and this additional avenue of communication supported the development of teacher-
student relationships. L-I activities that instructors included in the online space included feedback and participation in online discussions (Table 7).

**Table 7**

*Examples of L-I Online Activities*

<table>
<thead>
<tr>
<th>L-I Activities</th>
<th>Examples From Interviews</th>
</tr>
</thead>
</table>
| Feedback                | • So, it helps me be a lot more personal with my feedback. It's easier for me to give almost immediate personal feedback to students while they're working, as opposed to a few weeks down the road. (Don)  
• I've been able to go in their assignments to the suggestions and so they can see if I have issues there or I can add my own comment they like, this was plagiarized, not okay. (Sandy) |
| Participation in        | • Every week, we'd have a discussion prompt that had nothing to do with math. And they could respond and say whatever they wanted…I would contribute to the discussion, too. (Robyn)  
• On the discussion prompts that we've had, I can read through each one and I can be like, Oh, this one's a little off and think about this or I can be like, yeah, great thinking, and just being able to give that response to them individually has been really fun. (Melissa) |
| Discussions             |                                                                                                                                                        |

**Theme 3: Learner-Learner**

Evidence of L-L online activities occurred in 100% of our interviews. Though there was a smaller variety of these types of activities many educators found these interactions were natural for students, following patterns similar to social media and text communication. Online L-L interactions helped build classroom culture and relationships and allowed for student collaboration and learning that continued beyond the walls of the classroom as students interacted with each other outside of class. L-L activities that instructors moved or added to the online space included discussions, collaborative activities, peer review, and peer support (Table 8).
Table 8

Examples of L-L Online Activities

<table>
<thead>
<tr>
<th>L-L Activities</th>
<th>Examples From Interviews</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discussions</td>
<td>We use a lot of discussions…We would have our pairs record conversations and put them up on a discussion in Canvas. (Jean)</td>
</tr>
<tr>
<td>Collaborative Activities</td>
<td>You can make a keynote with four different colored squares and each one of them has a different color and you put a vocabulary word in the middle and you rotate. You can use it in a sentence or model and then you rotate the color squares on the next vocabulary word. (Trina)</td>
</tr>
<tr>
<td>Peer Review</td>
<td>If there's any sort of writing project or creative project where they're producing something that should have an audience, in my opinion, I put it in a discussion and I make them do a peer review. (Jean)</td>
</tr>
<tr>
<td>Peer Support</td>
<td>Our platform also allows them, if they do well on a focus area it'll say, are you available for help? And they can say, Yeah, I'll help somebody so then a kid can say Oh Hey [student] I saw that you will you help me with this. (Lori)</td>
</tr>
</tbody>
</table>

Connecting Online Activities to In-Person Learning

Once researchers listed and classified the activities participants included in the online space, they looked at the interviews to understand how participants were connecting online activities to in-person learning. Understanding how this connection occurs is important because without a connection between online and in-person learning we don’t have a blend. The instructors we interviewed connected online activities to in-person activities in several ways. We classified these as Data, Relationships, and Preparation and Reinforcement.

Theme 4: Data

Most of our participants connected the online and in-person space by using data to inform in-person activities. Technology was able to collect and analyze student data, allowing teachers to quickly act on the information. We saw examples of instructors adjusting and developing activities for their whole class, small groups, and individual students based on data. These
activities included remediation, extension, and individual conferences. We also saw examples of instructors using data to inform in-person groupings. However, one of our participants, Travis, said that he prefers to use anecdotal data collected during in-person learning to inform in-person learning.

As instructors reviewed online data, they could more clearly understand their learners’ needs and meet those needs in the in-person space. Beth often waited to plan her in-person activities until after consulting online data:

I have to be comfortable and patient with maybe not even knowing what’s happening tomorrow . . . because I’m getting so much more information and data quickly, that I have to wait until I get that to know where we’re going the next day. I might have some ideas, but I might totally veer off in a different direction.

Denise determined the amount of time she would spend on a topic by student progress information from personalized learning software:

It’ll tell me only 12% know this already and that really helps me to know what kind of pace I spend going through it because if 80% already know it, then it just needs to be maybe a 10-minute mini lesson. But if only 15% know it, then maybe it’s a two- or three-day thing that I need to cover to make sure that they really get it.

Several instructors mentioned being surprised that online formative data revealed many students didn’t understand as well as they thought, leading them to revisit topics in person. Brad related this type of experience when he said, “Wow, my entire class bombed this quiz. Oh. Okay, you know, we need to go back and talk about this . . . And just using that to drive us. Do some review. Asking them different pointed questions.” Sandy shared that there are times when fewer
formal formative checks do not reveal student understanding as well as a quick review of online data:

I ask them to thumbs up sideways thumbs down and they’re like, I’ve got it. Whereas, when I finally get that information, I’m like, oh you didn’t get this or some of you did. Let’s revisit it. It’s nice to be able to go back and get that information that same day in a very meaningful, quick way. I mean I could still get that information by going through worksheets or going through the assignments that same day and not sleep or I can let a computer solve that for me.

As these and other instructors we interviewed consulted online data while planning in-person activities, they were able to plan powerful in-person student learning activities.

Instructors were able to identify and meet students’ remediation needs by consulting online data. Robyn described how much this practice revolutionized her teaching:

One of the biggest life-changers in my career was actually looking at data and then targeting kids that couldn’t do it. You sort them really quickly. We have a flex intervention time at my school. And pulling them in—it’s magical.

Lori described how using data from an on-line platform to personalize her in-person workshops benefits her students:

I think it’s allowed us to really focus on what they needed. So, for example, if I have kids who in the previous project scored really low on say argumentative claim, then I can do a workshop on argumentative claim and the whole class isn’t going to come to that because most of them did okay. I’m just going to work with the kids who need it. Blended learning allows you to really personalize based on the data.

These examples illustrate the power of using online data to drive student remediation needs.
Instructors used online data to inform in-person conferences. Melissa described conferencing with a student within the same class period based on real time data she was monitoring:

When I see a student with three, four, or five Xs and they’re just not getting it, I know who to reach out to. I know how to help them. I know what they know and a quick, five- or 10-minute conference and we’ve identified the error and fixed it, and they’re able to move forward.

Sandy described using online data to support regularly planned student conferencing:

And so we’ll go through all of that data and see where they are. And then we’ll meet again mid-year and say, this is where you were at, these are the activities that we can work on in order to help improve this so that by the end of the year, you’re either higher than this or you are on the same track as you already were.

As these instructors consulted student data, they were more informed going into student conferences and better able to meet their students’ needs.

Instructors described using online data to inform in-person groupings. Melissa described using data to group students heterogeneously so that students that demonstrate strong understanding can support those that are struggling:

We get back our results and I know the kids that are really struggling with this concept . . . So, I rearranged the seating chart several times, so that I have a couple strong and a couple weaker at the table together to kind of help support.

Mandy described using data to create homogeneous groupings in a station rotation model to target specific learning needs:
I mentioned before that I do checkpoints leading into the final completion of a project. I can take all my students who turned in a checkpoint and didn’t do a very good job in a group. I can take all my students who didn’t turn in anything at all into a group and then take all my students who turned it in and nailed it into a group. Then I can decide how I want to use those three groups to push education the next day . . . A typical way I’ll do this is I’ll set up a station rotation. The ones that have done a good job—I’ll sit down with them for 10 minutes while the other two groups have specific assignments they’re working on and kind of work with them and then I’ll shift between the groups over the course of the day and have a personalized lesson for each of these categories of students according to what they need.

Allison’s groups are constantly changing based on the data. “It’s constant and those groups change based on the results of the tests. So, it’s not like my groups are the same all the time. They are constantly changing based on understanding the data and what the data is saying.”

These instructors, among others that we interviewed, shared how data informed student groupings that allowed students to receive more targeted instruction.

**Theme 5: Relationships**

All but one of our participants connected the online and in-person spaces by using both to build student relationships. This happened as instructors used time in which most students were engaged online to interact with individual students and used the online space as an opportunity to build relationships with students in addition to the in-person space. Tom, a math teacher, offered a warning that if teachers are not careful to monitor their classroom culture, relationships can suffer. He recommended including team building activities and opportunities for collaboration
and celebration during in-person learning. He went on to say, “It’s important to not lose the pulse of the relationships in the classroom and as a community.”

Several instructors shared the positive impact of individual interactions, allowed by engaging most students online. Denise felt that her relationship with her students was better as she got to know them individually:

I really feel like I have better relationships through blended learning because I do have time to really sit down with kids on an individual basis so that I’m getting to know them and getting to know what they’re able to do better . . . I can work with them, and really get to hear their, their concerns, their misunderstandings, and that brings me closer to the student, not just where math is concerned, but also more personally because I really connect more with them.

Mandy described an experience where she was able to connect with a student that wasn’t engaging in learning activities:

There is a student who never turned in any of her assignments, ever. But when we started working through some of this stuff I could walk around the classroom. I would see she wasn’t engaged. I would sit down and asked her why, and that gave an opportunity for her to talk about some of her challenges.

She went on to recommend that instructors use the opportunity that BT provides to build relationships with students:

I would say my biggest tip would be to stand up, walk around and interrupt students as they’re doing stuff and ask them what they’re doing and why they care and engage them in conversation about what they’re doing . . . Everything hinges around your relationship
with a student and you should use [BT] as a tool to find more time to encourage those relationships between you and the students.

Allison shared how important it is to connect with students individually:

[BT] has given me more time to get to know them and in terms of working more one-on-one or small group. I think that’s massive. The students really see that I’m a teacher that is passionate about their growth. We are getting that more intimate setting to sit there and talk.

These teachers and others that we interviewed used the opportunity allowed through BT to connect individually with their students while the rest of their class was working independently.

Instructors connected the online and in-person spaces by using both to build relationships with their students. This has led Adrian to connect with his students better than he ever has before. “They’re more likely to share stuff via a Canvas thing than to write you a letter. So now I know them better than I probably ever would have known them 15 years ago.” Several instructors, including Isabell, shared experiences of online communication alerting her to students’ need for professional help:

I flipped writing online this year. I hadn’t done that before and they opened up in a way that I’ve never seen them open up before. They were willing to tell me stuff that I don’t think they would have written sitting next to somebody on a piece of paper. And some of it just broke my heart. And it’s stuff I didn’t know that I felt made me a better teacher knowing what was going on in their lives. I was able to get a couple kids some help that I don’t even think I would have been aware of what was going on in their lives otherwise.

Isabell went on to share this experience:
I had one young lady who her mom had died a couple years before. And she had a stepmother now and the new baby. She would just write about her frustrations and her feelings that her dad wasn’t really caring about her anymore because now he had this new family and everything and all this, just a lot of emotion and stuff. I don’t know why but when they’re typing it into an online platform they just seem to feel more free. I think it’s because they’re tweeting and they’re texting and all these things and they’re used to being more free... That transference of some of that openness is there. She’s a really super quiet kid, never talks in class like doesn’t say, boo. I would have never known any of this stuff was going on. It just let me just say, Well, did you get some sleep last night? How’s the baby thing? Little just little things to connect her from the things that she shared that I don’t think I would have gotten without it.

As the online space that is a part of BT provides an additional platform for instructors to build relationships, these and many others we interviewed, found an opportunity for improving relationships with their students.

Using both platforms allowed teachers to better support students’ social and emotional wellness, addressing a growing concern in K-12 education. A more subtle connection between online and in-person activities that strengthened student-teacher relationships was that digital activities allowed teachers to increase the number of one-on-one interactions they had with students. This improved relationships regardless of what the topic of these interactions was.

**Theme 6: Preparation and Reinforcement**

We found that all of the teachers we interviewed used the online space to prepare students for and reinforce in-person learning. Some teachers used the online space exclusively for one or the other. However, most instructors used the online space for both preparation and
reinforcement. This was usually a fluid process with students moving back and forth between the online space, with the instructor choosing which platform best suited the learning goals.

Several instructors we interviewed explained how they used the online space for both preparation and reinforcement. Mandy explained, “It’s really hard to separate what is online or not because it’s kind of a constant flow between online and what we’re doing together.” Beth shared this:

We might do something online and then come back together in a face-to-face activity or discussion or assessment or something like that and then vice versa. We might do something in class, an activity or lesson, and then go to an online forum, maybe a canvas discussion board.

This type of fluid use of the online space was common among the teachers we interviewed.

Some of the ways that teachers used the online space to prepare students include introducing a topic, sharing student work in-class that was previously submitted online, and preparing for in-class discussions, presentations, deeper learning activities, and assessments.

Peter described introducing a topic in the online space:

I will use [the online space] only for the engagement piece, to kind of pique their interest. Maybe it’s not so much like they will start using the terminology, but the next day I will be the one to fill in the blanks . . . So what I like to do for that engagement piece is find an online simulation or an activity.

Sandy explained how sharing examples of students’ online work supports in-person learning. “I can pull up an example that has no identifying and ask what we can do to this paragraph to improve it?” Brad described asking his students to explore a topic online and then bring back questions and ideas for an in-class discussion:
I know you have questions; I want you to go out there and here’s your task list. I want you to find some answers. But I want you to come back with those questions. So that they’re each bringing in their pockets of knowledge from where they’ve come from on the internet or whatever resource that I’ve given them ... and then we end up spreading and sharing those in small and then larger group discussions.

Maria asked students to prepare a presentation online and then present it in-class. “They each get assigned one of the seven [organ systems] to learn and they start on Canvas. I tell them that they have to present it to their group. They’re required to teach their group about their organ system.”

Instructors described students preparing for deeper, project-based activities in the online space. Isabell explained, “The only way you can really have time to do project-based learning is if you’re front loading it with something, if you have a blended learning activity of some kind.”

Darren was one of several teachers that encouraged students to prepare for assessments through online activities, saying, “My homework was designed so that you could take them over and over and over again to get a perfect score . . . The students learn the information so that they can pass a test in the end.” These teachers were among many we interviewed that used the online space to prepare their students for in-person learning.

Some of the ways that instructors used the online space to reinforce in-person learning included revisiting or researching topics introduced in person, extension, remediation, and real-time online feedback. Tom described adding content to the online space to address ideas or questions brought up by multiple students during class:

I’ll have a conversation with a student independently. And then I’ll move to another student or another. Similar ideas will come up from several students- things that they’re
thinking about. What I can do with blended learning is I can go back into the content that I’ve left them online and I can add links to it.

Beth’s students researched a topic that they first learned about in person:

We did a couple of in-class lectures and activities. We defined resilience. We did a whiteboard activity. We did a little bit of face-to-face instruction about why I like history, or different things that we were going to study. And then in an online format students did some more research.

Denise described how providing the option to extend learning to future topics allowed a student to learn much more than he would have otherwise. “He went through all of the sixth grade accelerated topics, all the seventh grade accelerated topics, all the pre-algebra topics, all the algebra topics, and was over 80% finished with the geometry topics before the end of the year.”

Don used the online space to provide remediation activities for his students. “I would create Canvas courses for remediation and then I could determine who I would invite to that course.”

Marshal described using the online space to support students that were working in person in real time. “You are on the document the same time they are . . . You can leave a comment right there so they can get support and they know somebody is paying attention to them.” These are a few of many examples of teachers using the online space to reinforce in-person learning.

Our participants created a cycle where students and instructors can benefit from feedback, with students able to quickly revise or retry learning opportunities and educators quickly able to iterate student learning activities. This feedback prepared students so that they were more confident going into assessments, discussions, and deeper learning activities. Some participants connected the online space to in-person learning by using it to offer remediation activities to students that did not demonstrate mastery and extension activities to students that
mastered standards more quickly than other students. This also opened up an opportunity for learning to continue outside of class and after the bell rang. Students can continue to add on to what happens in class by acting on feedback, continuing to practice, and learning and researching beyond the walls of the classroom.

**Discussion**

This study provides implications for possible structures for PD to support BT. We also recommend each of the strategies our participants discussed to connect online with in-person learning as important topics for such PD. We link to current research supportive of including each of these topics: data, relationships, and preparation and reinforcement.

**Professional Development Structure**

As educators implement BT practices in unique ways, PD to support it should be personalized and reflect the BT teaching strategies PD organizers desire participants to implement. This aligns with findings in a report by The New Teacher Project (2015) that recommended a personalized approach to PD and aligns with a framework for PD to support BT put forth by Philipsen et al. (2019) which suggested PD supporting BT should work within the unique circumstances and preparation of each participant. Educators should be encouraged to evaluate their own strengths, weaknesses, and problems of practice as they select the learning strategies they add to their educational tool belt. This may differ by content area as suggested in the TPACK model that asserts that pedagogically effective use of technology often includes practices that are unique to individual content areas (Cox & Graham, 2009). In light of this, we recommend organizations consider in-person, online, and blended PD structures that allow participants to select PD opportunities and topics that will build teaching strategies that individual educators have identified as likely to leverage learning for their specific students.
Beyond large group PD formats, we recommend content specific groupings and individual and small group coaching.

To support unique implementation plans, this research has identified 18 online activities new blended teachers may select from (See Figure 2), along with descriptions of each of these activities (See Tables 4–8) and three strategies to connect online activities to in-person learning.

It is important to note the large variety of implementation practices among our participants. This evidence of the vast and varied potential BT offers suggests that BT is not a one-size-fits-all practice. This is demonstrated in our study as we see that among 18 different activities mentioned, our participants that are experienced with BT strategies only implement 10 of them on average. We offer a caution to educators and PD planners to approach BT carefully, trying out only a few strategies at a time.

**Data**

Within the past decade, the visible learning movement has encouraged educators to collect and use data to improve their practice and respond to students that haven’t demonstrated mastery (Fisher & Frey, 2018). Many of our participants used data to connect online and in-person learning. This aligns with findings of Short et al. (2021a) that data practices was a common competency among an extensive review of blended teaching educator artifacts (2021b). Data-informed decisions can result in more informed class wide learning experiences, remediation, conferencing, and groupings. However, as Sandy, one of our participants, noted, without using technology to evaluate the data the task would be far too time consuming. This leads us to recommend PD programs to support BT include training on accessing, evaluating, and using student performance data.
**Relationships**

Concern surrounding educators’ and their students’ social-emotional wellness has increasingly captured the attention of educational organizations. Recent research has highlighted the connection between students’ sense of school belonging and social-emotional outcomes including self-concept and self-efficacy (Korpershoek et al., 2020). Another study found that positive relationships with students increased educator social-emotional wellness and reduced teacher burnout (Milatz et al., 2015). A recent report from The Learning Policy Institute emphasized the importance of school support for social-emotional learning and recommended schools design school structures to encourage strong relationships (Darling-Hammond et al., 2020). Though some educators believe technology in education might distance students from teachers (Gerbic, 2011), many of the teachers we interviewed found the opposite was true. In light of this, educational leaders should challenge this common belief and encourage BT strategies that participants believed supported improved student-teacher relationships. These strategies were found within the learner-instructor interaction portion of Moore’s (1989) framework and include activities such as online discussions and feedback. Since both our research and that of Short et al. (2021b) found that these types of activities were slightly less common, PD to support BT should include direction, encouragement, and support for activities involving learner-instructor interactions.

**Preparation and Reinforcement**

We originally planned to separate preparation and reinforcement findings sections, but we found that few teachers used the online space exclusively for preparation or reinforcement with most participants moving fluidly between both connection strategies. Often this resulted in a form of self-directed learning with students driving their own learning and sharing that learning
with others in the online space. In their literature review, Morris and Rohs (2021) noted that self-directed learning prepared learners to work and live in an increasingly unpredictable world. They went on to share findings that in formal K-12 environments, technology-assisted, self-directed learning was best accomplished with support from educators that includes feedback, something that can be accomplished with the fluid use of online activities to prepare and reinforce in-person learning described by many of our participants. They also noted that educators needed PD to support their implementation of self-directed learning strategies, leading us to also recommend PD to support BT consider strategies to support learning environments that allow students some control over their own learning.

**Implications for Future Research**

As mentioned in the introduction, Graham, Borup, Short, and Archambault (2019) identified four blended teaching competencies—online integration, data practices, personalization, and online interaction. This article focused on online integration and a separate article has been written focusing on personalization (Short & Graham, in review). While aspects of the two remaining competencies are briefly addressed in the articles mentioned above, future research may focus on teacher experiences with data practices and online interaction (Graham, Borup, Short, & Archambault, 2019). A deeper exploration of these two competencies could expand our understanding of what these practices look like in different subject areas and provide direction to those designing and leading PD to support BT.

In this study we attempted to understand the range of different online integration practices that teachers were engaged in. We did not focus on the frequency that teachers implemented different activities and whether certain activities were more common than others
across grade levels and subject areas. Future research might seek to understand what patterns might exist for the kinds of activities teachers are choosing and not choosing as often and why.

This study has clarified important decisions that BT practitioners are making—the online activities they select and the strategies they use to connect these activities to in-person learning. As we look towards future research, it would be beneficial to understand more about why educators are making these instructional decisions. This might include how the support instructors receive from their institutions and their beliefs regarding blended teaching’s impact on student learning and well-being impacts their instructional decisions.

**Conclusion**

As we move towards an increase in technology infused learning, it is helpful to understand what activities educators that are experienced with BT are asking their students to do in the online space and how these educators are blending, or connecting, these online activities with the in-person learning. Our participants shared their experiences with implementing online activities that provided opportunities for students to interact with content in passive, interactive, and creative ways. Some of these activities also provided opportunities for students to interact with other learners and the instructor. However, it is important that these activities do not occur in isolation and are somehow connected to in-person learning activities. Our participants did this by using data generated during online activities to inform in-person activities and leveraging the online space as another platform to build relationships and prepare and reinforce in-person learning. These findings reinforced Moore’s (1989) categorization of online activities. They also identified strategies that educators could use to connect online and in-person learning, including using data, strengthening student-teacher relationships, and preparing and reinforcing in-person activities. These insights offer direction to those planning and implementing PD to support BT.
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Coaching to Support Blended Teaching: A Phenomenological Study of the Coaching Experiences of Emerging K-12 Blended Teachers

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Abstract

With the growth of blended teaching comes a need to support teachers that are shifting their instruction to this mode of teaching. Coaching is a form of professional development that is growing in K-12 institutions. However, research of coaching specifically intended to support blended teaching practices is lacking. This phenomenological qualitative study seeks to contribute to the body of research by exploring the coaching experiences of four K-12 teachers from second, fifth, junior high, and high school that are new to blended teaching. Through semi-structured interviews we sought to understand how our participants were experiencing the support for blended teaching instructional design and implementation that their coaches were providing. We found that participants' teaching practices were supported throughout their instructional process during planning, implementation, and reflection phases as coaches collaborated with teachers in activities such as brainstorming, training, technical support, observation, data analysis, and iteration. Coaches also developed relationships with teachers by conveying credibility, treating teachers as equals, communicating in a positive, non-judgmental way, being readily available, and cooperating with other teaching supports. These findings provide direction to coaches supporting blended teachers and administrators of coaching programs. Future research could explore changing needs as teachers build blended teaching confidence and differences in international settings.

Keywords: K-12, coaching, blended, online, data, faculty development
Introduction

Blended teaching (BT), a strategic combination of in-person and online instruction (Graham, 2019), is growing in K-12 schools as a result of increased acceptance of the practice and an understanding of its potential to improve student learning (Schwirzke et al., 2018). It is generally accepted that more than half of all K-12 students are involved in some form of blended learning (BL) (Moskal & Picciano, 2021). With this level of implementation, it is important to provide research-based PD to support educators’ progress towards effective BT practices (Trust & Whalen, 2020). However, BT requires new skills and competencies that many educators are not familiar with (Graham et al., 2019). Research surrounding professional development (PD) to support blended teaching BT is increasing but leaves room for growth (Graham, 2019), as evidenced in Short et al.’s (2021) extensive literature review that found a need for more research in the area of PD to support K12 teachers’ implementation of BT. Another systematic meta-aggregative review of research of teacher professional development for online and blended learning only found 15 applicable studies between 2004 and 2015 (Philipsen et al., 2019). Following an in-depth study of teachers’ experience with a PD program to support BT, Puhala (2020) recommended further research of other such programs from the perspective of teacher participants.

Philipsen et al. (2019) recommended that PD to support online and BT should include continued support and feedback, consider the existing context teacher participants are working within, address necessary changes to teachers’ beliefs, roles, and identities, and develop materials that can be implemented immediately. Instructional coaching, a growing practice within K-12 education organizations, has been found to improve instruction and student outcomes (Kraft et al., 2018), and may be an effective strategy to meet Philipsen et al.’s (2019)
recommendations. Several organizations are already using coaching as a strategy to support implementation of blended teaching practices (McQuillan, 2018; Puhala, 2020; Riel et al., 2016).

As more coaches support educators in their efforts to blend their instruction, researchers and practitioners will benefit from a closer look at what a supportive coaching experience focused on BT implementation looks like from the perspective of the teacher. This phenomenological study specifically looks at the coaching portion of one such PD to understand coaching strategies that support BT implementation and contribute to a positive coaching experience for educators. Researchers analyzed the experiences of several teachers that are new to BT and experienced significant support from an instructional coach in an attempt to answer the following research question: How are teachers experiencing coaching support regarding their design and implementation of BT?

**Literature Review**

In this section we will begin by defining and explaining the background of blended teaching. Next, we will look at research related to current professional development (PD) practices designed to support BT including Philipsen and colleagues’ (2019) suggested framework. Finally, since our research focuses specifically on coaching as a part of PD to support BT, we will discuss several coaching models currently being implemented in K12 schools.

**Blended Teaching**

Blended teaching (BT), is focused on the pedagogical aspects of blended learning and must be defined prior to discussion of the practice (Barbour, 2017). For our purposes we refer to BT as instruction that combines online and in-person modalities and allows for the full range of pedagogies possible in both (Graham, 2019; 2021). Support and use of BT practices in K-12
schools is increasing rapidly (Graham, 2019; Schwirzke et al., 2018). Schwirzke et al.’s (2018) research found that BT initiatives require patience as they often take several years to improve student learning. They went on to recommend that organizational planning including PD and continued support was essential for BT initiatives to be successful.

**Professional Development to Support Blended Teaching**

In a meta-analysis published in 2019 of research between 2004 and 2015, Philipsen et al., 2019 identified six important elements for PD to support online and BT:

1. Teachers should be supported throughout the PD process and beyond.
2. PD should consider and be contextualized within the institutional and personal reality and preparation of participants.
3. PD should address necessary change in relation to participants’ professional identities and beliefs.
4. PD should set and articulate clear goals and processes.
5. PD should identify and support effective strategies to transition to online and BT.
6. PD should include a plan to identify and share what participants and instructors have learned with others and use this information to continuously improve PD to support online and BT for others.

Through further review of recent literature, we found support for strategies included in the PD plan this research is studying. These practices include modeling BT, communities of practice, and coaching.

**Modeling**

Several studies found that delivering PD in a blended format encouraged participants to implement the strategy in their instruction (Azukas, 2019; Papadakis et al., 2019; Pombo et al.,
2017; Stevens et al., 2018). In fact, modeling was so effective that one study found that participants became frustrated with PD delivery that didn’t align with principals of blended teaching (Stevens et al., 2018). Further, Azukas (2019) found that the blended teaching environment was an effective tool to accomplish their primary goal of fostering a community of practice.

**Communities of Practice**

A community of practice is a group of learners with a common learning goal that interacts regularly and supports one another. Supporting PD efforts with a community of practice is gaining ground in educational organizations (Wenger-Trayner & Wenger-Trayner, 2015). Several recent studies have looked at organizations that implement communities of practice as a part of their PD program to support BT (Azukas, 2019; Pombo et al., 2017; Stevens et al., 2018). In a Azukas’ (2019) study of a PD program focused on personalization that included support for BT, a community of practice led to increased self-efficacy and building new competencies related to BT, including technology, instructional design, and facilitation skills. At the conclusion of this PD participants recommended technology implementation as an important component to effective personalization.

**Coaching**

Several studies used coaching as part of larger PD efforts to support BT implementation (McQuillan, 2018; Puhala, 2020; Riel et al., 2016). One study concluded that for coaching to successfully support BT, a coaching support structure should be planned and coaches should receive training on BT and coaching prior to implementation of the PD plan (Pulaha, 2018). At the conclusion of Azukas’ (2019) study of a PD program to support personalization that included
BT strategies, participants suggested that coaching support could be helpful during their implementation of strategies they had discussed.

**Instructional Coaching Models**

Coaching is growing quickly among K-12 education organizations and may improve teaching practices as part of a larger PD plan (Wei et al., 2009). Recent research has found that coaching is a much more effective form of PD than workshops and lectures and “is one of the most promising frameworks for providing effective professional development” (Connor, 2017, p. 82). Though there are many coaching models in the literature, they all build upon a foundation of the following assumptions:

1. Because teachers influence student learning, improving instruction will result in improved learning outcomes.
2. Collaborative work between teachers and coaches has a greater potential to empower teachers and improve practice than a workshop or lecture form of PD.
3. Coaching should include observation and feedback. (Connor, 2017)

As previously mentioned, there are many research-based coaching models. For the purpose of this research, we will briefly describe three models used within the participating school district.

Jim Knight’s Impact Cycle recommends a process that begins by identifying a goal based on a clear picture of reality. This reality may come from recording and reviewing video of the class, student feedback from interviews or conversations, or reviewing student work. Once teachers clearly understand the reality of the instruction and learning taking place, they identify an improvement goal and a strategy to reach it. Next the coach supports learning by sharing and modeling the strategy. Finally, the teacher improves by practicing the strategy with the coach monitoring progress until the goal is achieved. At the conclusion of the cycle the teacher may
continue to work on the goal or identify a new one (Knight, 2018). Knight (2022) also recommends that coaches consider seven partnership principles when working with teachers or teams—equality, choice, voice, dialogue, reflection, praxis, and reciprocity. *Equality* suggests coaches respect and value the professional experience of teachers they work with. *Choice* reminds coaches that teachers are the final decision makers in matters concerning instruction that happens in their classroom. *Voice* encourages coaches to listen to and respect the opinions and feelings of the teachers they work with and allow them to guide coaching conversations. *Dialogue* leads to coaches and teachers sharing ideas back and forth that energize both of them. *Praxis* means that coaching is embedded in the reality of the teacher’s classroom teaching and addresses principles that matter to them. *Reciprocity* leads coaches to expect to learn with and from the teachers they are coaching by valuing their ideas and input.

Diane Sweeny’s Student-Centered coaching also begins with teachers and the coach working together to identify a student learning goal. However, this goal is determined through a more quantitative method based on a pre-assessment of learning standards and learning targets rather than a qualitative approach of observation and student input. Next, the teacher/coach team plan instruction based on students’ needs. This is followed by implementing and adjusting the instruction as needed. Finally, students are reassessed to see if they have reached the goal and retaught if they haven’t (Sweeney, 2013).

Elaina Agular’s Transformational Coaching adds upon the two previously mentioned models by suggesting that coaching should address a client’s behaviors, beliefs, and being. Agular emphasizes the importance of carefully developing a relationship of trust and considering the lens from which coaches and participants are working. This helps coaches understand whether to use a facilitative or directive approach with a participant. According to Agular,
effective coaching can impact the institutions and systems within which the client works and then continue to affect worldwide education and social systems (Aguilar, 2013).

**Method**

This study used Interpretive Phenomenological Analysis (IPA) (Smith & Osborne, 2003) to understand how emerging blended teachers experienced coaching support. Foundational to this research are the following assumptions:

- Blended teaching (BT), as described for practitioners in K-12 Blended Teaching: A Guide to Personalized Learning and Online Integration (Graham et al., 2019) can be an effective teaching practice.
- Coaching can support teachers’ implementation of new teaching practices.

To this end our study will address the following research question: How are teachers experiencing coaching support regarding their design and implementation of BT?

**Context**

Research participants were teachers from a K-12 public school district in the midwest. This district supports BT; however, teachers are not required to implement BT practices. District support includes providing the physical tools and professional development (PD) to support BT. Physical tools include student devices, software, and basic technical support. Training includes asynchronous courses and tutorials, job embedded coaching, and large group training—both general and content specific. This study seeks to understand how teachers, who are trying BT strategies for the first time, experienced coaching support.

All participants completed a voluntary, coach-supported PD program aimed at improving BT practices. All teachers that completed this PD were paid $300 through the Elementary and Secondary School Emergency Relief Fund (ESSER Fund) that was available to this district as
part of the Coronavirus Aid, Relief, and Economic Security (CARES) Act, legislation aimed at mitigating the negative effects of the COVID-19 pandemic (U.S. Department of Education, 2020). Participation in the PD course followed the following three stages:

- **Stage 1: Independent learning (2–3 hours)**
  - Engage in 2–3 hours of independent asynchronous learning with content adapted from *K-12 Blended Teaching: A Guide to Personalized Learning and Online Integration* (Graham et al., 2019).

- **Stage 2: Initial lesson design (4–5 hours)**
  - Complete and submit the blended unit planning document that scaffolds teachers through the design of their blended lesson focusing on foundational understanding of BT, online integration, data practices, and personalization.
  - Redesign a unit to implement BT practices and submit the lesson plan. After submission a course instructor will notify an assigned Innovative Learning Coach (ILC) that the participant is ready for coaching.

- **Stage 3: Coaching supported implementation and reflection (6–10 hours)**
  - Meet with an assigned ILC to discuss the planned unit including selected activities, technology tools, connection between online and in-person learning and any other questions or needed support.
  - Implement blended unit with students
  - Meet with assigned ILC to reflect on the blended unit and plan for future blending and support.
Participants

Four research participants were selected based on information from a survey completed at the end of this 12–18-hour PD experience and a review of their blended lesson plan. First, selected teachers indicated they are new to BT with a response of “0–2” to the survey question, “How many years of blended teaching experience do you have?” Second, selected participants indicated that they received significant coaching support with a response of “Very Well” to the survey question, “How well did your coach support your unit planning?” The lead researcher then reviewed the blended lesson plans from this group of respondents and do a purposive sample from the teachers that meet the new to BT and significant coaching support requirement to find four cases with the following additional characteristics:

- Two secondary teachers (in different subject areas) and two elementary teachers (in different grade levels)
- The maximum variety of online and in-person integrated activities as determined by a subjective review by the lead researcher

Table 1 includes a description of each participant. These four participants were asked to participate in the study by completing two semi-structured interviews and consenting to further analysis of artifacts from their participation in the PD course and offered a $50 stipend to compensate for their time. In the event that any of the selected respondents were unwilling to participate, the lead researcher contacted a different candidate based on the selection criteria described above.
Table 1

Description of Research Participants

<table>
<thead>
<tr>
<th>Participant</th>
<th>Grade Level/Content Area</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jessica</td>
<td>Jr. High School English Language Development Teacher</td>
<td>Excited about the new opportunities blended teaching offers after a 21-year break from teaching but nervous about learning how to use the tools</td>
</tr>
<tr>
<td>Kim</td>
<td>2nd Grade Teacher</td>
<td>Experienced teacher that is interested in finding a way to meet with small groups more often, collaborates closely with another 2nd grade teacher</td>
</tr>
<tr>
<td>Amy</td>
<td>5th Grade Accelerated Learning Teacher</td>
<td>Experienced teacher working to provide students with better feedback, believes that technology should enhance in-person learning</td>
</tr>
<tr>
<td>Maria</td>
<td>High School English Language Arts Special Education Teacher</td>
<td>Seven years of experience, confident with technology, enjoys learning more about teaching strategies and technology tools independently after a brief introduction</td>
</tr>
</tbody>
</table>

Data Collection

Participants completed a planning document while working through the online portion of the PD experience and a self-evaluation of their blended unit. Once selected, they engaged in two semi-structured interviews. These documents and the interviews provided insights into how participants experienced coaching.
The blended unit planning document was a scaffolded template to support course participants brainstorming and instructional development while working through the course. Once participants completed this document, they met with their ILC. This coaching session was intended to review instructional plans, address participants’ pedagogical questions and concerns, and allow the ILC to address common pitfalls, especially in the online portion of the blend. The ILC may have added comments and notes to this document during the meeting.

The self-reflection document was a template to support participants' self-evaluation of their blended unit. Once participants completed this document, they reviewed it with their ILC. During this coaching session participants shared with ILCs what went well and what they would like to improve in their units. This was also an opportunity for the ILC and the participant to begin considering future BT plans. The ILC may have added comments and notes to this document during the meeting to record insights and future plans.

Two semi-structured interviews were held over zoom and recorded. The lead researcher reviewed the transcript generated by zoom with the video recording to ensure accuracy. While interviewing the lead researcher also took notes about their perception of participants’ feelings and demeanor to support the interview transcript.

The interview protocols were developed with input from three experienced BT researchers. The first interview addressed participants’ background, including their level of experience and education and their general feelings about coaching and BT. This interview began to explore how participants experienced coaching, especially pertaining to support of their decisions regarding what activities students would do online, the connection between the online and in-person activities, the implementation of the unit, and future BT plans. Prior to the first interview, the lead researcher reviewed the blended unit planning document and the self-
reflection document to review the participants' blended unit and look for BT instructional decisions that may have been supported by the coach. The lead researcher used these insights to inform and refine interview questions. The following are examples of questions that were asked in the first semi-structured interview:

- What are your general feelings towards coaching?
- What are your general feelings towards blended learning?
- Tell me about any coaching you have received to support your implementation of blended teaching strategies?
- You recently completed the district’s Blended Teaching to Personalize professional development course. Can you tell me about the coaching that you received while you worked through that course?

Following the first interview, the lead researcher reviewed the interview transcript and the participant’s unit planner and self-reflection for a second time to understand how each participant experienced coaching. The second interview focused on excerpts from the documents and specific quotes from the first interview in an attempt to gain a richer understanding of the coaching experience. The following are examples of questions that were asked in the second semi-structured interview:

- You said that you were intimidated by blended teaching at first and that COVID kind of forced you into it. How did ANY coaching help you overcome this?
- You mentioned that [coach’s name] “stretches you a little bit” and also that she doesn’t overwhelm you. What does this type of balanced coaching look like?
- Can you tell me about a time when a coach helped you reflect on your blended unit implementation?
Data Analysis

Data was analyzed following IPA methods (Smith & Osborne, 2003) supported by Google Sheets. The researcher began by analyzing documents and interviews from each participant before moving on to another. This process began with the researcher reviewing the documents and annotating interview transcripts at least twice before beginning to assign themes. During this process the researcher became familiar with the transcripts while adding annotations in a column to the left of the transcript about significant sections of the interview and documents that provided insights into participants’ coaching experience. These insights included summaries, connections, discrepancies, word choice, apparent demeanor, and early interpretations. Next, the researcher returned to the beginning of the transcript and captured the initial annotations into concise descriptive words, or themes, in a column to the left of the transcript. Then the researcher focused on the emergent themes to find connections and patterns. This resulted in groupings of similar themes that were categorized into a broad theme assigned to each grouping. Next, the researcher compared the resulting themes and subthemes to the text, ensuring that the resulting theme structure accurately represents the original transcripts. Once agreement was established, the researcher formalized a list of themes and subthemes.

The researcher then proceeded to analyze additional interviews, following the same process outlined for the first with the prior theme structures informing the analysis of the following interview transcripts while remaining open to the possibility of newly emerging themes. Once the researcher reviewed and analyzed all of the participants’ interviews, they reviewed the themes, subthemes, and related quotes to focus on the areas that best answered the research questions. In the event that a selected theme emerged late in the process, the researcher again reviewed prior transcripts to find other supporting data.
Quality Standards

To ensure quality research we addressed matters of commitment, rigor, transparency, and coherence in our research plan (Yardley, 2000). Commitment was established through extensive experience in the areas of coaching, BT, and IPA research collectively among researchers and advisors of this study. The lead researcher has worked as an educator for nine years, including four as an instructional coach. The semi-structured interview protocol was developed with input from three experienced BT researchers with over 30 years of cumulative experience in blended teaching. The research and analysis design was tested with a trial participant and then reviewed by an experienced phenomenological researcher and an emerging peer before applying the research design to the selected participants. The lead researcher implemented the research plan with the four selected participants. Rigor was established by using an adequate sample of participants from a variety of subject areas and grade levels. Yardley (2000) describes an adequate sample as one that will “supply all of the information needed for a comprehensive analysis” ideally addressing “the variation and complexity observed” (p. 221–222). Two participants were elementary teachers and two were secondary teachers from different content areas. Transparency was ensured by maintaining an audit trail that documents research and analysis decisions. This audit trail is available for other researchers to validate the findings and conclusions. Member checking was accomplished by allowing each participant to review and corroborate the findings and conclusions from their interviews and artifacts. Coherence was established by carefully selecting the qualitative research method that best addressed the research questions with input from four experienced qualitative researchers. This method was carefully followed as described in the data collection and data analysis section of this paper (Smith &
We also performed negative case analysis (Lincoln & Guba, 1985) by reviewing all participant interviews, looking for evidence that may be in conflict with the emerging themes.

**Ethical Considerations**

Research participants completed a consent form and received a small stipend for their participation. Approval for this research was granted through the associated university’s Institutional Review Board.

Though the experiences and positions of researchers can aid in interpretations of qualitative research, it is important to consider these positions and experience in the study plan and acknowledge the possibility of influencing participants’ responses and the resulting analysis (Yardley, 2000). The lead researcher is employed as an Innovative Learning Coach in the district being studied and all researchers have participated in studies about blended teaching. As such, the lead researcher was careful to balance a desire to cast a positive light on coaching and blended teaching with the importance of genuinely capturing participants’ coaching experiences. All researchers were open to new or adjusted understanding of effective blended teaching and coaching practices while participating in analysis.

**Findings**

Our analysis of our participants’ coaching experiences resulted in two main themes: *Coaching Actions that Support Blended Teaching Practices* and *Coaching Actions that Support Teacher/Coach Partnerships*. *Coaching Actions that Support Blended Teaching Practices* describes the actions coaches took to support the teachers’ implementation of BT practices. These actions were brainstorming, instructional design, training, technical support, observation, co-teaching, check in, data analysis, provide feedback, and iterate. We organized these themes according to when they occurred during the teachers’ instructional cycle—Planning,
Implementation, and Reflection. *Coaching Actions that Support Teacher/Coach Partnerships* describes the actions the coach took that led to the teachers’ willingness to partner with their coach to plan, implement, and reflect on BT practices. The conditions we identified were Conveys Credibility Through Knowledge and Experience, Treats Teachers as Equals, Communicates in a Positive Non-Judgmental Way, Is Readily Available to Provide Support, and Cooperates With Other Teaching Supports. (See Figure 1). In the following sections, we will provide a brief vignette describing each participant’s experience, highlighting the coaching support they received during each phase of blended teaching instruction. This will be followed by a description of each of the coaching actions we identified that support teacher/coach partnerships with supporting evidence from our participants’ coaching experiences.
Figure 1

Thematic Map of Coaching Actions
Coaching Actions That Support Blended Teaching Practices

This section will share essential elements of the coaching teachers experienced to support their implementation of BT practices. Most of this occurred while they worked through requirements to complete a district BT PD course. However, we also include experiences that happened prior to or following participation in the BT PD that teachers viewed as important to their implementation of BT practices.

Examples of each of the coaching support practices were found in all four interviews with the exception of three: technical support, co-teaching, and data analysis. Amy did not mention receiving technical support during implementation of BT practices. This is likely because she did not describe any having issues with technology while implementing her blended unit. Her biggest technical challenge was related to a lack of clarity regarding how students submitted their assignments and was addressed with her coach during her reflection. Jessica did not mention co-teaching because her coach did not engage in any student instruction during her blended unit and limited his in-class involvement to observation. Maria did not mention reviewing any data with her coach because she felt that this was something that was more appropriate to address with a different coach in her building.

Jessica—Jr. High School English Language Development Teacher

Jessica teaches 7th, 8th, and 9th grade English Language Development (ELD) students every other day. She has recently returned to teaching after a 21-year break. She is excited about all of the new educational technology that has become available but is also a little overwhelmed with learning how to use the tools and implementing them in ways that benefit her students. Jessica learned how to put content on Canvas, a learning management system, to support student learning during the remote instruction resulting from the Covid-19 pandemic. She also uses
LANGUAGE! Live, a personalized language learning software, for about 15 minutes during most class periods.

Tony recently replaced a prior coach that Jessica felt was easily frustrated by her “old brain” and less approachable or available. She knew of Tony from publications he regularly posted in the restroom with tech tips and emails that included information about how he can be contacted and scheduled. She had reached out for help to troubleshoot issues with technology such as a projector that wasn’t working correctly just before the start of the school day.

**Planning.** When Jessica began collaborating with Tony to work through the district’s Blended Teaching to Personalize course, she wasn’t sure how to apply what she had learned. While planning the unit, Tony encouraged her to “choose any lesson.” Jessica decided to work with him to blend a coming Christmas-themed lesson. As they brainstormed strategies for this lesson, Jessica lamented that her students were getting tired of the gamified tool she had been using to review vocabulary. Tony recommended a new tool, GimKit, for part of her blended unit. In a later meeting, Tony provided “just the right amount of exposure” to the new tool and then encouraged Jessica to finish building the game on her own. She thought she would need more help but was pleasantly surprised that she was able to make the first game on her own.

**Implementation.** When Jessica began implementing the unit, Tony came to her class to observe and troubleshoot any issues. Jessica said, “I don't like being observed, but I wasn't as intimidated about him coming to observe as I am when administrators come.” While continuing to implement BT strategies, Tony showed Jessica how to find data in GimKit. She also learned how to find data in LANGUAGE! Live from one of their trainers. She uses the formative data generated from regular use of both tools to decide when to go on to the next unit and to identify students that need extra encouragement to remain engaged.
Reflection. Following her implementation of the blended unit, Jessica and Tony met to reflect on how things went. Jessica shared that when she reflects with Tony he critiques “in a good way so that I don't feel like I’m a loser.” After their work on this blended unit concluded, Tony continued to check in and Jessica reached out for help when she needed it.

Kim—2nd Grade Teacher

Kim is a second-grade teacher with 18 years of teaching experience that also includes kindergarten and first grade. She began teaching in the late 1980s, took a break to raise her own children, and then returned in 2007. While reflecting on the loneliness and confusion of her first few years teaching, Kim expressed gratitude for coaching and the support and encouragement she receives from her coach, Brenda. She commented, “[Brenda is] invaluable” because “I knew nothing coming back after so many years.” If I hadn't had a coach, I don't think I would have done any [blended teaching].” “This feels much more like I have someone that's got my back, someone to bounce ideas off of, to offer suggestions in a constructive way. She doesn't criticize me at all.” Often Kim reaches out to her coach to know more following a “Learning in the Loo” publication, a “Tech Tuesday” email, or an after-school training.

Planning. Kim and Pam, a teacher on Kim’s grade level team, knew Brenda well and had collaborated often before the three of them began designing a blended unit while working through the district’s Blended Teaching course. They choose to focus their efforts on their “silent E” reading unit. As they began, Kim and Pam shared what students should be able to do at the end of the unit. They, “ran ideas past her and she helped us work out the kinks.” Brenda offered some ideas of activities students could do and tools they could use to learn the standard, encouraging them to choose activities and tools that would lead to creative student interactions with technology. For example, Brenda recommended Kim’s students make videos that included
pictures of “silent e” words with their voices pronouncing them instead of a simple matching activity Kim originally suggested.

**Implementation.** As part of their blended unit, Kim and Pam used BT strategies to differentiate instructions for their students and to “clone themselves” so that they could have more time to meet with small groups. Students also created AdobeSpark videos using words that have the “silent E”. Brenda came into Kim and Pam’s classes to teach the students how to use AdobeSpark including how to find pictures and record their voices in the video.

**Reflection.** Following their implementation of the unit, Kim and Pam met with Brenda to reflect on what went well, what they would change for next time, and how they might implement blended teaching strategies in other units and contents. Moving forward, Kim and Pam included a new teacher that was hired mid-year as they continued to work with Brenda to learn and implement new tools that appropriately help their students reach learning standards within their content. Kim shared that she feels “like my teaching has improved immensely. I'm reaching kids on different levels. I'm able to differentiate my instruction and I don't feel overwhelmed at all. I feel very proud of us.” Her only wish is that she had more access to her coach that is shared among three schools.

*Amy—5th Grade Accelerated Learning Teacher*

Amy has 18 years of teaching experience. Her current students have tested into an advanced program, but they still have a large variety of skill levels. Amy appreciates the “tech tip” emails Lisa, her coach, sends out regularly and has worked with her to evaluate data. Amy is constantly working to improve her teaching and understands that working with a coach can help her do this. She believes that technology should be used in a smart way to enhance what is
already going on in the classroom rather than, “Oh we've got this technology. Let's find some way to use it.”

**Planning.** Amy chose to focus her work on the district’s blended teaching course on writing instruction, with a goal to do a better job providing student feedback through online comments on student assignments and make time for in-person conferencing. As she approached Lisa with this goal, they reviewed Amy’s plans and the online materials she had prepared. Amy consulted her grade-level team and Lisa about where to find instructional resources for this unit. Lisa reminded her that she had already made instructional videos during the prior year and that her writing program also had some instructional videos and digital tools she could use. Lisa encouraged Amy to utilize these tools rather than “reinventing the wheel.” When Amy asked Lisa for an idea to organize the videos and resources she provided students, she recommended Padlet.

**Implementation.** Lisa was in the classroom when Amy first kicked off her writing unit to help students with the technology and troubleshoot any glitches. The format of Amy’s unit allowed some of her students to work ahead and informed small group instruction for her students that needed extra support.

**Reflection.** At the conclusion of her writing unit, Amy met with Lisa to celebrate Amy’s success and improve the unit for another essay. Amy brought student feedback that she solicited from her students. Amy realized that she was giving her students too much feedback in her online comments and that she needed to focus on just a few writing strategies for each submission. She also shared that she was frustrated that her students were often submitting the wrong assignments in Google Classroom. Lisa and Amy worked together to create a routine to ensure the students submitted their assignments correctly. With clearer instructions, the second
essay went much better. Lisa has checked in during Amy’s second attempt with this unit, but they are not working as closely together. Amy shared that if she didn’t have Lisa’s support she probably wouldn’t be able to implement BT strategies because learning how to use and implement the tools “would just be a lot more cumbersome and time consuming.” Amy has shared what she has done with her grade level team and looks forward to working with Lisa again to apply some other BT strategies to other content areas and learn about new tools that will meet her instructional needs.

Maria—High School English Language Arts Special Education Teacher

Maria is a High School English Language Arts Special Education teacher with seven years of experience. She is very confident in her technical abilities acquired through prior PD opportunities, work with her collaborative team, and independent research. Sara has worked with Maria’s collaborative team and introduced her to several tools through regular “tech tip” emails. Maria appreciates that Sara responds quickly to emails and is glad that she is there so that “if I have a problem or a question, I have somebody that I can go to and get help.”

Planning. When Maria and Sara began working together, Maria had already outlined the blended unit she was planning to implement. Maria wanted her students to be able to work independently so that she could hold individual writing conferences. While reviewing her plans with Sara, Maria discussed a concern she had with motivating students to stay on task while working independently at their own pace through the unit. While brainstorming possible solutions together, Sara suggested using Canvas Studio to embed questions through the instructional videos to help students stay engaged and Blocksi to monitor students' chromebooks to confirm they were not straying from the instructional tasks assigned. Maria and Sara also discussed an idea that had been introduced in the PD course, offering students a choice in how
they demonstrate proficiency. Following this discussion, Maria chose to include a Google Slide presentation, a digital book, a narrative story, and an AdobeSpark video as assessment options in addition to a typical writing sample.

**Implementation.** When Maria kicked off her blended punctuation unit, Sara was in her class observing Maria’s introduction of the hyperdocs students would work through. Once the students began working, Sara was there to help Maria answer students’ questions and address any technical issues. Shortly after that first classroom visit, Maria and Sara met. During this visit Sara offered “really positive feedback” that led Maria to “feel really good about what I was doing in my classroom.” Sara also suggested Maria abandon a complicated form that Maria didn’t feel was contributing to her students’ learning. In a later visit Maria shared that the students were struggling to work independently through a Nearpod activity due to their lower reading levels. Sara suggested adding voice recordings to the activity so that students could have reading support and showed Maria how to do this.

**Reflection.** Following Maria’s implementation of her blended unit she met with Sara to reflect on how it went. Sara shared that there were sections students really struggled with because they were too long. Sara suggested breaking the sections up into smaller sections and together they explored the idea of spreading the unit throughout the year next time. Maria is applying things she learned during the coaching supported PD in other units and looks forward to adjusting the blended unit and using it again next year.

**Coaching Actions That Support Teacher/Coach Partnerships**

Our participants described coaching that led to their willingness to work with their coach. Their coaches conveyed credibility through their knowledge and experience, treated them as
equals, communicated in a positive, non-judgmental way, were readily available to provide support, and cooperated with other teaching supports.

**Conveys Credibility Through Knowledge and Experience**

All of our participants believed that their coach was credible as a result of their technical knowledge. Two of our four participants also attributed their coach’s credibility to their teaching experience. Kim shared that Brenda is “extremely knowledgeable and can fix just about anything I’ve thrown at her.” Jessica appreciates Tony’s knowledge and his ability to get knowledge. “I really love that if he doesn't know something he finds out.” Amy told us that, because of Lisa’s teaching experience, “she just knows how to talk with students” and she is comfortable coming into Amy’s classroom and “jumping right into whatever.” Kim explained that even though Brenda did not teach second grade, because of her teaching experience she still understands what second graders might like and is able to share things she tried and recommend some things to avoid that did not go very well with her students. Kim also appreciated that when Brenda worked with her students, “she has good control of the class, and she models how I can get them engaged . . . It just feels very comfortable with her in there.” The credibility that these coaches have in the eyes of the teachers they work with results in their willingness to seek them out for BT ideas, troubleshooting, and reflection. It also contributes to their willingness to have them in their classrooms to observe their teaching and work with their students.

**Treats Teachers as Equals**

The teachers we interviewed were treated as equals by their coaches and didn’t view them as superiors but as collaborative friends. They trusted their coaches to keep confidences and believed their coaches respected their professional judgment and experience. Jessica shared that she has a “good report with Tony” and that “he is always smiling.” When she works with
him, she “feels like an equal” despite his “elevated ability.” Jessica appreciates that Tony doesn’t confuse her with technical jargon. “He gets to my level, then teaches me from there . . . he's just really down to earth.” She also knows that when she works with Tony, he is “going to keep a confidence if I complain about something.” Amy shared that she works with Lisa because she wants to improve so her suggestions feel helpful and not condescending. Amy believes that Lisa, “is open as well to me suggesting things and asking questions so it's a collaboration where we work together to brainstorm ideas.” Kim described how Brenda made her feel like they were a team because she will “sit at my table and we'll pull up our computers and I'll show her what I'm wanting to do and she'll help me create it.” When Brenda gives Kim ideas, she leaves it up to Kim to decide if she is going to use them or not. Brenda has even told Kim that, “just because my title is different doesn't mean I know more than you.” Kim went on to say that Brenda is “a safe place” and “just one of us. She's in the trenches with us.” Kim shared that she and Brenda, “have become really good friends.” Maria shared that Sara is “just super friendly, and always willing to answer any questions she has. She may even say, ‘oh that's a really good question.’” The relationships of equality our participants described led to their willingness to seek help and support from their coaches.

**Communicates in a Positive Non-Judgmental Way**

Our participants felt positive support and encouragement from their coaches. None of them described any critical interactions. Kim’s coach Brenda worked with her in a positive, non-critical way:

She is not there to tell me what I'm doing wrong or to tell me, “you need to do this better.”. She's just there to offer support, to bounce ideas off of, to help me gather resources that will benefit my students.
Kim went on to describe how Brenda helped her make realistic progress without getting overwhelmed:

I was worried about just being overwhelmed, that it was going to be too much with everything else that we’re required to do . . . She showed how easy it really was and just kind of broke it down . . . helped me see it in a more realistic way. Instead of trying to make videos for the whole year, just one week at a time. Now we've got a whole year's worth of lessons that we either repost or tweak.

As the two reflected on the work they had done, Brenda told Kim, “You know a lot more than you think you do.” and encouraged her to “be proud of yourself!” Reminding her of how far she had come, Brenda told Kim, “A year ago you weren't even trying anything like this.” Amy described her coach’s supportive approach when she said:

Sara is a very bubbly, positive, energetic person. I don't know how anybody could work with her and feel like she was forcing something on them. Her approach is to say, “Hey, how can I help? I noticed this. What can I do? Here's maybe some ideas.”

Jessica described how Tony helps her to feel better when she is frustrated. “If I say, ‘I'm so dumb!’ he’ll say, ‘No, no, no, this is the way it is when you haven't done something before.’” Tony encouraged Jessica to, “Just keep working on it a little bit at a time.” Maria shared that the recognition and excitement she felt from Sara was rewarding after a lot of hard work and made her feel really good about what she was doing in her classroom. “When she came into my classroom, there was a lot of really positive feedback, as far as what was going on with the kids being engaged and being able to conference with kids.” As they reflected together about one particular challenge, Maria could tell that Sara cared. They explored what could be done
differently next time. “It felt like she wanted to help me, not necessarily that she would find the solution, but she wanted me to be able to figure it out.”

**Is Readily Available to Provide Support**

All of our participants shared that their coaches were available to support them as a result of their easy access, quick responses, and regular communication. Coaches let teachers know where they will be each day and teachers can easily make appointments with them through an online scheduler. Amy said, “I can request her to come in at a certain time to work on a certain thing with my students. She's got an online scheduler that we can schedule anytime we want?”

Amy’s coach Lisa even sent out a list of ways she could support teachers with a survey for teachers to complete and then responded to their needs. “She is always ready to jump into anything . . . and find ways to help you.” Our participants have also been able to get urgent, last-minute help through email, chat, or in person. Jessica said that this was, “a lifesaver for me.”

Maria shared that Sara’s availability to help quickly is “a relief.” “It's great because some things I'm great at figuring out on my own, but if I can't, it's nice to know that she's there and she's actually super willing. You don't feel dumb for asking.” Kim shared that sometimes Brenda replies so quickly after sending a chat that she is “in my room before I can even check to see if she's replied.” Jessica’s coach Tony has even met with her virtually when he was working at a different school. Amy and Jessica shared that their coach will frequently stop by just to check in.

All of our participants shared that their coaches communicate school wide regularly. Jessica and Kim’s coach post a publication with tech tips in all of the faculty restrooms. Maria, Amy, and Kim’s coach send regular emails. Kim’s coach calls them “Tech Tip Tuesday.” Amy shared that these emails “spark my curiosity to where I will go out and get more information. If it's something that I would need her help with I feel totally comfortable just asking.” The availability
that our participants described facilitate coaching that supports blended teaching. This is important because technical classroom obstacles need to be addressed quickly so that the tools support learning rather than hinder it.

**Cooperates With Other Teaching Supports**

Our participants described other factors that influenced their implementation of blended teaching strategies including their collaborative teams and other PD opportunities. Their coaches were aware of these other influences and cooperated with them. Kim worked with Pam, a member of her grade level collaborative team, to complete the district BT PD. When asked what it is like to work with Pam and Brenda, she said, “We each contribute something that's positive. We're able to brainstorm together and really look at it from different angles.” Amy’s coach, Lisa, attended some meetings with her collaborative team. Amy also worked with her team to “make sure we were on the same page,” find resources, “bounce ideas off of them.” and share what she had done following implementation. Maria’s collaborative team have all worked together with her coach, Sara, on several occasions. Maria shared how this process typically proceeds.

Lots of times it's been the result of trying to figure out something that's more engaging for students. We don't want to just do another worksheet to try and learn this concept. We want to be able to give students more of a hands-on experience. If it's something that we think we could use technology for, we go to Sara with that . . . “Let's do this travel brochure. Let's use LucidSpark.” And then lots of times if we're like, “How do we do this?” Then we would go to Sara.

Maria has also benefited from support from another “techie” member of her collaborative team and district PD opportunities. “That type of hands-on experience professional development has been really good for learning how to use the elements that we would use in blended teaching.”
Maria added that what she learns from her collaborative team and district PD allows her to have more background when she begins working with Sara. Jessica received support from a representative of LANGUAGE! Live, the personalized software she uses with her ELD students. “She reassured me that I was doing some things correctly and then told me about reviewing their audios.” Later, when Tony observed Jessica’s classrooms, he complimented her on her use of a station model to accommodate student work time in LANGUAGE! Live and told her that this was a great way to break things up and help an otherwise rowdy group behave better. As our participants’ coaches worked cooperatively with district PD opportunities and collaborative teams, teachers didn’t need to worry about advice or direction that conflicted with what they had learned in district PD or their collaborative teams’ plans.

**Discussion**

Coaching to support BT is unique when compared to general instructional coaching in several ways. Because of the reliance on technology, these coaches must be easily and quickly available and willing to support teachers’ during select points in their instructional cycle or throughout the entire process. Since teachers will likely be reconsidering their role in the learning process, coaches must be prepared to have challenging, sometimes emotional conversations addressing this shift. Also, it is important that coaches supporting BT collaborate with an attitude of equality and respect of the teachers’ content and grade level-specific experience, since it is likely different from their own.

Our findings indicate that it is important that coaches who support BT are easily and quickly available. A need for this level of availability may be unique to this type of coaching because BT is dependent on technology that is sometimes unpredictable or challenging for teachers and students. Kim mentioned that the availability of her coach gave her the confidence
to try new tools and teaching strategies. Riel et al.’s (2016) finding that the most frequent technology concern of blended teachers in their study was that the technology would not function correctly supports our suggestion that coaches supporting BT must be easily available. Ertmer (1999) concluded that a lack of support was a barrier to effective technology integration that could be overcome by “on-demand help when problems occur” and that teachers should be given “enough knowledge and support to confidently continue to explore on their own, but with assured backup when troubles arise” (p. 54). All of our participants believed that their coach’s technical knowledge was important and led to their credibility. A coach that is familiar with the technical tools is in a good position to support students and teachers that are using a technology tool for the first time and to troubleshoot when issues arise. For this reason, it may be wise to grant coaches that support BT administrative access to the technical tools used in BT.

Because of the requirements of the district PD course, our participants worked with their coach through an entire instructional cycle—planning, implementation, and reflection. However, they also mentioned other times when they received support on just select portions of their instructional cycles. This need for limited involvement during the instructional cycle may be unique to coaching to support blended teaching. For example, Amy worked with her coach, Lisa, to improve her blended unit and then implemented it a second time. During that second instructional cycle, Amy did not need very much support during implementation; her coach just checked in occasionally. Maria mentioned that she tried tools she was introduced to through her coach, Sara’s, tech tip emails and only needed Sara to answer a few questions, and then enjoyed doing her own research and was able to implement tools independently.

In this situation, Maria’s coach was only involved briefly during the planning phase of Maria’s instructional cycle. We suggest other examples of how this limited involvement might
look. A teacher might brainstorm with a coach ideas of how an online element might enhance a coming unit but is experienced with the selected tool, confident with how it will be implemented, and reflects with a collaborative team regarding its effectiveness. A teacher might run into an obstacle with the technology, need only training or troubleshooting, but planned the unit and reflected following implementation independently or with a collaborative team. A teacher might have a coaching conversation about reimagining their role in the learning process and then run with that idea independently or continue to explore it with a collaborative team. It is important that coaches nurture relationships with teachers through the coaching actions described in our second global theme, *Coaching Actions that Support Teacher/Coach Partnerships*, so that teachers feel comfortable reaching out to them when they are interested in coaching support for only a piece of their instructional cycle.

While it is important for coaches to follow up and check in with teachers they have worked with, insisting all interactions should be part of or lead to a coach’s involvement in the entire instructional cycle could deter teachers from asking for the support they need to successfully blend their instruction. For this reason, we recommend coaches offer a menu of options rather than descriptions of an entire coaching cycle as Amy described her coach, Lisa, doing when she sent teachers a survey with a list of ways she could support them.

Our study found that as coaches supported teachers’ brainstorming and instructional design during their BT planning, they were in a position to address an important pedagogical shift by encouraging teachers to plan activities that require students to use the technology in creative ways and shift their teaching style to one in which they facilitate learning rather than disseminate knowledge. We saw this when Kim’s coach, Brenda, encouraged her to have her
second-grade students create videos where they added pictures and their voices pronouncing words with a “silent e” instead of the matching activity Kim was originally planning.

We also saw this when Maria’s coach, Sara, supported her shift to allowing students to work independently through learning activities while she conferenced individually with students. Darling-Hammond et al. (2014) confirmed the importance of encouraging students to use technology to explore, create, and interact with content and peers rather than simply acting as consumers of technology in more passive ways (as cited in Ehsanipour & Gomez Zaccarelli, 2017). Ertmer (1999) recognized that implementing learning activities in which students use technology as creators and explorers rather than consumers requires a shift in mindset that requires teachers to “confront fundamental beliefs about current practice, thus leading to new goals, structures, or roles” (p. 48). Ertmer et al. (2012) recommended teachers be directly supported in this shift as our participants have described their coaches doing.

Because this shift in a teacher’s professional identity can be a challenging and even emotional process, our findings that participants appreciated a relationship of equality that is based on friendship, trust, and respect and their coach’s positive approach that included support and encouragement are notable. This is supported by Knight’s (2022) coaching partnership principles outlined previously that suggest that equality, choice, voice, dialogue, reflection, praxis, and reciprocity are important to successful coaching conversations.

We found that a relationship of equality in which the coach respects the teacher’s expertise led to a successful coaching partnership as coaches encouraged our participants to take the lead in defining the learning goals and the role technology played in reaching those learning goals. Several of our participants also mentioned their work with a collaborative team and their coach’s involvement or consideration of this. This respectful approach can meet a challenge
noted by Ehsanipour and Gomez Zaccarelli (2017) that coaches that support technology use in education have experience that is likely different from the specific content or grade level of the teacher they are coaching. Since technology should play a supporting role to the content or grade level specific learning goals, Dinse de Salas et al. (2016) suggested coaches and teachers work collaboratively (as cited in Ehsanipour & Gomez Zaccarelli, 2017), much like our participants described. Again, Knight’s (2022) partnership principles support this approach.

**Implications for Practice**

In light of Ertmer et al.’s (2012) argument that “little will be gained if second-order barriers (knowledge and skills, attitudes and beliefs) are not addressed” (p. 432) and evidence in this research that coaching to support BT is a powerful strategy to address such second order barriers, we recommend that educational organizations include coaching as one tool to support the implementation of BT strategies. Furthermore, we recommend that this coaching should work in cooperation and alignment with other improvement efforts such as content specific PD and collaborative teams. James et al.’s (2011) research supported this recommendation when they found that when combined with professional learning communities, coaching was an important element of PD efforts aimed at effective technology implementation (as cited in Ehsanipour & Gomez Zaccarelli, 2017). We also emphasize the importance of a vision clearly articulated by administration to focus coaching efforts. Ertmer (1999) expressed the importance of such a vision when she said:

> A vision gives us a place to start, a goal to reach for, as well as a guidepost along the way. Although we are likely to make adjustments in our vision over time, a shared vision offers a vehicle for coherent communication among all stakeholders (teachers, parents, students, administrators, community leaders, business partners). Thus, when new issues,
problems, or opportunities arise, our vision keeps us focused on what is central to our technology efforts.

We also recommend that administrators provide opportunities for coaches to participate in PD to understand the importance of and their part in helping teachers reevaluate their role in the learning process and strategies to work cooperatively with other teaching supports such as separate PD opportunities and collaborative teams. The University of Florida Lastinger Center for Learning, Learning Forward, and Public Impact (2016) also recommended coaches engage in PD supported by their organization (as cited in Ehsanipour & Gomez Zaccarelli, 2017).

**Implications for Research**

While this research sought to understand the coaching experience of teachers that claimed to be new to BT, practitioners could benefit from further research to explore how teachers that claim to be experienced with BT experience coaching support in terms of their needs and perceived change in instructional practice and beliefs. This aligns with Riel et al.’s (2016) suggestion to investigate the differences in reported challenges among new and experienced blended teachers. Furthermore, since research that evaluates the effect of BT on student achievement and research that evaluates the effect of coaching on instructional practice and student achievement is lacking and conflicting (Barbour, 2017; Ehsanipour & Gomez Zaccarelli, 2017) research on the effect of coaching that supports BT could lend to this body of research. However, research evaluating any practice on student performance is challenging due to the complexity of educational systems (Jacobson et al., 2019). Additionally, this research occurred in a small geographical region of the United States. Research on the coaching experiences of teachers from a broader area, including international research would be beneficial since there is a
lack of BT research outside of the United States and BT often looks different internationally (Barbour, 2018).

**Conclusion**

This study sought to identify coaching practices for supporting BT by studying coaching experiences from the perspective of teachers new to BT. Teachers who were interviewed talked about the actions of their coaches that were meaningful to them. From these interviews, we identified several coaching actions that support blended teaching practices and teacher/coach partnerships. These include:

- brainstorming, instructional design, and training while teachers plan units aimed at specific learning outcomes
- technical support, observation, co-teaching, check-ins, and data analysis while teachers implement instruction
- providing feedback to and iterating with teachers when they reflect on their unit
- conveying credibility through knowledge and experience
- treating teachers as equals
- communicating in a positive way
- being available to provide support, and
- cooperating with other teaching supports.

We recommend educational leaders include and support coaching that supports BT as one strategy in an organization to improve student learning outcomes and support coach alignment with a clearly articulated vision and existing teacher supports including other PD opportunities and collaborative teams. Future research could explore coaching support for experienced blended teachers, the effect of coaching to support BT on teachers’ practice and beliefs and student
outcomes, and coaching experiences outside of the United States. We believe that coaching to support BT can be one way to answer the call from the National Staff Development Council for educators, “to engage in learning the way other professionals do—continually, collaboratively, and on the job—to address common problems and crucial challenges where they work” (as quoted in Ertmer et al., 2012, p. 434).
References


APPENDIX A

Exploring Secondary Blended Teachers’ Decisions and the Motivation Behind Them: A Systematic Literature Review

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Abstract

This literature review investigated the decision-making of secondary blended teachers and the motivation behind such decisions. Blended teachers make a variety of decisions which we chose to classify using the four blended teaching competencies put forth by Graham et al. (2019). Findings include decisions within all four teaching competencies—online integration, data practices, personalization, and online interactions, with the majority of reviewed articles including online integration decisions. Professional development and theoretical frameworks motivated these blended teaching decisions. Model-focused frameworks, such as “Blended Teaching” and “Flipped Classroom,” were the most common theoretical frameworks identified as motivating blended teaching decisions with instructional design frameworks, learning theory frameworks, and one content-specific framework also informing blended teaching decisions. Through reviewing teachers’ decision-making practices and motivations within current research, we began to understand where to position blended teaching support for practicing teachers.

Keywords: blended learning, secondary education, decision-making, professional development, theoretical framework
Introduction

Blended learning, a combination of face-to-face and online instruction (Graham, 2021), is expanding at an exponential rate (Barbour, 2017). This growth was likely catalyzed by the COVID-19 pandemic, which forced additional students and teachers to experience remote and blended learning. A 2021 NPR/Ipsos poll found that 67% of respondents’ children were attending school in an online or blended format (Kamenetz & Uzunlar, 2021). This same poll found that 29% of parents planned to continue some form of remote learning in the future. However, most blended teaching (BT) research addresses the practice in general, K12, or higher education contexts (Moskal & Picciano, 2021) despite important differences in implementation in a secondary context (Barbour, 2018). These differences are apparent in the separation of teacher certification requirements and undergraduate courses that support online and blended teaching for elementary and secondary preservice teachers. Some districts even differentiate the learning tools that are available and recommended for BT by elementary and secondary levels (“Supported Solutions,” n.d.).

Though the increase in BT within secondary classrooms is a welcome change for many, this increase brings with it the need for effective professional development (PD). A recent report from The Learning Policy institute listed “strengthen distance and blended learning” as the second of 10 priorities for educators and policymakers to address as they move forward following the COVID-19 pandemic (Darling-Hammond et al., 2020). This report also emphasized the importance of quality PD for educators as they work to develop effective blended learning experiences for their students. It is imperative that PD supports an effective combination of in-person and online learning as educators combine the new technical skills they
were compelled to develop during emergency remote teaching with the teaching practices they were comfortable with before the pandemic.

For PD to support effective BT practices in secondary schools, teacher educators must know what skills or competencies are necessary for teachers to effectively teach in a blended learning environment (Graham, Borup, Pulham, & Larsen, 2019), what decisions blended teachers face within each of these competencies, and where blended teachers are turning for answers. With this understanding, teacher educators will be more prepared to offer support and guidance that improves student learning in a blended format. Graham, Borup, Short, and Archambault (2019) identified four essential competencies that lead to effective blended teaching: online integration, data practices, personalization, and online interaction. However, there is a lack of understanding around the decisions that teachers are making within these competencies and what informs those decisions. As teacher educators understand where blended teachers are turning for answers, they will be more prepared to offer support and guidance that improves student learning.

**Problem Statement**

The increased complexity of BT leads to additional decisions for teachers (Graham, Borup, Short, & Archambault, 2019). This literature review seeks to evaluate those decisions within the lens of the blended teaching competencies and to identify the motivation(s) behind them. To accomplish this purpose, we reviewed the past five years of literature to address the following questions:

1. What decisions are blended teachers making and where do they occur within the blended teaching competencies?
2. What motivates blended teachers' decisions?
Theoretical Foundations

A discussion of decision-making within secondary BT practices necessitates foundational understanding of blended learning and the theoretical framework that identified the BT competencies that lead to effective blended instruction.

Blended Learning

Definition

Blended learning must be accurately defined prior to productive academic conversations on the topic (Barbour, 2017). Blended learning (BL) is defined as a combination of face-to-face and online instruction (Graham, 2019). Researchers have identified several blended models through observing educators throughout the country and expanded the definition of blended learning beyond the physical attributes to include the expectation that blended learning allows students some control over time, place, path, or pace of their learning (Horn et al., 2014). Graham (2021) cautions against this broad definition, asserting that definitions of modality (blended, online, or face-to-face) should be separated from the methods (pedagogical strategies) of instruction so that researchers and practitioners have clarity on what practices are being researched and or advocated for.

Growth of Blended Learning

Due to differing definitions of blended learning among institutions and difficulty documenting educators who implement the practice independently without their institution being aware of it, it is difficult to quantify and verify occurrences of BL (Graham, 2019). However, Graham (2019) included several clear pieces of evidence of this growth including national surveys that reveal an 8.6% increase between 2007 and 2008 in districts claiming they were implementing blended learning. In 2009, this same report found that 98% of K12 blended
learners were secondary students. Schwirzke et al. (2018) attributed this growth to the growing acceptance of the practice, concern over competition from other educational providers, an increase in technology tools and resources, and understanding of blended learning’s potential to improve student learning.

**Blended Learning Competencies**

**Development of the Competencies**

As BL emerged as a common instructional practice, initial PD efforts focused on technology tools (Graham, Borup, Pulham, & Larsen, 2019). However, researchers found that blended learning was more than simply adding technology to traditional teaching (Bjekic et al., 2010). Thus, it is important that educators obtain the skills or “competencies” necessary to successfully engage in this mode of instruction. Though some of these competencies may be a part of traditional or even online teaching methods, some are unique to blended learning and some are implemented differently with this mode of instruction (Pulham et al., 2018).

Researchers have worked to identify these competencies (Akarawang et al., 2015; Bjekic et al., 2010; Pulham & Graham, 2018). Pulham and Graham (2018) narrowed these competencies down to eight practices. This research progressed to produce a validated instrument to measure blended teaching readiness that included 13 competencies (Graham, Borup, Pulham, & Larsen, 2019). As this work continued, Graham, Borup, Short, and Archambault (2019) developed a practitioner resource to explain and support the four competency areas of online integration, data practices, personalization, and online interaction.

**Description of the Competencies**

*K12 Blended Teaching* includes descriptions of all four competencies. Online integration is foundational and unique to blended teaching as blended teaching is the only mode of teaching
that combines two modalities—in-person instruction and online instruction. Strategic integration of these two modalities amplifies student learning. Data practices “is simply storytelling with numbers.” A teacher who is competent in this area can create and track mastery-based assessments that are aligned with learning standards, identify and use student performance patterns to recommend effective learning activities for students, and improve instruction and learning materials. Personalization involves planning learning activities and assessments that allow students to direct their own learning based on their individual interests, abilities, and goals. Though personalization may be guided by the teacher, this practice allows many learning decisions to be made by the student. Effective Online interaction requires a teacher to facilitate effective communication practices between teacher and students and between students and the rest of the class. Teachers who are competent in this practice can create and facilitate synchronous and asynchronous online discussions and engage in an effective feedback cycle (Graham, Borup, Short, & Archambault, 2019).

**Methodology**

**Literature Searching Strategies**

This article seeks to answer the following research questions:

1. What decisions are secondary blended teachers making and where do these decisions occur within the blended teaching competencies?
2. What motivates secondary blended teachers' decisions?

In an effort to accomplish this, we searched the ERIC (Education Resources Information Center) database using the search terms presented in Table 1.
Table 1

*Secondary Blended Learning Decision Making Keywords*

<table>
<thead>
<tr>
<th>Subject</th>
<th>Keywords</th>
</tr>
</thead>
<tbody>
<tr>
<td>AND Blended learning</td>
<td>“Blended learning”</td>
</tr>
<tr>
<td>AND Decision making</td>
<td>“Decision making” OR “Selection criteria” OR “Instructional design” OR “Design” OR “Curriculum design” OR “Instructional development”</td>
</tr>
<tr>
<td>AND Secondary</td>
<td>“Secondary” OR “Secondary education” OR “Grade 7” OR “Grade 8” OR “Grade 9” OR “Grade 10” OR “Grade 11” OR “Grade 12” OR “Secondary school students” OR “Secondary school teachers” OR “High schools” OR “Secondary schools” OR “High school students” OR “Junior high schools” OR “Middle schools” OR “Secondary school curriculum”</td>
</tr>
</tbody>
</table>

We limited the search to include only peer-reviewed journal articles that were published within the last five years. This time frame captured the current decision-making practices of secondary blended teachers that this research sought to understand. The search was most recently performed in March of 2021. This revealed a total of 111 articles. We reviewed these articles to ensure they addressed decision-making within a secondary BL context. Forty-two articles remained (see Table 2). In 24 of those articles, the instruction was designed by the researcher rather than the teacher. We chose to focus on the remaining 18 articles that included instances of teacher decision-making.
Table 2

*Inclusion and Exclusion Criteria*

<table>
<thead>
<tr>
<th>Criterion</th>
<th>Inclusion</th>
<th>Exclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Language</td>
<td>English</td>
<td>Non-English studies</td>
</tr>
<tr>
<td>Type of Article</td>
<td>Peer-reviewed Journal article</td>
<td>Articles that were not peer reviewed, Conference proceedings, Reports</td>
</tr>
<tr>
<td>Literature / Study Focus</td>
<td>Articles relating to teacher decisions in a blended learning environment</td>
<td>Technology integration, online learning, professional development, researcher designed instruction</td>
</tr>
<tr>
<td>Population and Sample</td>
<td>Secondary level students and educators</td>
<td>Elementary education, Higher education</td>
</tr>
</tbody>
</table>

**Data Analysis Methods**

We reviewed each abstract in an effort to answer the research questions. We learned that to identify the decisions teachers were making within the articles and the motivation behind them, the articles needed to be reviewed more completely. During this process, we listed the decisions made in each article and the motivations behind them. We then classified each decision by the blended teaching competency it aligned with. We also listed the motivation behind the decisions in each article and classified them into three categories: professional development, theoretical frameworks, and other.

**Results and Discussion**

As we analyzed our selected research, we found that blended teachers make many teaching decisions unique to this mode of teaching. We categorized these decisions based on the blended teaching competencies. We also found a variety of motivating factors behind these
decisions. Teachers were generally motivated by professional development and theoretical frameworks. However, there were a few exceptions.

**Blended Teaching Decisions**

Our first research question asked, “What decisions are blended teachers making and where do they occur within the blended teaching competencies?” We found that since each of the different BT competencies addresses different skills blended teachers need, each competency introduces a new group of teaching decisions. Thus, we will present these decisions based on the blended teaching competency they address (see table 3).

**Table 3**

*Articles Addressing Each Blended Teaching Competency*

<table>
<thead>
<tr>
<th>Competency</th>
<th>Description per Graham, Borup, Short, and Archambault (2019)</th>
<th>No. of articles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Online integration</td>
<td>The ability to make and implement decisions related to selecting when and how to effectively combine online and in-person learning as part of core instruction.</td>
<td>17</td>
</tr>
<tr>
<td>Data practices</td>
<td>The ability to use digital tools to monitor student activity and performance in order to make informed choices about interventions and help all students progress.</td>
<td>6</td>
</tr>
<tr>
<td>Personalization</td>
<td>The ability to implement a learning environment that allows for student customization of goals, pacing, and/or learning path.</td>
<td>8</td>
</tr>
<tr>
<td>Online interaction</td>
<td>The ability to facilitate online interactions with and between students.</td>
<td>10</td>
</tr>
</tbody>
</table>

**Online Integration**

Teachers made decisions regarding online integration in 94% of the reviewed articles. This is not surprising since online integration is foundational to the instructional design of blended teaching (Graham, Borup, Short, and Archambault, 2019). It was rare for teachers to be
excluded from online integration decisions while still making other decisions. In fact, this only happened in one article. Many of the studies that were eliminated were a result of researchers making all of the decisions, leaving the teachers in the study to merely follow through with their plans.

The most common online integration decisions that teachers made involved what activities to do and whether to do the activities online or in person. These types of decisions occurred in 16 of the studies and were central to the eleven studies involving teachers that used the flipped classroom model. Teachers in these studies provided video instruction for students online and active learning experiences in the classroom. Some of the decisions teachers made were what videos to provide for students, how much total time students should spend in video instruction, and what learning activities to do in class (Al-Harbi & Alshumaimeri, 2016; Karchmer-Klein et al., 2017; Kirmizi & Kömeç, 2019; Lai et al., 2020; Leo & Puzio, 2016; Lo & Hew, 2017; Mohammadi et al., 2019; Moran, 2018; Olakanmi, 2017; Papadakis et al., 2019; Pombo et al., 2016) Eight of the flipped classroom studies used teacher created videos rather than pre-made videos available online.

Teachers in these studies had to decide what information to include in the videos, how long each video should be, and what technology to use to create videos (Kirmizi & Kömeç, 2019; Lai et al., 2020; Leo & Puzio, 2016; Lo & Hew, 2017; Mohammadi et al., 2019; Moran, 2018; Olakanmi, 2017; Papadakis et al., 2019; Pombo et al., 2016) Four studies expanded the student online learning to include a quiz that accompanied the videos. Teachers in these studies had to decide what questions to include in the quizzes (Lai et al., 2020; Leo & Puzio, 2016; Lo & Hew, 2017; Papadakis et al., 2019). One of the studies expanded the online learning activities to include extension opportunities for advanced students.
Teachers in this study had to decide what activities would engage these students and how these students would demonstrate their extended learning (Papadakis et al., 2019). For the teacher in Lo and Hew’s (2017) article, the decision of what to do online and in class wasn’t as simple as providing direct instruction online and active learning in person. This teacher decided that there were some difficult concepts that needed to be taught in person so that he could better understand how well the students were understanding the concept based on their facial expressions and questioning during the presentation.

Several of the articles explored unique adaptations of the traditional flipped classroom model requiring teachers to make additional online integration decisions. Lai et al. (2020) presented and evaluated the effectiveness of “flipped team-based learning” (p. 134). In this study, teachers had the additional responsibility of creating collaborative activities and assessments. This involved deciding which students should work together and how to assess students within a group learning format during in class and online assessment. Song and Kapur (2017) explored a “productive failure-based flipped classroom” where students engaged in productive struggle during in class activities before they viewed the associated videos that presented direct instruction to solidify their learning (p. 1). This approach required teachers to select and develop learning activities that required productive struggle without increasing student frustration to an unproductive level.

Outside of the flipped classroom model, blended teachers also made instructional design decisions regarding use of the in-person and online space (Bingham & Dimandja, 2017; Karchmer-Klein et al., 2017; Lam et al., 2018; Stevens et al., 2018). In Kier and Khalil’s (2018) case study, two middle school teachers partnered with two experienced minority engineers to develop equitable design challenges. In the first case study, students were encouraged to do
online research about water carrying. The teacher also encouraged his students to use the online space to ask the collaborating engineer about her experiences after sharing a video about her work. In the second case study, the online space was used for students to blog about their values and interests and create a class website to share their understanding of how their health is affected by their food choices and how it is related to public health issues. In both case studies, students worked collaboratively during class time to develop solutions to the design challenge and create presentations to share their solutions.

Other online integration decisions included classroom management, homework submission procedures, and the overall blended teaching model to use. At one charter school, College Tech Academy, teachers made classroom management decisions daily about when to give out merits and demerits, the school wide discipline method implemented to make sure students in the personalized blended school stayed on task and used time wisely (Bingham & Dimandja, 2017). Karchmer-Klein et al. (2017) found that the teachers in their study required students to submit work online using apps on their iPads to facilitate assignment collection. In a study from Pombo et al. (2016), teachers were introduced to several blended learning models and then chose which one to implement.

**Data Practices**

Data decisions were the most infrequent type of decision made, occurring in just 33% of the articles. These decisions addressed how to collect data and how to use it. Teachers collected data from online tests, quizzes, and projects (Lo & Hew, 2017; Papadakis et al., 2019), participation data in the school learning management system (Lai et al., 2020), school behavior records (Bingham & Dimandja, 2017), and online discussion comments (Arguedas et al., 2016; Kier & Khalil, 2018). Teachers used this data to inform their instruction and remediation efforts
At College Tech Academy data was often reviewed as a school during weekly evaluation sessions and periodic professional development. Teachers were encouraged to use this data to personalize instruction. The school also used school wide behavioral data to understand the efficacy of their behavioral interventions and ensure that the merit/demerit system they had developed was being consistently implemented (Bingham & Dimandja, 2017). Lai et al. (2020) documented teachers choosing to use online quiz data to understand students’ common misconceptions and address them in class and performance data from a learning management system to ensure students had watched the provided videos. One teacher was provided with data regarding students’ emotional state that was obtained from online discussion posts. The teacher used this data to inform student feedback (Arguedas et al., 2016).

**Personalization**

Teachers made personalization decisions in 44% of the articles. Stevens et al (2018) noted that teachers choose to let go of some control and allow students to “drive a little bit more” by offering student choice (p. 657). The most common personalization decisions involved student control over what learning material to view, when they view it, and how much they review it (Karchmer-Klein et al., 2017; Kirmizi & Kömeç, 2019; Lin et al., 2017; Lo & Hew, 2017). Teachers also chose to allow students choice in the order and pace of their in-class and online activities (Moran, 2018). Another personalization decision teachers made was providing and selecting extension activities for advanced students (Papadakis et al., 2019). The article that focused most on personalization decisions documented College Tech Academy; the foundational aim of this school was to personalize student pace based on student needs and interests. When a teacher chose to teach at this school, they chose to personalize. At this school, teachers made
decisions regarding a minimum level of achievement and how to encourage and ensure all students would meet the minimum level. Most teachers also chose to use class time to encourage students to view and evaluate their own learning data (Bingham & Dimandja, 2017).

**Online Interaction**

Teachers made decisions about how to interact with their students and facilitate student interactions in 56% of the articles. Often this involved facilitating and participating in discussions (Lai et al., 2020; Lin et al., 2017; Mohammadi et al., 2019; Stevens et al., 2018). Some teachers made this decision to elicit participation from students that were hesitant to speak up in class (Stevens et al., 2018) or to provide a collaborative space for students to learn and solve problems collaboratively (Lai et al., 2020; Lin et al., 2017). One teacher encouraged students to comment on the instructional videos and ask teachers questions about topics that were not clear (Al-Harbi & Alshumaimeri, 2016). In Kier and Khalil’s (2018) article a teacher chose to use asynchronous discussion boards and surveys to understand student's interests and values, especially pertaining to social justice issues. Teachers also made online interaction decisions regarding feedback for their students. One teacher chose to offer student feedback online in discussions (Lam et al., 2018). Other teachers chose to offer feedback on assignments and quizzes in the learning management system (Arguedas et al., 2016; Papadakis et al., 2019). In one article, the teacher offered effective and cognitive feedback based on the emotional state of the students (Arguedas et al., 2016). Facilitating peer review was another online interaction decision. In one study teachers facilitated student peer reviews when they chose to have students post creative assignments online for peer review (Karchmer-Klein et al., 2017).
Influences

Our second research question was, “What motivates blended teachers' decisions?” Our review of the literature found a variety of motivations behind the decisions of BL teachers. The two most common sources of motivation in the literature were professional development programs provided by a teacher’s school or district and theoretical frameworks (see Figure A1).

Figure A1

Motivation Behind Blended Teaching Decisions

Professional Development

Teachers’ blended teaching decisions were motivated by PD in 39% of the articles we reviewed (Al-Harbi & Alshumaimeri, 2016; Bingham & Dimandja, 2017; Kier & Khalil, 2018; Papadakis et al., 2019; Pombo et al., 2016; Song & Kapur, 2017; Stevens et al., 2018). In four of these articles, teacher educators intentionally designed their BL courses to model the BL methods they hoped teachers would implement. It was expected that this would encourage
teachers to use similar practices (Kier & Khalil, 2018; Papadakis et al., 2019; Pombo et al., 2016; Stevens et al., 2018). One example was PD that was delivered in a flipped format where teachers worked independently to access multimedia resources and then participated in discussions, reflection, and collaborative work during face-to-face sessions. (Pombo et al., 2016). In another study, some of the learning was delivered through literature and video instruction that was posted online. A participant in this study reported that as a result of participating in the PD in a blended format she gained a more positive view of blended learning (Stevens et al., 2018).

PD also motivated teacher choices by offering tools and support to implement blended teaching practices. One PD course provided participants with a revised lesson plan developed specifically for the flipped classroom model. (Papadakis et al., 2019). Participants in three other programs were supported and influenced by collaborating with other professionals. At College Tech Academy, regular PD sessions supported teachers’ use of data by collaboratively looking at school wide data and adjusting instruction (Bingham & Dimandja, 2017). In Kier and Khalil’s (2018) article, teachers’ blended learning decisions were influenced by a Community of Practice that was established between middle school teachers and practicing minority engineers as they worked together to develop equitable design challenges for students. Teachers in the professional development that Stevens et al. (2018) evaluated reported that feedback from others taking part in professional development with them had the greatest impact in their practice. In this same study, PD facilitators offered support between in-person sessions by responding to online communication in discussion boards and emails and observing and co-teaching participants’ classes.
**Theoretical Frameworks**

All of the articles in our review cited at least one theoretical framework to support blended teaching decisions. However, 50% of them cited “Blended Learning” (Lin et al., 2017) or “Flipped Classroom” (Al-Harbi & Alshumaimeri, 2016; Karchmer-Klein et al., 2017; Kirmizi & Kömeç, 2019; Lai et al., 2020; Mohammadi et al., 2019; Moran, 2018; Olakanmi, 2017; Papadakis et al., 2019) as the only framework that supported teachers’ decisions. Graham (2021) asserts that instructional methods should be described along with the instructional modality and encourages blended teaching decisions based on effective methods rather than just an instructional modality. Nine articles cited theoretical frameworks other than or in addition to “Blended Learning” or “Flipped Classroom.” We classified these theoretical frameworks as instructional design, learning theory, content specific frameworks.

Several instructional design frameworks influenced how teachers formatted their blended courses. The teacher in Lo and Hew’s (2017) article relied heavily on Merrill's (2002) First Principles of Instruction. "The First Principles of Instruction provided a clear guideline for the teacher to design flipped classroom, instead of merely relying on his intuitive beliefs." (p. 9). This article went on to explain how teachers applied Merrill’s First Principles of Instruction as they planned flipped classroom instruction. Student learning was activated by an optional review portion in the pre-class videos and an in-class review of previously learned concepts that were foundational to the active learning portion of the class for all students. The teacher demonstrated concepts through direct instruction in videos that students viewed outside of class. Students applied this learning during online quizzes and then integrated their learning by solving advanced real-world problems. The teachers in Kier and Khalil’s (2018) study based their instructional design decisions on Critical Race Design, a framework previously developed by the
authors (Khalil & Kier, 2017). Teachers choose to connect their content and design challenges to solutions of social justice issues within their students' interests and communities. In Song and Kapur’s (2017) article teachers based their instructional decisions on a model Kapur (2016) called “productive failure-based flipped classroom” (p.1). These design decisions led to a flipped classroom design where students were introduced to new concepts first through struggle and complex problems and then followed this with direct instruction videos that were viewed at home.

Teachers’ blended learning decisions were also influenced by several learning theories. Active Learning informed teachers’ decisions in two of our reviewed articles as teachers repurposed class time to make room for more engaging student learning activities following direct instruction videos that were watched at home (Leo & Puzio, 2016; Pombo et al., 2016). Stevens et al. (2018) noted that Guided Inquiry motivated blended learning teachers’ decision to adopt personalized learning experiences for their students. Teachers at College Tech Academy were motivated by personalized learning to allow students to engage in learning activities that interested them and to work at the pace that they were individually capable of (Bingham & Dimandja, 2017).

Only one study cited a content specific theoretical framework. Lam et al. (2018) studied teachers that offered feedback, facilitated student-to-student feedback, and required student self-assessment based on TASK, an ELA-specific framework designed to improve argumentative writing. TASK addresses thesis, analysis, and synthesis key (TASK) strategies in seven stages. Teachers in this study developed a rubric based on these stages that students used as a scaffold for argumentative writing. They then used TASK as a lens to engage in online discussions designed to provide one another feedback.
**Other Influences**

Teachers noted a few other influences beyond PD and theoretical frameworks. Some decisions were based on other teachers’ examples and recommendations and personal online research (Karchmer-Klein et al., 2017). Other teachers were motivated by a personal desire to improve their practice, especially as it pertained to supporting at risk learners such as SPED and ELL students (Stevens et al., 2018). One teacher was drawn to blended teaching by a desire to combine two modes of teaching that she loves—online teaching and traditional classroom teaching (Bingham & Dimandja, 2017). This same article went on to list frustration with traditional models of teaching, a desire to personalize learning for students, and a desire to offer social-emotional support to students as motivation for teachers’ decisions in their study.

**Conclusion**

The articles we reviewed indicated that blended teachers make decisions related to all four blended teaching competencies. Since all but one of the articles we reviewed included instances of teachers making online integration decisions, we believe that the majority of blended teaching decisions occur in this area. These decisions most often addressed what activities to assign to students and which learning environment, online or in person, these activities should occur in. Other online integration decisions addressed video creation, assessment, extension opportunities, and management.

Online integration, personalization, and data practice decisions occurred in ten, eight, and six articles, respectively. However, due to the relatively small sample size and close number of articles with occurrences in the remaining three competency areas, we are hesitant to conclude that blended teaching decisions are happening with the same relative frequency in practice as our reviewed articles might indicate. Online interaction decisions involved facilitating online
discussions and feedback. Personalization decisions addressed how much control of learning decisions to leave to the students or what areas students would have choice in. Data practice decisions addressed how to collect data and how to use it. Our reviewed articles included teachers collecting performance data from assessments, projects, and discussion posts, participation data from a learning management system, and behavioral data from school records. Teachers used this data to inform future instruction and remediation.

BT decisions were frequently informed by professional development. Often this occurred when teacher educators chose to model effective blended teaching practices within professional development courses about blended teaching. Professional development also influenced blended teaching decisions by demonstrating technology tools, offering continued support, and facilitating collaborative discussions and planning among participants.

Theoretical frameworks also influenced blended teaching decisions in all of our reviewed articles. However, half of our articles only cited “blended teaching” or “flipped classroom model” as a theoretical framework. Blended teaching decisions were also informed by instructional design and learning theory frameworks with one article listing a content specific theoretical framework that informed teachers’ blended teaching decisions.

Research Implications

Because the articles focused on limited research topics, not all of the decisions that the blended teachers were making were addressed. The only teachers that were evaluated were teachers that were part of the articles that met the criteria for our literature review. This is an extremely small sample that may not accurately represent the average teacher. Future research could investigate decision making among practicing teachers outside of those included in research articles, especially as it pertains to theoretical frameworks motivating their decisions.
Many of the teachers in the articles we reviewed were exposed to theoretical frameworks because they were part of academic research. This leads us to wonder how often the average teacher is motivated by a theoretical framework. As noted in one of our reviewed articles, flipped classroom implementation has been, “driven more by teachers’ intuitive beliefs, rather than empirically-based principles” (Lo & Hew, 2017, p. 222). We don’t think it is unreasonable to extend this assertion to blended learning in general.

Future research could also focus on decision making of practicing teachers within online integration since our review indicates that most blended teaching decisions are occurring within this competency. On the other hand, future research might seek to understand decision making within the other competency areas since our literature review indicates that these decisions are documented less often in research literature. Whether this is because they occur less frequently or they are simply researched and documented less might be understood by inquiring among practicing blended teachers.

**Practitioner Implications**

We found blended teaching decisions occurring in all four of the blended teaching competencies. Because of this, teacher educators, instructional coaches, and educational administrators should include support and instruction that addresses all four competencies. However, since the majority of decisions in the articles we reviewed occurred within online integration, teacher educators may want to treat this competency as a foundational starting place. Teacher educators may also want to design professional development that is personalized to teachers’ strengths, weaknesses, and interests by encouraging participants to evaluate these strengths, weaknesses and interests using a tool like the Blended Teaching Readiness Survey developed by Graham, Borup, Short, and Archambault (2019).
Practicing teachers should also be aware that there are decisions to be made in all four blended teaching competencies. While teachers may be more interested or adept in one area, they should consider the decisions that could be or are being made in all four competency areas and seek to educate themselves about strategies and frameworks to support those decisions.
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APPENDIX B

Institutional Review Board Approval Letters and Consent Forms

Memorandum

To: Charles Graham
Department: BYU - EDUC - Instructional Psychology & Technology
From: Sandee Ana, MPA, HRPP Associate Director
       Wayne Larsen, MAcc, IRB Administrator
Date: March 07, 2022
IRB#: IRB2022-079
Title: How are Emerging Blended Teachers Experiencing Coaching Support?

Brigham Young University’s IRB has approved the research study referenced in the subject heading as exempt level, categories 1, 2, and 4. This study does not require an annual continuing review. Each year near the anniversary of the approval date, you will receive an email reminding you of your obligations as a researcher and to check on the status of the study. You will receive this email each year until you close the study.

The study is approved as of 03/07/2022. Please reference your assigned IRB identification number in any correspondence with the IRB.

Continued approval is conditional upon your compliance with the following requirements:

1. A copy of the approved informed consent statement can be found in IRIS. No other consent statement should be used. Each research subject must be provided with a copy or a way to access the consent statement.
2. Any modifications to the approved protocol must be submitted, reviewed, and approved by the IRB before modifications are incorporated in the study.
3. All recruiting tools must be submitted and approved by the IRB prior to use.
4. Instructions to access approved documents, submit modifications, report adverse events, can be found on the IRB website, IRIS guide: https://irb.byu.edu/iris-training-resources
5. All non-serious unanticipated problems should be reported to the IRB within 2 weeks of the first awareness of the problem by the PI. Prompt reporting is important, as unanticipated problems often require some modification of study procedures, protocols, and/or informed consent processes. Such modifications require the review and approval of the IRB. Please refer to the IRB website for more information.
Consent to be a Research Subject

Introduction
This research study is being conducted by Michelle Jensen and Charles R. Graham at Brigham Young University to explore how coaching can support implementation of blended teaching strategies in k-12 classrooms. You were invited to participate because you are a teacher who received coaching to support implementation of blended teaching practices.

Procedures
If you agree to participate in this research study you will participate in two 30-60 minute interviews about your coaching experience and your implementation of blended teaching practices. The interviews will take place online using the Zoom video conferencing tool at a time that is convenient for you.

Risks/Discomforts
The risk to you for participating is minimal. You may lose some privacy. This may be minimized by removing names and identifying information from the published findings and securing all data that is provided to our research team. You might experience some discomfort sharing coaching and teaching experiences.

Benefits
You may benefit from further reflection on your blended teaching practices but there are no direct benefits to participating in the research as compensation (see below) is not considered a direct benefit.

Data Sharing
We will keep the information we collect about you during this research study for analysis and for potential use in future research projects. Your name and other information that can directly identify you will be stored securely and separately from the rest of the research information we collect from you. De-identified data from this study may be shared with the research community, with journals in which study results are published, and with databases and data repositories used for research. We will remove or code any personal information that could directly identify you before the study data are shared. Despite these measures, we cannot guarantee anonymity of your personal data. The results of this study could be shared in articles and presentations, but will not include any information that identifies you unless you give permission for use of information that identifies you in articles and presentations.

Confidentiality
Transcripts of your interviews will be de-identified and stored in a password protected folder that is only accessible to the researchers for an indefinite period of time. Recordings of the interview will be destroyed after transcripts are created.

Compensation
You will receive a $50 stipend for completing both 30-60 minute interviews. Stipends will be added to April, May, or June paychecks.
**Participation**
Participation in this research is voluntary. You have the right to withdraw at any time or refuse to participate entirely without jeopardy to your employment.

**Questions about the Research**
If you have questions regarding this study, you may contact Michelle Jensen at 801-319-9372 or Charles Graham at 801-422-4110 for further information.

**Questions about Your Rights as Research Participants**
If you have questions regarding your rights as a research participant contact Human Research Protection Program at (801) 422-1461; BYU.HRPP@byu.edu.

**Statement of Consent**
I have read, understood, and received a copy of the above consent and desire of my own free will to participate in this study.

Name (Printed):     Signature:
Date:
Memorandum

To: Charles Graham  
Department: BYU - EDUC - Instructional Psychology & Technology  
From: Sandee Aina, MPA, HRPP Manager  
Wayne Larsen, MAcc, IRB Administrator  
Bob Ridge, PhD, IRB Chair  

Date: March 26, 2020  
IRB#: IRB2020-127  
Title: K-12 Blended Teaching Within the Content Disciplines

Brigham Young University’s IRB has approved the research study referenced in the subject heading as exempt level, Category 2. This category does not require an annual continuing review. Each year near the anniversary of the approval date, you will receive an email reminding you of your obligations as a researcher and to check on the status of the study. You will receive this email each year until you close the study.

The study is approved as of 03/26/2020. Please reference your assigned IRB identification number in any correspondence with the IRB.

Continued approval is conditional upon your compliance with the following requirements:

1. A copy of the approved informed consent statement can be found in IRIS. No other consent statement should be used. Each research subject must be provided with a copy or a way to access the consent statement.
2. Any modifications to the approved protocol must be submitted, reviewed, and approved by the IRB before modifications are incorporated in the study.
3. All recruiting tools must be submitted and approved by the IRB prior to use.
4. Instructions to access approved documents, submit modifications, report adverse events, can be found on the IRB website, IRIS guide: http://orca.byu.edu/irb/iRIS/story.html5.html
5. All non-serious unanticipated problems should be reported to the IRB within 2 weeks of the first awareness of the problem by the PI. Prompt reporting is important, as unanticipated problems often require some modification of study procedures, protocols, and/or informed consent processes. Such modifications require the review and approval of the IRB. Please refer to the IRB website for more information.
Consent to be a Research Subject

Introduction
This research study is being conducted by Charles R. Graham, Cecil Short, and Michelle Jensen at Brigham Young University in collaboration with Jered Borup at George Mason University to explore how K-12 blended learning practices are enacted across grade levels and disciplines. You were invited to participate because you are a teacher who is implementing blended teaching in your classroom.

Procedures
If you agree to participate in this research study you will participate in a 60-90 minute interview about your blended teaching practices. The interview will take place online using the Zoom video conferencing tool at a time that is convenient for you. The researchers may contact you later to clarify interview statements for approximately 15 minutes.

Risks/Discomforts
The risk to you for participating is minimal. You might experience some discomfort reporting if any of the barriers or challenges to your blended teaching have to do with school or district administration or policies. Researchers will minimize any risks by removing names and identifying information from the published findings.

Benefits
There are no direct benefits to participating in the research as compensation (see below) is not considered a direct benefit.

Confidentiality
Transcripts of your interviews will be de-identified and stored in a password protected folder that is only accessible to the researchers for an indefinite period of time. Recordings of the interview will be destroyed after transcripts are created.

Compensation
You will receive a $50 Amazon E-card for completing the 60-90 minute interview. The cards will be distributed as soon as possible following the interview (preferably within a week).

Participation
Participation in this research is voluntary. You have the right to withdraw at any time or refuse to participate entirely without jeopardy to your employment.

Questions about the Research
If you have questions regarding this study, you may contact Charles Graham at 801-422-4110 for further information.

Questions about Your Rights as Research Participants
If you have questions regarding your rights as a research participant contact IRB Administrator at (801) 422-1461; A-285 ASB, Brigham Young University, Provo, UT 84602; irb@byu.edu.

Statement of Consent
I have read, understood, and received a copy of the above consent and desire of my own free will to participate in this study.
APPENDIX C

Instruments

Article 1: Semi-structured Interview Protocol

Introduction (30 min)

Thank you for your willingness to participate in this interview.

Background

- Could you tell a little bit about your teaching background and your current position?
- What are your general feelings towards blended learning?
- How often do you use a blended learning approach in your classroom?

Description of Blend (Online Integration)

- Please describe what you do to blend or connect online and in-person instruction/activities in your classroom.

- Can you give me an example of a blended lesson you have taught and what students did in the online space and what they did in the in-person space (no technology)?
  - How do you decide what to do online and off-line in your blend?
  - How do you connect the online and off-line activities in your blend?
  - How did students benefit from that blend? Is there a specific student that you are thinking of that you could tell us about without using names?

- Can you give me a different type of an example of a blended lesson you have taught and what students did in the online space and what they did in the in-person space (no technology)?
  - How do you decide what to do online and off-line in your blend?
  - How do you connect the online and off-line activities in your blend?
  - How did students benefit from that blend? Is there a specific student that you are thinking of that you could tell us about without using names?

- What are some examples of technologies you have students use in blended learning?
  - How do students benefit from those technologies?
  - What other technologies do you wish you had? What would you do with it?
Rationale for Blending

- What motivated you to shift from traditional in-person teaching to blended teaching?
  - Was there a particular reason why you were drawn to blended learning or event that drew you to blended teaching?

- Can you provide an example of a challenge that blended teaching has helped you to overcome?
  - Are there any other challenges that are unique to your content area that blended learning has helped alleviate?
  - What learning opportunities has blended learning allowed that weren’t possible before using this model?
  - If not, are there additional benefits that you have encountered through using blended teaching?

- While blended teaching can help to overcome challenges, we also recognize that it can come with new challenges for teachers and students. Have you or your students experienced any new challenges as a result of blended learning and, if so, how have you addressed those new challenges?

**Blended Teaching Competencies (45 min)**

There are some blended teaching competencies that we will be asking about. We are guessing that you will have more to say about some than others. That’s totally fine. “I don’t do that” or “I don’t have anything to share on that” are totally appropriate answers.

Management

- Does your blended classroom look different than it would look if you were not teaching a blended class? If so, . . .
  - . . . can you describe those differences?
  - . . . was it difficult to adjust to a different classroom organization?

- What makes classroom management challenging when teaching [content area]?

- Do you have an example of the ways that you have had to change your classroom management since you’ve started to teach blended? (interviewer can follow up regarding classroom materials, transitions, instructions, or use of the online space)

- Have you noticed any change in students off-task behavior as a result of blended learning?
  - Is there a specific student that you can describe that helps to highlight that
change?
○ Do you do anything to track their online behavior?
○ How do you intervene when students are using technology inappropriately? Do you have an example that you can share?

• If you were mentoring a new blended teacher in your content area, are there tips or tricks that you would share for good blended classroom management?
  ○ Anything that teachers in your content area need to do at the start of the year?
  ○ Are there procedures that students need to be taught so that things run smoothly?
    ■ Transitioning between online and in-person activities
    ■ Managing their passwords
    ■ Using any online tools or systems
    ■ Troubleshooting technological issues

• Is there any other advice that you would give a teacher in your content area regarding classroom setup and management for blended learning?

Personalization

*Personalized learning classrooms give students some choice regarding dimensions of their learning like goals, time and place of learning, and/or the pace or path of learning.*

• Can you paint me a picture of what personalized learning looks like in your classroom and describe how it meets the goals of your course?

• Can you provide an example of personalized activities in your content area that you use to provide students with choice over their own time, place, pace, path, or goals of learning?
  ○ Examples: When students could personalize when (TIME) or where (PLACE) they learn?
  ○ Examples: Students choosing their own learning PATH?
  ○ Examples: Students choosing the PACE of their learning?
  ○ Examples: Students setting their own learning GOALS?
  ○ Examples: Has blended learning enhanced any Problem or Project Based Learning units in your course?

• How has personalized learning benefited you and your [subject area] students? Can you share an example of a student who particularly benefited from your approach to personalized learning?

• Please share a story about how one or more of your students were impacted by personalized learning.
  ○ (If the interviewee shared a story of positive impacts) Did the personalization activities have any negative impacts on your students?
○ (If the interviewee shared a story of negative impacts) Did the personalization activities have any positive impacts on your students?

● How did engaging in personalization through blended teaching affect you as a teacher?
  ○ (If the interviewee shared a story of positive impacts) Did engaging in personalization activities have any negative impacts on you?
  ○ (If the interviewee shared a story of negative impacts) Did engaging in personalization activities have any positive impacts on you?

● Will you continue using personalization in this course in the future?
  ○ Why is that?

● What advice would you give teachers in your content area who wish to add more personalized learning to their courses?

Data Practices

Data practices involve the use of digital tools to monitor student activity and performance in order to guide student growth.

● Can you share an example of how you have used student performance data to . . .
  ○ inform changes to future learning activities in your classroom?
  ○ inform changes to how you group students in your classroom?
  ○ inform changes to the learning materials/assessments you provide to students?
  ○ help improve learning in your class?
  ○ provide students with more targeted tutoring or feedback?

● Can you provide an example of how you use data from a learning management system (LMS) or other student software in your classroom?
  ○ Are there dashboards or reports that are particularly useful to you?
  ○ If you don’t use data from these systems, why? What has been the barrier?
  ○ Do students use any learning programs that adapt to students’ needs/learning? If so, what are they and what do they look like? Do you have an example of a student who benefited from it?

● Can you share an example that shows how important it can be to track a student’s learning and progress in a blended environment?
  ○ How did you know when the student(s) struggled or ultimately mastered a concept or skill?
  ○ How did you track the student’s scores? Can you describe the tools and resources you used?

● Can you share an example that shows the importance of monitoring or tracking students’ online behavior?
  ○ Are there tools or reports that helped you monitor the student’s online activity?
Online Interaction

*Online Interactions involve you as a teacher interacting with students online and/or facilitating student to student interactions.*

**Learner-Learner Interactions**

- Can you share an example of how students are communicating or collaborating with each other using technology?

- Do you have any other examples of students communicating online? This could include online discussion, sharing, or peer feedback activities. In your example can you include things like what students’ were discussing or sharing, what tools they were using, why you decided that it would be done (at least in part) online, and how it benefited students?
  - At times it can be hard for teachers to see why they would have students communicate online when they could communicate in person. How would you respond to that belief?
  - Why do you have your students communicate online? Do you have any examples that help to show how online communication can benefit students?

- Do you have any examples of online student collaboration that you could share? In your example can you include what they were collaborating on, what tools they were using, and how the technology enhanced their work?
  - Do you find that students’ collaboration is different in blended classes than when they are collaborating without technology?
  - Do you ever have students use technology to provide each other with feedback on their projects? If so, how do you set that up in a blended environment? Can you share an example?

**Learner-Instructor Interactions**

- Has blended learning impacted how you interact with students? If so, can you describe how?

- Has blended learning impacted your ability to form relationships with students, either positively or negatively? Do you have an example that you could share?

- Has blended learning changed the way that you communicate feedback to students either online or offline? Do you have examples that you can share?

- Do you have any advice for blended teachers in your field/discipline/grade seeking to integrate online communication and interactions into their blended classes?
**Barriers and Enablers (15 min)**

**Barriers**
- What have been the greatest barriers to implementing blended learning in your classroom?

**Enablers**
- What has been most helpful to you in getting to where you are with blended learning in your classroom?

**Closing**
- As we finish the interview do you have any other advice that you would like to give to teachers moving into blended teaching?
- Do you have any other particularly cool or interesting stories about blended learning in your class that you would like to share?
  - If “no” to both questions, provide them with contact information for the researchers in case they do think of something that might be useful to future blended teachers.

*Thank you for participating in this research. There may be some cases that require us to follow up with you about further details or clarifications for your responses. Would it be okay if we contacted you with those follow up questions?*
Article 2: Semi-structured Interview Protocol (First Interview)

Thank you for your willingness to participate in this interview.

Background (5–10 minutes) Keep this brief

- Could you tell a little bit about your teaching background and your current position?
- What are your general feelings towards coaching?
- What are your general feelings towards blended learning?

Coaching in General (10–20 minutes)

- Tell me about any coaching you have received to support your implementation of blended teaching strategies?
  - Who did you receive coaching from?
  - (If only the Innovative Learning Coach was mentioned.) Did you receive any other support for your implementation of blended teaching strategies from anyone else, including others that aren’t formally designated as coaches?
  - Can you share a little about your relationship with those coaches that you just mentioned?
    - How long have you known them?
    - In general, how often do you get help from them?
  - How did you determine when you needed or wanted coaching (to support implementation of blended teaching strategies)?
  - How did you request coaching?
  - Is there anything else you would like to add about coaching that supported your implementation of blended teaching strategies?

Coaching SPECIFICALLY pertaining to the Blended Teaching to Personalize Course (20–30 minutes)

You recently completed the district’s Blended Teaching to Personalize professional development course. Can you tell me about the coaching that you received while you worked through that course?

- Please describe one of your coaching sessions that supported this PD? (pick a typical one)
- Please describe another coaching session that supported this PD?
- What was the most helpful thing about the coaching you received?
- How did input from your coach affect your blended unit plan?
- Can you tell me about a time your coach provided guidance regarding your choices of activities for your blended unit?
- Can you tell me about any activities you reconsidered or added to your blended unit plan as a result of discussion during your coaching session?
- Can you tell me about a discussion you had with your coach regarding strategies to connect online and in-person activities?
  - In what way would you like to improve the coaching you received?
  - If the participant mentioned non formal support in the previous section ask them to describe it here. How did this impact your work with your innovative learning coach?

**Summary Questions**

- Is there anything you would like to add about the coaching support you received?
- To what extent do you think you will use the knowledge and skills gained in this course/coaching experience—after the course is complete?

*Thank you for participating in this research...*
Article 2: Semi-structured Interview Protocol (Second Interview)

The researcher will determine questions based on interview #1. The purpose of these questions will be to explore emergent themes in the first interview.

POSSIBLE questions to go deeper in an area addressed in interview #1

- Can you tell me about a time when a coach helped you with the Blended Teaching course online asynchronous content that YOU participated in?
- Can you tell me about a time when a coach helped you plan your blended teaching?
  - How did your coach help with completing the planning document?
- Can you tell me about a time a coach helped during your implementation?
- Can you tell me about a time when a coach helped you reflect on your blended unit implementation?
- Can you tell me about a time when a coach helped with future blended teaching plans to follow your blended unit implementation?

Questions about the blended unit

- Can you describe the blended unit you designed and implemented as a part of the Improving Blended Teaching to Personalize professional development course?
- How did your coach help you with the following decisions:
  - What activities students do online?
  - What activities students do in person?
  - How those in-person and online activities connect?
  - Your plans for blended teaching in the future?

Questions about the coaching experience that were not brought up in interview #1

I’d like to understand your coaching experience within the BL professional development course. I’m going to go through each part of the course. Please indicate if you experienced coaching during that part of the course, either formal or informal. If you did, please describe your experience.

- The independent synchronous portion of the online Canvas course
- Filling out the blended unit planning document
- Designing your blended unit
- Implementing your blended unit
- Reflecting on your blended unit
Questions about coaching that addressed BT challenges

- What questions or challenges pertaining to blended teaching did you bring to your coaching experiences?
- What gaps were you facing?
- Tell me about any coaching that helped you to overcome these challenges?

Closing

- Do you have any additional stories about your coaching experience that you would like to share?
- What was the most valuable part of the coaching experience for you as you worked on your blended unit?
- Is there something you wished would have happened with the coaching that didn’t happen?
- Do you anticipate participating in future coaching sessions? Why or why not?
- In what ways do you anticipate using the new knowledge you’ve gained as a result of this experience?
  - If “no” to both questions, provide them with contact information for the researchers in case they do think of something that might be useful to future blended teachers.
Article 2: Blended Unit Planner

**Blended Unit Planning**

**Section 1: Blended Teaching Foundations: Improving My Dispositions and Skills**

Reflect on the dispositions and technology skills section of the [readiness survey](#).

Based on the readiness survey, what areas are your strengths?

What areas have the most room for development?
Section 2: Blended Teaching Foundations: Focusing on a Specific Standard

Throughout this course, you will focus on one learning standard or lesson to develop blended teaching strategies, activities, and assessments. It may be beneficial to choose a standard that has been particularly challenging in the past.

Write your standard in the box below.

Reflect upon how this standard may have been taught in the past. What challenges might blending help you overcome with this standard?
What prerequisites do your students need to successfully learn the content and gain the skills within your selected standard?

How will you assess these prerequisites?
Brainstorm possible assessments, assignments, and activities that you might use in the online learning space and the in-person learning space for your learning standard by filling out this chart. **Include activities that will help students learn and assess the prerequisite content and skills they are missing.**

<table>
<thead>
<tr>
<th>Online and In-Person Activities</th>
<th>Online Activities</th>
<th>In-person Activities</th>
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<tbody>
<tr>
<td><strong>Learner-Content Interactions</strong></td>
<td>1.</td>
<td>1.</td>
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<td>2.</td>
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<tr>
<td><strong>Learner-Learner Interactions</strong></td>
<td>1.</td>
<td>1.</td>
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<td>2.</td>
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</table>

Select 2 or 3 of the activities from your chart and explain how the online and in-person activities are connected.

<table>
<thead>
<tr>
<th>Online Activity</th>
<th>In-Person Activity</th>
<th>Description of Connection</th>
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</table>
Section 4: Online Integration: Evaluating Blended Activities

Look back at the activities you created. Place your activities in the appropriate place on the PIC-RAT tables below. In the bottom row of each chart, provide an explanation for your placement.

<table>
<thead>
<tr>
<th>PIC</th>
<th>PASSIVE</th>
<th>INTERACTIVE</th>
<th>CREATIVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Explanation:</td>
<td>Explanation:</td>
<td>Explanation:</td>
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</table>
**RAT at the ACTIVITY LEVEL**

<table>
<thead>
<tr>
<th>REPLACES</th>
<th>AMPLIFIES</th>
<th>TRANSFORMS</th>
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<tr>
<td>Explanation:</td>
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**RAT at the CLASSROOM LEVEL**

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<tr>
<th>REPLACES</th>
<th>AMPLIFIES</th>
<th>TRANSFORMS</th>
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<tr>
<td>Explanation:</td>
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</table>

*For clarity about the difference between RAT evaluation at the ACTIVITY LEVEL and at the CLASSROOM LEVEL review the last 3 paragraphs on this page of the course.*
Section 5: Data Practices: Developing a Strategy for Mastery Assessment

Looking at your chosen standard, describe what mastery of the standard looks like.

<table>
<thead>
<tr>
<th>Mastery Planning Table</th>
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<tbody>
<tr>
<td>Exceeds Mastery</td>
</tr>
<tr>
<td>How can students go beyond the standard?</td>
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<tr>
<td>Shows Mastery</td>
</tr>
<tr>
<td>How will you know if students have mastered the standard?</td>
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<tr>
<td>Near Mastery</td>
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<tr>
<td>What shows progression towards the standard?</td>
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<tr>
<td>Remediation</td>
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<tr>
<td>What would need your immediate attention? What basic knowledge is required to master the standard?</td>
</tr>
</tbody>
</table>

Describe the assessment you will use to measure student mastery. What will students be expected to complete to show mastery?

<Is it a test, project, presentation, or something else? What will the assessment consist of - number of items and types of questions, scope of project, length of presentation, etc.?>
Does your assessment measure mastery through a percentage of questions answered correctly or does it need a rubric? Enter the percentage or plan out the rubric below. You can also link to the rubric if needed.

Brainstorm other ways that students may be able to illustrate mastery.
Section 6: Personalization and Differentiation: Planning a Playlist

A playlist is a list of learning activities that includes both required and optional activities.

**Personalizing Assessments**

Create 2-4 assessment options for students to choose from in order to demonstrate their learning.

List your assessments and provide a brief description for each in the table below. Describe how and for whom each option works best. These can be tests and quizzes, but could also include activities and assignments such as project-based and problem-based learning.

<table>
<thead>
<tr>
<th>Assessment Option</th>
<th>Description</th>
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</table>
Describe possible activities for your playlist that students can follow or choose from to personalize pace, time, place, and/or path.

<table>
<thead>
<tr>
<th>Activity/Program</th>
<th>Brief Description</th>
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</tbody>
</table>
Create your playlist of activities and assessments in either your LMS or as a physical paper copy with links and/or QR codes. Brainstorm and plan in the area provided below and then provide a brief description of how the playlist will be used.
Describe how your playlist will be used.
Section 8: Designing and Evaluating Your Unit: Blended Lesson Plan

Create your lesson plan in whatever format works best for you. Keep in mind that however you create your lesson plans, it should include: STANDARD(S), OBJECTIVE(S), MATERIALS NEEDED (including tech needs), INSTRUCTIONAL PLAN, FORMATIVE and/or SUMMATIVE ASSESSMENT(S).

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<th>STANDARD(S):</th>
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<th>OBJECTIVE(S):</th>
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<th>MATERIALS NEEDED (including tech needs):</th>
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<th>INSTRUCTIONAL PLAN:</th>
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<th>FORMATIVE ASSESSMENTS:</th>
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<th>SUMMATIVE ASSESSMENT(S):</th>
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Now that you have learned about blended learning, created a plan to implement blended learning, and have experienced it in your classroom, let’s talk about what happened. FIRST, fill in the information in the table below. Then, with your coach, discuss these questions and take any further notes you may want to add.

<table>
<thead>
<tr>
<th>What worked well?</th>
<th>What did not work well?</th>
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<th>What would you for sure keep for next time?</th>
<th>What support and training do you want/need?</th>
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Article 2: Course Completion Survey

Improve Blended Teaching Course Feedback & Reflection Form

What is your name? (Optional)

Which subject area(s) do you teach? (Please check all that apply.)
- Career & Technical Education
- English as a Second or a Foreign Language
- Health & Physical Education
- Language Arts (e.g., writing, literature, literacy)
- Math
- Performing & Fine Arts
- Science
- Social Studies or History
- Other:

Please indicate each of the grade levels you currently teach. (Check all that apply.)
- Pre-School
- Kindergarten
- Grade 1
- Grade 2
- Grade 3
- Grade 4
- Grade 5
- Grade 6
- Grade 7
- Grade 8
- Grade 9
- Grade 10
- Grade 11
- Grade 12
- Other:

In which school location do you primarily work?

How many years of teaching experience do you have?
- 0-2
- 3-5
- 6-10
- 11 or More

How many years of blended teaching experience do you have?
- 0-2
- 3-5
- 6-10
- 11 or More
How much time did you spend creating your blended unit?

<table>
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<tr>
<th>0</th>
<th>1</th>
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Number of Hours

How well did the learning material in this course prepare you to plan your blended unit?

- Not Well At All
- Somewhat Well
- Very Well

What recommendations do you have to improve the learning material in this course?

How well did the brainstorming templates in this course prepare you to plan your blended unit?

- Not Well At All
- Somewhat Well
- Very Well

What recommendations do you have to improve the brainstorming templates?

In what ways do you anticipate that your new or improved unit will contribute to mitigating any learning losses that your students may have experienced during the COVID-19 pandemic? (Check all that apply.)

- This unit focuses on clear objectives that align with core standards
- This unit will enable a re-teaching experience
- This unit will facilitate a more personalized learning experience
- This unit will help students better demonstrate their competencies
- This unit will improve the in-person instruction I provide
- This unit will provide assessment data that will inform my future instruction
- This unit will provide students with an extension of prior learning
- Other:

How would you rate the outcomes of your blended unit implementation?

- Strongly agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Strongly disagree

1. I feel the unit helped to improve student learning
2. I feel that the unit increased access/availability for students
3. I feel the unit increased time/cost efficiencies for students
4. I feel the unit increased time/cost efficiencies for the teacher

Did you plan your blended unit independently or with a collaborative team?
- Independently
- With a Team

How well did your coach support your unit planning?
- Not Well At All
- Somewhat Well
- Very Well

What recommendations do you have to improve your coaching experience?

At this point in the process, how confident do you feel about implementing your blended unit?
- Not Confident At All
- Somewhat Confident
- Very Confident

How would you rank the quality of the blended unit you created?
- Below average
- Average
- Above average

Please indicate in the table below the blended activities you were doing prior to this professional learning experience, tried for the first time during this experience, and plan to continue doing in the future. (Check all that apply.)

<table>
<thead>
<tr>
<th>Activity</th>
<th>Blended activities I was doing prior to this professional learning experience.</th>
<th>Blended activities I tried for the first time during this experience.</th>
<th>Blended activities I plan to continue doing in the future.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Online reading</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Online video (curated)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Online video (instructor created)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Adaptive software (e.g., ALDES, Lexia, etc.)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Online Games</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Online Simulations (e.g., Phet)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Online video with embedded questions (e.g., Canon Studio)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Reading with embedded self check questions</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Online discussions</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Instructor participating in online discussions</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Collaborative projects</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Project-based assessment (e.g., writing assignments, videos, digital posters, podcasts)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Mastery-based assessments</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Other</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

To what extent do you believe participating in this experience (online course, unit development, reflecting with a coach) will improve the teaching and learning experiences you provide for your students?
- It Won’t Result in Improvements
- It May Result in Improvements
- It Will Result in Improvements

How much time have you spent on this course, including time you’ve spent:
- In Canvas engaging with the content
- Working on unit development
- Other
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- planning issue, site, or mechanism
- working with a coach

| 0 | 2 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | More than 20 |

Number of hours

What additional support do you feel you might still need?

Is there any other feedback you would like to provide about this course, the overall experience, and/or ways you feel we might make improvements?

>> Submit
DISSESSATION CONCLUSION

This dissertation informed blended teaching practice, professional development, and research by exploring the online integration practices of teachers experienced with BT strategies and the coaching support of teachers new to BT strategies. The extended literature review found that the majority of blended teaching decisions were about online integration strategies—one of the four blended teaching competencies identified by Graham et al. (2019).

The first article studied the online integration decisions of teachers experienced with blended teaching practices. Online activities and strategies for connecting them to the in-person space were identified and described. This information can inform blended teaching practices and training for preservice and inservice teachers.

The second article addressed blended teaching support from the perspective of teachers that are new to the practice and explored coaching, an emerging form of professional development. An analysis of interviews from four teachers that received significant support from coaches focused on supporting blended teaching practices painted a picture of what coaches can offer teachers during their instructional cycles of planning, implementation, and reflection. This article also described important coaching actions that support teacher/coach partnerships that may be unique to coaching to support blended teaching.

As access to technology increases in K-12 schools, it is important that teachers gain effective blended teaching strategies so that technology supports rather than distracts students in gaining important knowledge and skills they will need as students, employees, and citizens. Moving forward there is still a great deal to understand about effective blended teaching practices and professional development to support them.
DISSERTATION REFERENCES

