

# A Personalized Learning Choice Board for Blended Learning Teacher Preparation

Cecil R. Short, Emporia State University and Karen T. Arnesen, Brigham Young University

## OVERVIEW

This unit allows preservice teachers at the end of a one-credit hour, K-12, online and blended teaching course to further explore blended teaching competencies that they feel are weak or are interested in. The unit is meant to be completed independently with weekly asynchronous check-ins to ensure progress. The unit includes a choice board of activities focused on the four different blended teaching competency areas covered in prior units. Students select and complete three activities from the choice board. Each activity provides an opportunity to reflect on the activity and on experiences with personalized learning.

Topics: Online Integration, Data Practice, Personalized Learning, Online Interaction, Blended Learning

Time: 2-4 weeks asynchronous

## MATERIALS

- Choice Board, Activity Instructions, and Rubric ([PDF](#) and [DOCX](#))
  - Personalized Learning Choice Board & Activities (p. 3)
  - Detailed Instructions for Each Option of the Choice Board (pp. 4-15)
  - Choice Board Selection and Goals Survey (p. 16)
  - Choice Board Submission & Rubric (p. 17)
  - Weekly Self-Report (p. 18)
- Access to a Learning Management System (LMS)
- [K-12 Blended Teaching \(Vol. 1\): A Guide to Personalized Learning and Online Integration](#) (Graham, Borup, Short, and Archambault, 2019)
- Computer Equipment

## CONTEXT-AT-A-GLANCE

### Setting

A K-12 online and blended learning course at a large, private, higher education institution in the western United States.

### Modality

Online: Asynchronous with optional synchronous meetings.

### Class Structure

The course is a 14-week, 1 credit-hour, knowledge and skills-based course for elementary and secondary education majors.

### Organizational Norms

One of three 1-credit-hour courses on instructional technology for education majors. It is frequently taken as the final course of the 3-course block.

### Learner Characteristics

Mostly junior or senior education majors with a wide array of pedagogical and content knowledge.

### Instructor Characteristics

The main instructor has a Ph.D. in instructional technology. Graduate students in instructional technology teach their own sections of the course, and most have little or no prior teaching experience.

### Development Rationale

This unit was created to provide experiences with personalized learning from the student perspective and fill content-knowledge gaps from a preservice teacher perspective.

### Design Framework

Project-Based Learning, The Personalized Learning Design Framework, Blended Teaching Readiness Competencies

## SETUP

This unit was the final unit of an online course on K-12 online and blended teaching. Before completing this unit, students completed four units focused on the individual blended teaching competency areas. This unit is asynchronous and unavailable to students until week 10 of a 14-week course.

Setting up includes having the Personalized Learning Choice Board & Activities, Choice Board Selection and Goals Survey, and Weekly Self-Report ready for the students to use. Some of the activities in the choice board rely on students having access to a K-12 classroom or teacher. Each option within the Personalized Learning Choice Board & Activities hyperlinks to additional details for each activity. These were built as pages in the Learning Management System (LMS). Activity submissions were set up as generic assignments in the LMS.

## STANDARDS

The unit was based on blended teaching competencies from Graham, Borup, Short, and Archambault (2019) and is meant to provide pedagogical examples and experiences with the following International Society for Technology in Education (ISTE; 2017) Standards for Educators:

2.5.a – “Use technology to create, adapt and personalize learning experiences that foster independent learning and accommodate learner differences and needs.”

2.6.a – “Foster a culture where students take ownership of their learning goals and outcomes in both independent and group settings.”

2.7.a – “Provide alternative ways for students to demonstrate competency and reflect on their learning using technology.”

## CONTEXT AND SETTING

Personalized Learning Choice Board & Activities was developed as the final unit in a five-unit course for K-12 online and blended teaching. After the completion of the five units, there is one week of review before a comprehensive final. The units in the course followed the organization of blended teaching competencies

as provided by Graham, Borup, Short, and Archambault (2019):

1. Blended Teaching Foundations and Online Integration (Unit 1).
2. Data Practices (Unit 2).
3. Personalizing Instruction (Unit 3).
4. Online Interaction (Unit 4).
5. Blended Teaching for Personalization (Unit 5; see About this Book and Preface).

The course is taught at a private university in the western United States. As a private university, admission is considered competitive with a current acceptance rate of 59%. Learners who are admitted trend toward academic excellence, with the most recent class of freshman having middle 50% ACT scores from 28-32 and the middle 50% of high school GPAs from 3.86-4.00.

The course was originally designed to meet state requirements for teachers to be prepared “to teach effectively in traditional, online-only, and blended classrooms,” and “to facilitate student use of software for personalized learning” (Lancaster et al., 2015, No. 39219, Rule Text, R277-504-4 A.3.e, & A3.f; R277-504-5 C.3.c, & 5.C.3.d). The state recently removed the first requirement for multimodal instruction but kept the requirement for personalized instruction. This change bolstered the need for providing a personalized learning experience for preservice teachers that would allow them to continue to explore essential blended teaching competencies (Pulham & Graham, 2018; Pulham et al., 2018; Short & Hanny et al., 2021).

The K-12 online and blended teaching course is offered to both elementary and secondary education majors. The first four units include weekly synchronous meetings. This fifth unit was designed for asynchronous learning due to the university’s scheduling for elementary education majors.

During the implementation of this course, the elementary education section was disrupted by a practicum near the end of the semester (weeks 8-11). Due to the practicum, some of the options on the choice board required students to observe a lesson, teach a lesson, or interview a teacher. These options assume that students either have access to a classroom via practicum or via personal connections with a classroom teacher.

The instructor of this course ensures students are prepared for the responsibility of having increased independence during the asynchronous, personalized learning unit by previewing the unit during week 5 when the class covers personalizing learning. This also allows course participants adequate time for thinking about the areas and/or activities that they might be interested in completing during the unit. This unit is closed to course participants until week 10 because the instructor wants the course participants to experience the time management aspect that comes with increased learner independence and agency.

The choice board was first added to the course in the Winter 2019 semester. The university has two 14-week semesters (fall and winter) and two 7-week semesters (spring and summer) per year. The first implementation of the choice board coincided with the publication of *K-12 Blended Teaching (Vol. 1): A Guide to Personalized Learning and Online Integration* by Graham, Borup, Short, and Archambault (2019). The primary purpose of the choice board was to provide students with the opportunity to experience personalized learning as students, and therefore experience the self-regulation and teacher support needed to enact this pedagogy.

The choice board was designed for the course and integrated into the course by some of the leading researchers in K-12 blended teacher preparation (Short & Graham et al., 2021) and graduate students with interests related to blended teaching. This group also served as instructors for the course. While some of the instructors had prior K-12 teaching experience, most did not. This created a need for course materials that provided content-specific examples of blended teaching across domains and grade levels (see Graham et al., 2022).

Nearly 1,400 students ( $N = 1,393$ ) have enrolled in the course since the introduction of the choice board. Students have been about 90% female. The current general demographics of the university describe the university population as 51% female and 49% male, 75% single (non-married), 95.5% domestic representing all 50 states in the United States, and 81% Caucasian, 7% Hispanic, 4% two or more races, 3% Asian/Pacific Islander, less than 1% Black, less than 1% American Indian, and 4% Other.

The amount of technological-pedagogical knowledge that students were exposed to prior to taking the course varied based on whether they had taken other

1-credit hour technology integration courses at the university and whether they had been exposed to technological-pedagogical knowledge in their content-specific methods courses. It is worth noting that certain secondary content-area teachers do not take this course, as some content areas opt to teach technology integration practices as part of their content-specific methods courses. This varies year-to-year. Preservice teachers in math have never been required to take this course for that reason.

Course materials were provided through the Canvas LMS and the open educational resources platform EdTech Books. Although the university has its own LMS, Canvas was used to model the platform for students who may be required to use it as part of their future teaching duties. The use of the LMS helped to facilitate the mixed modality aspect of the course.

During the first four units, which typically span 9 weeks during the 14-week fall and winter semesters and 4 weeks during the 7-week spring semester, instruction was synchronous with weekly meetings via Zoom. Prior to the pandemic, the course would transition to in-person class sessions during week 6 to model flipped classes, lab rotations, station rotations, and flex classrooms. In week 10, when the choice board lesson begins, there is one optional, synchronous meeting to introduce the choice board with weeks 11-13 conducted asynchronously.

While this mixture of instructional modalities allowed for the course to model the modalities it was focused on teaching, the asynchronous unit was also designed to accommodate elementary education major's four-week practicum at the end of the semester.

The assignments for each part of the choice board and for each of the asynchronous weeks are detailed in the following section.

## LEARNING REPRESENTATION

This unit was designed to help learners develop the knowledge and ability to meet the research-based competencies for blended learning as developed by Graham, Borup, Short, and Archambault (2019). Each of the activities in the choice board was aligned to one the blended teaching competency areas of Online Integration, Data Practices, Personalized

Learning, or Online Interaction. In addition to these competencies, the unit also provided opportunities for students to meet ISTE (2017) standards 2.5.a, 2.6.a, and 2.7.a, related to personalized learning, agency, and ownership of learning, and using technology to foster personalized learning. To meet these learning objectives, the development of this unit was guided by the Blended Teaching Readiness survey (BTR), Project-Based Learning, and the Personalized Learning Design Framework (PLDF).

The BTR was developed by Graham, Borup, Pulham, and Larsen (2019) to create a measurement of teachers' knowledge and abilities related to research-based blended teaching competencies. The BTR was used at the beginning and end of the course to measure students' growth in blended teaching self-efficacy.

According to Blumenfeld et al. (1991), "project-based learning requires considerable content and metacognitive knowledge on the part of students as they work on extended and potentially ambiguous activities" (p. 379). To allow students to dive more deeply into the blended teaching competency areas, they were tasked with completing various projects related to those competencies.

The Personalized Learning Design Framework (Short, 2022) provides a description of designing personalized learning. This unit was built with personalized learning objectives and assignments focusing on the dimensions of goals, time, place, pace, and path. Students chose which competency areas they wanted to learn more about, and what they would do to learn more about the competency area. Students were encouraged to use their performance data from the BTR to guide their learning, but learning could also be driven by learner profile data (i.e., their interests).

The learning was personalized by the learner at levels three and four of the Taxonomy of Learner Agency (TOLA). The learner selected from a list of activities and chose due dates to personalize their goals and path along level three. The asynchronous nature of the unit allowed learners to personalize the time, place, and pace of their learning along level four. As suggested by Short (2022), learners were offered guidance at both levels three and four of the TOLA to make responsible choices for their learning. The following sections detail how to implement the unit.

## IMPLEMENTING THE CHOICE BOARD

At the beginning of Unit 5, students choose three activities from the Personalized Learning Choice Board & Activities and record their choices using the Choice Board Selection and Goals Survey. Each blended teaching competency has three choices, equaling a total of 12 activities in the choice board. Students are also invited to suggest other activities that meet their goals and interests better, though the activity must have instructor approval.

Once students complete a chosen activity, they submit it using an assignment within the LMS (see Choice Board Submission & Rubric). To help instructors measure and track students' accountability for personalized learning, students complete a Weekly Self-Report about their learning progress and goals.

## THE CHOICE BOARD

Each choice in the Personalized Learning Choice Board includes an activity and a reflection. The choices within the choice board are described below and can be seen in the Choice Board & Activity Instructions and Rubric. The first four units of the course introduce students to the competency areas described in the choice board and allow them to have opportunities with designing instructional materials related to these areas.

## ONLINE INTEGRATION (IG)

The following activities are meant to provide students with the opportunity to think more about how they might strategically combine in-person and online instruction in their future classrooms. This is the most essential area for blended learning, as blended learning is defined by combining instructional modalities. Throughout the first four units of the course, students create a Canvas module that has some online content, an assignment, a quiz, and a discussion. These activities are meant to allow students to think about other ways they can combine online and in-person instruction.

**Online Integration Option 1 (IG1): Teach a short informal lesson twice, once with and once without technology.** For this choice, students plan a short, informal lesson (in any setting) and teach it twice:



once without technology and once with technology. They analyze the differences in the lessons and the advantages and disadvantages of each.

**Online Integration Option 2 (IG2): Describe how you would teach a standard using three different blended models.** Students choose a learning objective and plan three lessons, each lesson using a different blended teaching model. The reflection includes an analysis of the suitability of each model for the learning objective and a rationale for which blend the student would choose to use in the classroom.

**Online Integration Option 3 (IG3): Evaluate a blended teaching lesson that you observe or observe and change an in-person lesson to a blended lesson.**

This option is designed for students who are making observations in a real classroom. If the teacher uses a blended lesson, the students explain why and how the online activities complemented the in-person activities. If the teacher does not teach a blended lesson, students rework an in-person lesson to create a blended lesson, making sure the online learning complements the in-person learning. In both choices, students evaluate the effectiveness of the technology used in the lesson using the 7Ps of Blended Learning (Graham, Borup, Short, & Archambault, 2019), the 4Cs of 21<sup>st</sup>-century skills, and the PIC-RAT framework of technology use (Kimmons et al., 2020).

## DATA PRACTICES (DP)

The following options represent the three Data Practices activities in the choice board. Students must select one of these for their submission. Prior to Unit 5, students in the course create a quiz in Canvas and add it to their Canvas module. The activities listed here leverage this quiz.

**Data Practices Option 1 (DP1): Discover and reflect on the data practices of a practicing teacher.** This option is especially useful for students who have access to a practicing teacher. The student interviews the teacher about their collection of data and answers the questions, What kinds of data does the teacher collect? How is it organized? How is it used to guide pedagogical choices? The student then reflects on the teacher's practices and discusses ways that they might use data in their future classroom.

**Data Practices Option 2 (DP2): Gather and analyze data using Canvas.** Convince at least 4 friends or

family members to complete your Canvas module. As part of the first four units in the course, students created a Canvas module based on a learning objective that they have chosen. For this choice board activity, they find four or five people to work through their module as students, then grade their students' work. Using the Canvas analytics tools, students describe what they learned from the analytics and how they could use that data to better meet their students' needs.

**Data Practices Option 3 (DP3): Analyze your own real-world data, such as sleep or eating, for patterns and make suggestions for improving personal practices.** In this option, students choose two areas of their lives for which they can collect data. Areas can include time on phone, eating choices, amount of sleep or exercise, time spent on schoolwork, etc. They track their data for two weeks then discuss what they found about themselves through the data. The students then discuss how having their future K-12 students collect and analyze their own data could help their future K-12 students set and follow up on goals and how this process gives students more ownership over their learning and growth.

## PERSONALIZED LEARNING (P)

The options in this section of the choice board provide students with more opportunities to explore gathering learner profile data or increase learner agency and ownership of their learning. The first option specifically focuses on learner profile data, while the second and third options provide opportunities for allowing future K-12 students to track their own learning through managing their own learning data or allowing learners to choose how to demonstrate their learning. Both latter options allow for instruction that functions at the upper levels of the TOLA (Short, 2022).

**Personalized Learning Option 1 (P1): Create a learner profile survey appropriate for the grade level you would like to teach.** Using a Canvas quiz or a Google survey, students create a learner profile survey relevant to the context in which they anticipate teaching. The survey could include questions about hobbies, learning preferences, how students feel about the subject matter, questions they may have, etc. After they have created the survey, they have four or five people take the survey then analyze the similarities and differences between the responses. They then explain how they would use the

information to group students in a classroom given different instructional contexts.

**Personalized Learning Option 2 (P2): Evaluate goal tracking sheets and then create your own goal tracking sheet.** As part of helping future K-12 students exercise greater ownership and control over their learning, the preservice teachers were taught to help students set meaningful goals. For this activity, students find and evaluate three goal tracking sheets, then create their own. They explain how they would use their goal tracking sheets and how the sheets will help them guide their future students in setting and meeting learning goals.

**Personalized Learning Option 3 (P3): Plan a variety of assessments for a learning standard.** For this option students create an extensive list of activities that could be used to assess their future K-12 students. If the students in this course have access to a K-12 class, they give the list to the K-12 students, ask them to add more options and then select the option they would choose if they were given a choice. If they don't have access to a class, they give the list to ten friends and ask them to provide the same feedback. The preservice teachers reflect on the type of assessments the K-12 students (or their friends) chose, their [the preservice teachers'] concerns with offering a variety of assessment choices, and what types of assessments were most popular and why.

## ONLINE INTERACTION (IA)

During Unit 4 of the course, students create and add an online asynchronous discussion to their Canvas learning module. The options in this part of the choice board are meant to help students think about creating opportunities for online interaction that go beyond the traditional class-based discussion board.

**Online Interaction Option 1 (IA1): Explore other technologies used for online interaction and create an assignment using one of those technologies.** Students brainstorm tools (such as Flip, Padlet, or Voice Thread) that their future K-12 students can use to interact online without using a discussion board. They choose one tool and create a lesson that uses that tool to integrate the in-person and online space. They submit the lesson plan and discuss why they chose that tool, what challenges using the tool may create and how to overcome those challenges, and the benefits of using asynchronous interaction tools in their classroom context.

**Online Interaction Option 2 (IA2): Write a lesson plan that uses synchronous technology to bring an expert to the classroom.** Students create a lesson plan that uses a synchronous tool to bring an expert into the classroom. They describe why they would want to bring that person into the classroom, what challenges the class might face in using a synchronous tool and how they could overcome those challenges, and how such an interaction could foster 21<sup>st</sup> century skills and prepare students for future work and life experiences.

**Online Interaction Option 3 (IA3): Speak to a teacher and create an online discussion to use in class or at home.** Students who are involved in practicum during the semester can work with their mentor teacher to create an online discussion that meets a class's current learning objective and can be used either during the school day or at home. They implement the activity in their practicum setting and answer questions such as the content of the discussion, how it was used, and the K-12 students' and mentor teacher's reaction to the discussion.

## CHOICE BOARD SELECTION/GOALS SURVEY

Once students know which of the three choice board options they want to complete for Unit 5, they complete the Choice Board Selection and Goals Survey. This survey was created as a quiz within Canvas, but a re-creation of it can be found in the Choice Board & Activity Instructions and Rubric. The quiz presents the choice board within the instructions with hyperlinks to Canvas pages that provided additional information for each option. There are two questions on the quiz. In short, they ask students to answer:

1. What activities will you complete and when do you plan to have them completed?
2. What are your personal goals for Unit 5?

The first question is a matching question in which the learners choose their preferred options from a drop-down menu and match those options to their selected due date.

The second question is an open response question that required students to state their personal goals for the unit. These goals could be related to a variety of topics, such as:

- What students hope to learn about their chosen topics.
- What students hope to learn about the personalized learning experience.
- When students will complete choice board options.
- What students hope to achieve in completing their choice board options (e.g., an assignment worth a good grade, something renewable that they could perhaps implement in their future classroom, or both).

## SUBMITTING CHOICE BOARD ACTIVITIES

To submit the choice board activities, instructors created three generic assignments in Canvas. These assignments are called Choice Board Assignment #1, #2, and #3 respectively. Each assignment has generic instructions for submitting the choice board activities so that any activity can be submitted to the same Canvas assignment. This helps to manage the Canvas gradebook and allows for a streamlined submission process for students.

In addition to using generic instructions, these assignments also use a generic 25-point rubric. The rubric has two criteria: (1) Assignment Submission and (2) Reflection on the Assignment (see Choice Board Submission & Rubric). The first criterion provides a measurement for how well the student completed their chosen activity. This part of the rubric is worth 20 points. The second criterion relates to a general reflection of the process of personalized learning and is worth 5 points. Within the reflection, students are expected to provide details concerning a variety of topics. Such details can include:

- What they learned about the competency area that they chose to do an activity for.
- How the assignment expanded their blended teaching competency.
- What they would do differently if they did the assignment again.
- What their experience with having increased control over the goal, time, place, pace, and path of their learning was like.
- The kinds of support they feel students need for personalized learning of this nature.
- How they might provide support for personalized learning in their future classrooms.

Reactions to such questions are described in Arnesen et al. (2019) and summarized in this paper's Critical Reflection section.

## WEEKLY SELF-REPORT

The Weekly Self-Report in this course is not unique to Unit 5. The course uses the weekly self-report throughout the semester to help instructors balance the course's workload and make pedagogical adjustments. However, during Unit 5, the weekly self-report takes on the additional role of providing instructors with information concerning students' abilities to maintain the goals they set for the unit.

The self-report was created through Google Surveys. Identifying data such as names, email addresses, and section number are collected for each student, but the main purpose of the survey is to have students rank their learning experiences, personal effort, and self-regulation for the week on a scale from 1-10, with one being *lousy* and 10 being *excellent* (see Weekly Self-Report). Students also provide an approximation of how many hours they spent on coursework for the week, feedback regarding the learning opportunities for the week, and their self-regulation goals for the upcoming week.

## CRITICAL REFLECTION

As described in the context and setting section of this paper, this lesson was implemented many times over the last several years. Some of the choice board activities and facilitation strategies for the unit changed during those implementations.

## ITERATIONS OF UNIT ASSIGNMENTS

Instructors found that in early iterations of the choice board, students really liked the personal data assignment (DP3). In the Winter 2019 and Spring 2020 iterations of the course, nearly half of the students taking the course chose this option compared to the other options that were chosen by 10-20% of the students.

The goal of this personal data assignment was to provide students with experience gathering and analyzing data. Many students chose to use data that their devices collected for them automatically. This

usually included data like steps, times standing at least once per hour, calories burned, etc. To make this assignment a little more rigorous, instructors revised it to require one type of data that the students collected themselves without automated technology. This allowed students to gain more experience with data tracking and analysis than the original version of the assignment, and better aligned the activity with the intended goals.

Other iterations to the original choice board included:

- Changing the first online integration assignment (IG1), which originally focused on using PIC-RAT (Kimmons et al., 2020) to evaluate various examples of online and blended learning as provided by the instructors. This was changed to a new activity that allows for a more renewable assignment.
- The data practices activity that includes a teacher interview about their use of data (DP1) originally tasked students with gathering K-12 student data and analyzing it for pedagogical implications. This became difficult for students to accomplish due to data protections for K-12 students during practicum, thus the change.
- The third personalized learning activity (P3) originally tasked students with creating a playlist or choice board to use during practicum. This became too hard to implement in some practicum classrooms, so it was replaced with the option to create multiple assessments for personalized learning. These assessments could still be used as part of practicum, teacher-permitting.

Only these three activities changed completely, and only the personal data activity had revised instructions. The other eight activities have remained the same since their first implementation in the Winter 2019 semester. This is also true of the choice board's generic submission assignments. However, aspects of the choice board's facilitation have changed.

## ITERATIONS TO UNIT FACILITATION

There were several practices related to the facilitation of the choice board that underwent various iterations. These practices included the selection of assignment due dates, selection of choice board activities, and reporting on progress via the weekly self-report.

## SELECTION OF DUE DATES

One of the primary changes to facilitation of the choice board had to do with students selecting due dates for the choice board assignments. Originally, students chose their own due dates for each of the three assignments. These dates could be any time within the three asynchronous weeks. This level of freedom was created to provide instruction at the highest level of the TOLA (Short, 2022). This structure, however, made it difficult for instructors to model the support needed during personalized learning.

The due date facilitation was then changed to allow selection from a list of due dates, shifting from instruction at level four of the TOLA to level three. Students could select any of the possible due dates to submit any or all their assignments. Some students paced the unit to have one assignment due per week. Others chose to submit all three assignments in the first week-and-a-half to provide a free week at the end of the unit. Other students commonly chose to submit all three assignments during the last week of the unit.

Students who chose to submit all their assignments during the last week of the unit usually became overwhelmed by task they had created for themselves and then request an extension for some of their assignments. To prevent students from getting overwhelmed, the final iteration of the due date selection required students to choose a different due date for each assignment.

## SELECTION OF CHOICE BOARD ACTIVITIES

During the first implementation of the choice board, students could choose any three assignments from any blended teaching competency. For the second implementation, instructors required students to choose one activity from three different competencies. This shift was meant to provide students with a more well-rounded developmental experience. During this second implementation, one of selected activities had to be from the Data Practices column. This was due to a request from K-12 partner districts that teacher candidates be more well-versed in using student data to drive instruction.

Choosing a data practices activity also changed over time. When a data practices activity became mandatory, there were specific activities required for



both elementary and secondary education majors. These mandatory choices still exist in the choice board but are no longer required. Ultimately, instructors decided they wanted learners to practice more agency over their choices. The students are now encouraged to choose a Data Practices activity but are not forced to.

Past and current instructors also found combining the Choice Board Selection and Goals Survey into a singular assessment in the LMS supported student completion of each part.

## CHANGES TO THE WEEKLY SELF-REPORT

The weekly self-report has seen several minor adjustments since the Winter 2019 semester. The survey has always collected the same identifying information, and it has always asked students to rate their learning experience and personal effort, to provide an approximation of hours worked, and to provide feedback related to the week's learning activities. However, during Unit 5, the weekly self-report would add a response for reporting on personalized learning goals. This became difficult to manage, as instructors would need to remember to revise the weekly self-report each semester before students filled it out in Unit 5.

To mitigate the need of changing the self-report each semester when Unit 5 began, a new area of the self-report was added during the Fall 2021 semester. This area added two questions related to self-regulation (see Weekly Self-Report). These questions are required during each week of the course to help emphasize the importance of self-regulation to online and blended learning – especially during the personalized learning of Unit 5.

## LEARNERS' EXPERIENCES

Students' experience and perceptions of the first iteration of the personalized unit are described in Arnesen et al. (2019). These experiences and perceptions were largely positive, and those sentiments have continued throughout the unit's iterations.

The qualitative study from Arnesen et al. (2019) included 81 preservice elementary and secondary teachers. Data collection included pre- and post-BTR data, assignment reflections, and final exam

reflections. The key findings from this study are summarized below.

In the BTR pre- and post-test for the course, students answered questions about their readiness to engage in each of the four blended teaching competencies and their overall disposition to teach in a blended context. In all areas, the change in scores was significant (Arnesen et al., 2019). In both the pre-survey and post-survey data, personalization had the lowest average scores; however, the change in the pre-test and post-test scores was greatest for personalization. So, although students did not feel completely confident to personalize their curriculum upon completing the course, they grew more in this competency than in any other competency, bringing them closer to the same level of perceived ability as the other competency areas.

Student reflections on their personalized assignments were coded for the dimension of personalization they mentioned (goals, time, pace, place, and/or path) and for positive or nonpositive experiences. For each dimension mentioned, positive student comments were higher than nonpositive comments, with the positive comments ranging from 79% to 96% for each dimension of personalization. Nonpositive comments ranged from 4.0% to 22% for each of the dimensions of personalization. All nonpositive comments were made by three of the 81 students.

Finally, researchers coded students' reflections of personalized learning via a final exam question. They found that the students' comments centered around four themes: benefits of personalization (35 comments), specific practices of personalized learning (47 comments), changed attitudes towards personalization (63 comments), and implementation issues related to personalization (73 comments). One hundred twenty-six of these comments were positive, while only 23 were negative. Twenty of the negative comments expressed concerns about being able to implement personalization in the K-12 classroom as a beginning teacher. Students' positive reflections showed growth in the areas of personalizing learning experiences, ownership of learning goals and outcomes, and alternative ways for students to demonstrate competency and reflect on their learning per ISTE (2017) standards 2.5.a, 2.6.a, and 2.7.a respectively.

## TIPS FOR IMPLEMENTATION

The instructors' goals for this unit were to (1) give students experience with the excitement of personalizing their own learning activities, a requirement of the self-regulation personalization, and (2) model ways instructors can support students as they increase in autonomy and ownership of their learning. These implementation tips purposefully support these goals.

First, students receive weekly email reminders about the choice board and when assignments are due. Instructors found early in the implementation of the choice board that such support was needed to direct personalized learning.

Second, although students set due dates for their assignments, instructors emphasize that the due dates are flexible. If students needed to change a due date, they were able to counsel with their instructor before the original due date and set a new date. This practice was especially important for instructors who continued to let students select any due date for any assignment, resulting in students trying to submit all their choice board activities at the end of the unit.

Third, instructors respond promptly to emails about questions and concerns from students. When attempting to allow learners to personalize the pace of their learning, it is important that instructors do not become a bottleneck for that pace. Quick responses to student questions allow the students to maintain their learning momentum.

Fourth, instructors are aware that students can struggle with the increased independence of the choice board and should work to mitigate these struggles. In addition to the flexibility of due dates, some students also struggle with having 12 options to choose from and/or the option to create their own activity. In such cases, instructors should have goal-setting conferences with students to help them choose the activities that would best align to their learning goals or weaknesses from the BTR.

Lastly, an in-person discussion over Zoom after the choice board assignments are finished helps students process and analyze their personalized learning experiences and the experiences their future students might have. This reflection is an important part of revisiting the rationale for the unit and helping students think ahead to how they might use personalized learning in their future classrooms.

## REFERENCES

- Arnesen, K. T., Graham, C. R., Short, C. R., & Archibald, D. (2019). Experiences with personalized learning in a blended teaching course for preservice teachers. *Journal of Online Learning Research*, 5(3), 275-310.  
<https://www.learntechlib.org/primary/p/210637/>
- Blumenfeld, P. C., Soloway, E., Marx, R. W., Krajcik, J. S., Guzdial, M., & Palincsar, A. (1991). Motivating project-based learning: Sustaining the doing, supporting the learning. *Educational psychologist*, 26(3-4), 369-398.  
<https://doi.org/10.1080/00461520.1991.9653139>
- Graham, C. R., Borup, J., Jensen, M., Arnesen, K. T., & Short, C. R. (2022). *K-12 blended teaching (vol 2): A guide to practice within the disciplines* (Vol 2). EdTech Books.  
<https://edtechbooks.org/k12blended2>
- Graham, C. R., Borup, J., Pulham, E. B., & Larsen, R. (2019). K-12 blended teaching readiness: Model and instrument development. *Journal of Research on Technology in Education*, 51(3), 239-258.  
<https://doi.org/10.1080/15391523.2019.1586601>
- Graham, C. R., Borup, J., Short, C. R., & Archambault, L. (2019). *K-12 blended teaching: A guide to personalized learning and online integration* (Vol. 1). EdTechBooks.  
<http://edtechbooks.org/k12blended>
- International Society for Technology in Education. (2017). *ISTE standards: Educators*. Retrieved December 1, 2022,  
<https://www.iste.org/standards/iste-standards-for-teachers>
- Kimmons, R., Graham, C. R., & West, R. E. (2020). The PICRAT model for technology integration in teacher preparation. *Contemporary Issues in Technology and Teacher Education (CITE) Journal*, 20(1), 176-198.  
<https://www.learntechlib.org/primary/p/210228/>
- Lancaster, N. L. (Ed.), Hansen, K. A. (Dir.), & Hood, K. K. (Ex Dir.). (2015, April 1). *Utah State Bulletin*, 2015(7). Division of Administrative Rules.

<https://rules.utah.gov/publicat/bulletin/2015/20150401/39219.htm>

Her research and design interests are in blended teaching, personalization, and self-regulation.

Pulham, E., & Graham, C. R. (2018). Comparing K-12 online and blended teaching competencies: A literature review. *Distance Education*, 39(3), 411-432.  
<https://doi.org/10.1080/01587919.2018.1476840>

Pulham, E., Graham, C., & Short, C. (2018). Generic vs. modality-specific competencies for K-12 online and blended teaching. *Journal of Online Learning Research*, 4(1), 33-52.  
<https://www.learntechlib.org/primary/p/182168/>

Short, C. R. (2022). Personalized learning design framework: A theoretical framework for defining, implementing, and evaluating personalized learning. In H. Leary, S. P. Greenhalgh, K. B. Staudt Willet, & M. H. Cho (Eds.), *Theories to Influence the Future of Learning Design and Technology*. EdTech Books.  
[https://edtechbooks.org/theory\\_comp\\_2021/personalized\\_learning\\_short](https://edtechbooks.org/theory_comp_2021/personalized_learning_short)

Short, C. R., Graham, C. R., Holmes, T., Oviatt, L., & Bateman, H. (2021). Preparing teachers to teach in K-12 blended environments: A systematic mapping review of research trends, impact, and themes. *TechTrends*, 65, 993-1009.  
<https://doi.org/10.1007/s11528-021-00626-4>

Short, C. R., Hanny, C., Jensen, M., Arnesen, K., & Graham, C. R. (2021) Competencies and practices for guiding K-12 blended teacher readiness. In A. Picciano, C. Dziuban, C. Graham, & P. Moskal (Eds.), *Blended learning*. Routledge.  
<https://doi.org/10.4324/9781003037736>

## ABOUT THE AUTHORS

**Cecil R. Short** is an Assistant Professor of Secondary Education at Emporia State University. His research focuses on Personalized Learning, Blended Teaching, Open Educational Resources (OER), and OER-Enabled Practices. More about Dr. Short and his work can be found online at <https://www.cecilrshort.com/>.

**Karen T. Arnesen** is a Ph.D. student in the Instructional Psychology and Technology program at Brigham Young University. She has been an ELA teacher, magazine editor, and instructional designer.