

# Attempts Toward Blended Teaching and Personalized Learning in School-Based Agricultural Education

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## Abstract

*The purpose of this study was to explore school-based agricultural education (SBAE) teacher beliefs about personalized instruction and blended teaching and their experiences with implementing personalized learning within their blended teaching practice. The specific research questions that guided our study were 1) What are SBAE teachers' beliefs about blended teaching and personalized learning?, 2) What is their experience with blended teaching and facilitating personalized learning?, and 3) How do their beliefs about teaching and learning impact the ways in which they implement blended teaching and personalized learning? We utilized a hermeneutic phenomenological research design while relying on theoretical research on teacher beliefs to illuminate the experiences of SBAE teachers in blended classrooms. Participants included five in-service agricultural education teachers representing four states in the United States. These participants were identified by post-secondary agricultural education teacher educators and through a state database of SBAE teachers. All self-identified as SBAE teachers who practiced blended teaching. Three themes emerged from data analysis: support for personalized instruction; empowering students; and reality check. Our findings indicate that the beliefs SBAE teachers hold influence their classroom practices and that personalized learning and student choice were important. Recommendations for future research include conducting observational research on personalized instruction in blended settings as well as the impact contextual factors have on the relationship between teachers' beliefs and practice in blended classrooms.*

## Introduction and Literature Review

Throughout 2020 and 2021 teachers across the United States were forced to facilitate remote learning through a variety of asynchronous and synchronous methods, mediated by online learning platforms (Cahapay, 2020). School-based agricultural education (SBAE) programs were not immune to the impacts of COVID-19 government responses (McKim & Sorensen, 2020), and just like other areas of education, SBAE classes shifted to reduced, modified, or remote teaching and learning through asynchronous and synchronous instruction. During this time, many K-12 teachers and teacher educators discovered that they were unprepared for the challenges of online teaching, lacking both the skills and resources they needed to effectively use the technology and online learning platforms (Short et al., 2021). Roberts et al. (2016) noted that effective teaching can be obstructed by pedagogical constraints, such as technological advances. The technology used by teachers to enhance classroom instruction and student learning is constantly changing due to rapid and continual technological advancements (Coley et al., 2015;

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Kotrlik et al., 2003; Martin & Carr, 2015; Stewart et al., 2013). Educational technologies and online communications are ever-present in society, and as a result, 21st-century students, parents, and teachers are demanding an education that reflects the 21st century (Roberts et al., 2016). It is through technological integration that students can engage with content and curriculum in more meaningful ways, with a greater connection to the real world (Hechter & Vermette, 2013). As students develop and demonstrate digital proficiency through their constant contact with technology, it is worth considering how technology can be purposefully adopted and implemented in learning environments to facilitate personalized learning. However, technology adoption and implementation must be supported by pedagogical practice (An & Reigeluth, 2011; Ertmer & Ottenbreit-Leftwich, 2010; Graham et al., 2009; Kotrlik et al., 2003; Ottenbreit-Leftwich et al., 2010). One way to explore the connection between technology and pedagogical practice is by examining the role that both play in blended learning.

Blended learning instructional design has been widely adopted by institutions of higher education (Bonk & Graham, 2006; Bruggeman et al., 2021; Dziuban et al., 2018), and subsequently, a wide variety of empirical and conceptual literature regarding adoption and implementation at the post-secondary level exists (Anthony et al., 2020; Bonk & Graham, 2006; Borup et al., 2011; Brown, 2016; Graham et al., 2013). However, empirical research focusing on the K-12 setting is less prolific than the post-secondary setting, although the body of this literature is expanding (Graham et al., 2019). Poirier et al. (2019) asserted that K-12 blended learning research has been primarily exploratory, focusing on defining blended learning and investigating the various models used in classrooms (e.g., flipped classrooms, flex, station rotation, a la cart). Furthermore, much of the empirical research on blended learning in the K-12 settings has focused heavily on STEM subjects (Attard & Holms, 2020; Borba et al., 2016; Seage & Türegün, 2020), and English language acquisition or reading (Kazakoff et al., 2017; Macaruso et al., 2020; Prescott et al., 2018; Schechter et al., 2015;), with little addressing other content or subject areas. Despite an abundance of research on blended learning in both the K-12 and post-secondary settings, blended learning has remained absent from SBAE research.

Defining blended learning considering current educational and instructional technologies (e.g., computers, internet, learning management systems) is challenging, as it has been previously ill-defined and there is no commonly agreed-upon definition for a complex learning and teaching system (Dziuban et al., 2018; Norberg et al., 2011; Oliver & Trigwell, 2005). Garrison and Kanuka (2004) defined blended learning as “the thoughtful integration of classroom face-to-face learning experiences with online learning experiences” (p. 96) while Graham (2006) noted that there were three commonly mentioned definitions of blended learning: the combination of instructional modalities, the combination of instructional methods, and the combination of online and face-to-face instruction. Although both widely cited definitions above identify a foundational component of blended learning – the combination of online and face-to-face learning – neither definition describes the full potential of implementing blended learning in classroom settings.

Horn and Staker (2015) expanded on these commonly used definitions of blended learning and argued that three distinct components must be present in a blended learning environment. These three components are 1) a formal education program that facilitates student learning, at least in part, through online learning, and provides an element of student control over time, place, path, and/or pace, 2) student learning happens, at least in part, in a supervised brick-and-mortar location away from home, and 3) learning experiences for each student are purposely coordinated between the modalities (brick-and-mortar and online). Much like other prominent definitions found in the empirical literature (Garrison & Kanuka, 2004; Graham, 2006), Horn and Staker (2015) addressed the importance of face-to-face and online learning while also bringing to light additional details and components that help to operationalize blended learning and highlight the potential for personalized learning. Without holistically tending to each of the three aforementioned components of the Horn and Staker (2015) definition, a teacher or classroom arguably cannot be a fully blended learning environment.

*Personalized learning* is when learning experiences are tailored to the individual student and their unique needs (Horn & Staker, 2015). These needs might include relevant learning goals, personalized experiences, and student-specific support (An & Reigeluth, 2011). Likewise, personalized learning also encompasses self-directed learning in which students can interweave their personal interests within the learning experience (Graham et al., 2019; Horn & Staker, 2015). The pedagogy of personalized learning is situated in learner-centered pedagogy and relies on teaching methods and strategies that encourage students to actively participate in the learning process as they investigate, inquire, discover, and create personal meaning through their learning (Krahenbuhl, 2016; Tahirsylaj, 2017). McCombs and Whisler (1997) define *learner-centered instruction* as a focus on the specific experiences, perspectives, talents, interests, backgrounds, and needs of the individual learner coupled with the best teaching practices that prompt high levels of motivation, learning, and achievement for each individual. In learner-centered instruction, the teacher is no longer the purveyor or transmitter of knowledge, or the voice of intellectual authority (An & Reigeluth, 2011; Knowlton, 2000; Schiro, 2008). The learner takes on an active role in the learning process, becoming a participant in developing and understanding the learning materials. Additionally, students in a learner-centered classroom actively engage in the learning process and work at a pace that supports their individual needs. Students then have the ability to develop a sense of agency and ownership for their learning through the ability to guide their own learning (Horn & Staker, 2015, Knowlton, 2000).

Horn and Staker (2015) identified four key elements, or means of engagement, essential to defining blended learning that allows learners to have some form of control or personalization over their learning, which is critical to blended learning. These four means of engagement are time, place, pace, and path, and have been identified by other researchers as key to creating an environment suitable for blended learning to occur (Basham et al., 2016; Graham et al., 2019; Norberg et al., 2011). Pulman and Graham (2018) conducted a literature review of online and blended learning teaching competencies and concluded that the number one competency for teaching in K-12 blended learning and online learning contexts was flexibility and personalized pedagogy. This supports the need to focus attention on the four means of engagement of blended learning identified by Horn and Staker (2015) that address student choice, personalization, and student control over learning.

*Time* refers to when students will have access to learning materials and activities to learn (Graham et al., 2019; Horn & Staker, 2015). For example, a student may access the learning materials and activities during assigned class time, prior to, or after class. Often teachers may utilize lectures or other time-sensitive activities that students cannot retrieve or access if they are not present when the activity occurs. Students who are absent for any reason miss out on these time-constrained elements of the learning experience (Graham et al., 2019; Horn & Staker, 2015). Given enough time with quality instruction nearly all students will learn (Bloom, 1968); when students, or the instructor, are absent, time becomes a limiting factor (Norberg et al., 2011). *Place* refers to where students can access the course materials and participate in learning activities (Graham et al., 2019; Horn & Staker, 2015). Place is closely linked to time (Norberg et al., 2011). With current technologies, learning can occur in a variety of settings and locations (Horn & Staker, 2015). For example, students can access course content and participate in learning activities in a wide variety of settings including face-to-face instruction in the assigned brick-and-mortar classroom or outside the classroom via virtual means like online discussions, chat groups, or pre-recorded lectures (Graham et al., 2019; Horn & Staker, 2015). *Pace* accounts for the speed at which students choose to work through the assigned materials or content (Graham et al., 2019; Horn & Staker, 2015). Pace takes into consideration that students have unique and individual learning needs which impact the speed at which they can complete work or understand concepts (Graham et al., 2019; Horn & Staker, 2015). Lastly, *path* is concerned with how a student chooses to progress through learning activities (Graham et al., 2019; Horn & Staker, 2015). Path can also refer to the personalization of the content to meet the needs and interests of the student. This allows students to select activities or other learning opportunities that best support their needs and interests and allows for choice in demonstrating their learning (Graham et al., 2019; Horn & Staker, 2015).

It is important to note that blended learning, by definition, focuses on how students engage with course content and the learning environment. Moving forward, we focus on *blended teaching* – or the practices teachers use to facilitate the blended learning environment – while drawing from the definition of blended learning established by Horn and Staker (2015). *Blended teaching is the purposeful integration of a formalized online and face-to-face instructional program that incorporates student choice and personalization. Student choice and personalization are achieved through an awareness of how time, place, pace, and path impact student learning.*

### Conceptual/Theoretical Framework

For this study, we relied on theoretical ideas consistent with research on teacher beliefs to explore SBAE teachers' beliefs about personalized learning in SBAE contexts and how those beliefs were demonstrated through practice. All teachers hold beliefs (Bruggeman et al., 2021; Buehl & Beck 2014; Parajes, 1992), including beliefs about pedagogy and pedagogical practices (An & Reigeluth, 2011; Coley et al., 2015; Ertmer & Ottenbreit-Leftwich, 2010; Ertmer et al. 2012; Tondeur et al., 2016). Simply stated, beliefs held by teachers are strongly connected to their behaviors, decisions, and actions related to how teaching is enacted into classroom practice (Bruggeman et al., 2021; Guerra & Wubbena, 2017; Parajes, 1992; Speer, 2005; Tondeur et al., 2017). Teachers use their beliefs to make decisions about teaching in general (Bruggeman et al., 2021), interpret and plan (Parajes, 1992), and select specific instructional strategies or tools to implement into their teaching practice (Tondeur et al., 2017).

Research on teacher beliefs often identifies a distinction between professed beliefs, (what teachers say they believe) and attributed beliefs (what is reflected in their practice; Speer, 2005). However, it has been noted that perceived inconsistencies between beliefs and practices arise when professed beliefs and attributed beliefs are cleanly and distinctly separated. Additionally, it is possible that teacher beliefs and practices may be intentionally or unintentionally inconsistent with one another (Speer, 2005). Ernest (1989) identified three causes that could potentially account for the perceived inconsistencies between professed and attributed beliefs. First, teachers may be aware of the lack of connection between their professed beliefs and their other beliefs and knowledge, especially pedagogical knowledge. If the connection between professed beliefs, other beliefs, and knowledge is weak then there will be a disconnect between professed beliefs and the practices used to teach (Ernest, 1989). Second, awareness of and reflection on beliefs lead toward greater integration of beliefs and practice. This includes the ability to integrate beliefs and classroom practices as well as reconcile conflicting beliefs (Ernest, 1989). Third, social context is a powerful influential factor when examining teacher beliefs and classroom practices. Circumstances, whether logistical or practical in nature, may prohibit teachers from enacting their beliefs in their classrooms (Ernest, 1989; Speer 2005; Wilson & Cooney, 2002). These circumstances may include the curriculum to be taught, available resources, texts, high-stakes assessment, and administration, to name a few.

### Purpose

The purpose of this study was to explore SBAE teacher beliefs about personalized instruction and blended teaching, within the context of SBAE and their experiences with implementing personalized learning within their blended teaching practice. The specific research questions that guided our study were:

- What are SBAE teachers' beliefs about blended teaching and personalized learning?
- What is their experience with blended teaching and facilitating personalized learning?
- How do their beliefs about teaching and learning impact how they implement blended teaching and personalized learning?

### Methodology

This study employed a hermeneutic (interpretive) phenomenological approach to explore teacher beliefs and blended teaching in SBAE. Rather than adhering to the tenets of descriptive phenomenology which only allows for the description of the phenomena under investigation, hermeneutic phenomenology is the philosophy of interpretation (Reiners, 2012), and experiences are viewed from the perspective of the individual in relation to their reality and the everyday world, not what they consciously know (Lopez & Willis, 2004). When interpreting and analyzing the deeper understanding of our daily experience, phenomenological research enables the findings to be used in developing practical theory and can be used to support, challenge, or otherwise inform policy and practice (Lester, 1999). The hermeneutic phenomenological researcher arguably cannot remain neutral in their investigation of the meaning of the human experience. Rather, the researcher exists within the phenomena being explored (Sloan & Bowe, 2014). Furthermore, hermeneutic phenomenology recognizes subjectivity in how the phenomenon is explored and interpreted. This means that the researcher needs to be “perceptive, insightful, and discerning...to show or disclose the object in its full richness and in its greatest depth” (van Manen, 1990, p. 20). Subjectivity recognizes the strength in the researcher’s orientation to the phenomena under study while acknowledging their personal and unique connection to the phenomena, striving to avoid the pitfalls of becoming “arbitrary, self-indulgent, or of getting captivated and carried away” by their personally held preconceptions (van Manen, 1990, p. 20).

How teachers make sense of their beliefs and experiences with blended teaching is essential to understanding practices, decisions, and actions related to classroom instruction. Interpretive phenomenology as a methodological approach allows us to focus on the “why” behind teachers' experiences and practices. Focusing on the why of blended teaching in SBAE goes beyond describing what teachers do, examining a checklist of tasks identified as best practices, or reviewing a list of up-to-date technology that impacts learning. The deeper meaning is connected to how SBAE educators see themselves as teachers and the impacts of blended teaching on how they practice teaching. Moreover, teacher experiences are the foundation of teacher preparation and teacher professional development. Hermeneutical phenomenology is a tool and methodology that allows us to center teachers’ experiences and focus on how teachers are making sense of navigating their teaching contexts.

### **Participant Selection and Recruitment**

Phenomenological research requires that all participants have experience with the phenomena being examined (Creswell & Poth, 2018). To this end, the identified population for our study was SBAE teachers in the United States who self-identified as blended teaching pedagogues and who implemented blended teaching practices in their SBAE classrooms during the 2021-2022 school year. We purposefully sampled participants from multiple avenues to account for a lack of previous research on blended teaching and learning in SBAE. Recruitment emails were first sent through the American Association of Agricultural Education (AAAE) listserv with the intent of seeking recommendations from agriculture teacher educators throughout the United States. Eleven individuals from across the United States responded to the email and recommended a total of 23 individuals. From the list of recommended individuals from AAAE, three SBAE teachers (Jill, Kathy, and Nancy) consented to participate. Additional emails were sent to members of the National Association of Agricultural Educators (NAAE), a national organization for secondary and post-secondary agricultural educators, and the Oregon Agriculture Teacher's Association (OATA). No participants were recruited from NAAE or OATA. Upon recommendation from an individual from North Carolina State University, we contacted SBAE teachers in North Carolina directly using the publicly available North Carolina Ag Ed Teacher Directory. Eighty individuals were randomly identified and contacted. Two participants (Jeremy and Julianne) elected to participate in the study. Ultimately five SBAE teachers representing California, Delaware, North Carolina, and Ohio participated in this study.

## Data Collection and Analysis

We acknowledge that the COVID-19 pandemic potentially impacted data collection for this study. The data collected for this study occurred after many of the widespread shutdowns had ended and the public school system had largely returned to in-person instruction. It is in this post-pandemic context that the participants discussed their beliefs and blended teaching practice.

The primary method of data collection for our study was through semi-structured, in-depth interviews that were conducted via Zoom, a video conferencing software. Semi-structured interviews allowed us to carefully consider the purpose of the interview while providing the flexibility to ask follow-up questions (van Manen, 1990). Anticipating that the participants and the researchers would have operationalized blended teaching differently based on education, training, and experiences, interview questions were not formed utilizing the Horn and Staker (2015) definition of blended learning to allow the participants to share their experiences without being led down predetermined paths. Each interview lasted for approximately 60 minutes. Questions in the interview protocol were centered on the participants' beliefs and experiences with blended teaching in the context of SBAE. We used Otter.ai, a web-based voice-to-text transcription service, to transcribe each of the five interviews. Once the transcription process was completed, the transcripts were uploaded into DeDoose, an online data analysis program. All participants voluntarily provided verbal consent for both audio and video recording and Oregon State University Institutional Review Board (IRB) guidelines directed data collection for this study.

In hermeneutic phenomenology, the goal of the researcher is to interpret the meanings as they relate to the phenomenon under investigation. To move between the parts and the whole of the texts, we employed the hermeneutic circle to review and analyze the findings (Laverty, 2007; Lindseth & Norberg, 2004; Reiners, 2012; Sloan & Bowe, 2014). This process of understanding a text occurs by examining individual parts in conjunction with the researcher's understanding of the individual parts, while also considering the context of the individual parts within the whole document (Sloan & Bowe, 2014). To enter the hermeneutic circle, we drew on the general methodology, or phases established by Lindseth and Norberg (2004) which describe a method for analyzing and interpreting hermeneutical interview text.

During the naïve reading phase, each transcript was read multiple times to gain a better understanding of the text, the ideas presented by the participants, and to take the time to record thoughts about the conversation (Lindseth & Norberg, 2004). This phase was followed by thematic analysis through initial coding, memoing, and focused coding, which were completed based on the guidelines established by Saldaña (2009). During this phase, the initial codes were organized into salient categories that made the most analytic sense to establish preliminary core themes. Once the themes and subthemes were established, we followed the validation process set forth by Lindseth and Norberg (2004) where naïve understandings were revisited to reflect on the themes to determine if they validated or invalidated our naïve understandings. Finally, to gain a comprehensive understanding of the data, the transcripts were read in their entirety once again with the naïve understanding, while keeping the validated themes at the forefront of the mind (Lindseth & Norberg, 2004). During this process, we strived to keep an open mind to alternative meanings and interpretations while taking steps to be aware of our pre-existing understandings.

## Study Quality

For this study, we drew on Lincoln and Guba's (1986) criteria for credibility, transferability, and dependability while applying the concept of reflexivity based on Berger (2015) and Malterud (2001). This was done in an effort to validate our study. *Credibility* was accomplished through member checking through participant feedback on data, preliminary analysis, interpretations, and conclusions (Creswell & Poth, 2018; Lincoln & Guba, 1986). To tend to *transferability* we generated rich, thick descriptions of conversations,

settings, and the participants as advised by Merriam and Tisdell (2015) and used verbatim transcriptions of the interviews as recommended by Maxwell (2013). The use of audit trails as a way to provide transparency to data collection and management (Marshall & Rossman, 2016) was implemented to increase *dependability*.

Engaging in *reflexivity* requires an acknowledgment of research bias, values, and other experiences and how this background informs data interpretation (Berger, 2015; Creswell & Poth, 2018, Maxwell, 2013) and ensuring the researcher's position is understood by the reader (Creswell & Poth, 2018). To address researcher bias and reflexivity, it was necessary for me as the lead researcher to acknowledge my experiences in relation to the phenomenon and consider how my experiences influenced my interpretation of the phenomenon under investigation. As a former SBAE teacher, I was the first in my school to incorporate Canvas, a learning management system, in my courses, I mentored many other teachers as Canvas was adopted schoolwide, and I routinely integrated one-to-one computing with my students. I also believed that my students should connect their learning to their interests and communities, so I took steps to make this possible. Although I was incorporating technology and seeking to create a learner-centered classroom that valued many of the necessary components of blended teaching, in hindsight I would not have considered myself a blended pedagogue. There was so much more I needed to do. It was with this prior experience and the knowledge gained through my research on blended learning and teaching that I approached data interpretation.

## Findings

The desire for the participants to provide *support for personalized instruction* was apparent in our conversations. They believed that through this, they were *empowering students* to make choices about what they learn and how they demonstrate their learning. Additionally, participants experienced a *reality check* that reflected the inconsistencies between their beliefs about blended teaching and personalized learning and what could be realized through their practice. This reality check seemingly negates the beliefs shared about using blended teaching to empower students, however, this conflict highlights the complexity of reconciling beliefs within the realities of complex contextual limitations.

### Support for Personalized Instruction

Nancy, a 27-year veteran high school teacher from Ohio, mentioned that the "...personalization piece, is the critical component of what makes ag programs unique. Because what ag programs do is they figure out each kid individually, and then the relationship they build with their ag teacher is so strong because they know them. And then it becomes an accountability piece with teachers saying, 'Do you want to do this? Great! If not, let's shift gears and head in a different direction, because we have another opportunity for you'." As Kathy, a high school teacher of seven years from California, reflected on how personalized instruction fit into her classroom "...as far as that personalization piece goes, I try really hard to create an environment for what I hope their future can look like...everybody gets what they need to be successful to the extent that I have the capacity to do that."

Each of the participants identified different aspects of time, place, pace, and path as ways that blended teaching allowed them to support personalized instruction and choice for their students. Time, as a means of engagement and personalization, was rarely mentioned by the participants while path was the element most frequently discussed.

Time and place are strongly connected (Norberg et al., 2011). Generally speaking, during school hours students are in the face-to-face classroom, therefore time dictates the place where students are accessing information and where they are engaging in the learning process. In relation to time, only one participant in this study mentioned time in the context of student learning. Jeremy, a middle school teacher

with 17 years' experience from North Carolina, noticed that "a lot of kids, if they're absent, they'll go ahead and do the work", by reviewing the materials on his learning management systems and coming back to class prepared to move on.

When Jeremy and Nancy mentioned practices that connected with place, they did so from the perspective of their role as a teacher rather than how students were approaching learning in different spaces and places. Both Jeremy and Nancy saw blended teaching as a way for teaching and learning to continue without them physically in the same space as the students. Jeremy mentioned that he can "put an assignment up on Google Classroom or Canvas...and I know that the students are doing it." Likewise, Nancy acknowledged that "as an ag teacher who's active at state and national levels...blended learning allows learning to go on without me here." Both teachers believed that students could still be actively engaged in learning without them there to facilitate it because the online component of blended teaching helps to mediate learning.

Pace is the speed at which a student chooses to work through assigned content or materials (Graham et al., 2019; Horn & Staker, 2015). Elements related to pace, much like time, were rarely mentioned in our conversations with the participants. Kathy situated pace as not proceeding with instruction until a foundation is established, "because you're building on a foundation and so if the first level is not ready, why are we moving on to continue to build on the next level?" On the other hand, Nancy discussed pacing in her class as a way for students to self-assess if they needed to review information before moving on or deciding to advance without remediation. Jill, a high school teacher from Delaware with thirteen years of experience, situated pacing similar to Nancy. Jill mentioned that if "my kids that need extra time, they can work on this as slow as quick as they want," but she also maintained some control of student pacing, so students did not "move too far ahead." Later in our conversation, Kathy situated pacing more in the context of returning to the post-pandemic classroom, "if they need time because there are things going on in their life, or their English class has a big assignment due, and they need more time, I encourage them to communicate and advocate for themselves."

Path refers to how students choose to learn, how learning is personalized to meet their needs and interests, and how students demonstrate learning (Graham et al., 2019; Horn & Staker, 2015). The participants referred to path more than any other means of engagement. Path encompasses many different ways that students could engage in learning. Each student has different learning needs and different interests. Jill mentioned that "for one skill, I might give them 10 or 20 different activities that are related to that skill in a year." Kathy recalled several examples related to path that included providing accommodations for all students based on their learning needs, like both digital and handwritten notebooks, assignment menus, revise and resubmit options, and allowing students to demonstrate their learning in a variety of ways.

Kathy also discussed that if "students request a printout, I'll print everything out for them so that they can use paper and pencil...there are students who just know themselves. They know that they're going to understand the material better if they can write it out." Kathy goes on to say that "if typing it out is going to be the difference between you being able to communicate that answer or if writing it out is better, then they can take the test on paper." Similarly, Jeremy mentioned that the "personalization piece is more how you want to share with me that you've mastered the material...if you want to create something tangible, a presentation, if you want to work with somebody to do something, I have given more flexibility and how they get to the end product."

### **Empowering Students**

Many of the participants believed that students should be involved in making decisions about their education. With focus on personalized learning and learner-centeredness in the blended classroom, students



take on a different role than they might in other instructional models, especially those that rely heavily on teacher-centered pedagogy (Ertmer & Ottenbreit-Leftwich, 2010; Hancock et al. 2003; Knowlton, 2000; Krahenbuhl, 2016; Schiro, 2008; Weimer, 2003). One characteristic of the student role in the blended classroom is the ability, or opportunity, for students to be involved in making decisions about their education based on their interests, abilities, and needs. This is partially accounted for in how students choose to learn while taking time, place, pace, and path into consideration (Horn & Staker, 2015).

Julianne, a second-year middle school teacher from North Carolina, expressed “I do believe in personalized instruction for all students. I believe that each student deserves instruction that will benefit them, not what benefits the majority...it is important for students to have the opportunity to choose how they learn best and to have a choice.” Nancy touched on something she has experienced throughout her career as an agriculture teacher, not every student in the same class has the same interests. For her, blended teaching allows her students to find their interest and “voyage on their own learning journey” to “excavate” the knowledge for themselves. Nancy said “...everyone sitting in an ag business class doesn't have the same interests. Everyone sitting in an animal science class certainly doesn't have the same interest...blended learning allows them to go deep into a content area that they're interested in.” Relating her own experiences and her observations of students, Kathy recounted “there's too many classes where I walk in, and kids are just zombies, like not listening, but being obedient...I would love to see a world where students learn what they're passionate about.” She proposed that the way to help students overcome a zombified state is to teach them the value of learning by giving them options, helping them find the wonder and curiosity in learning, putting them in control of their education, and teaching them to advocate for themselves.

### **Reality Check**

Despite the participants discussing the importance they place on the personalization of instruction in their teaching practice, they also recognized the realities of teaching. After recalling the ways that she provides personalized instruction and learning opportunities for her students, Nancy admitted that “...it's not all roses and skipping through the meadow...but I believe the blended learning piece offers that personalization.” Julianne acknowledged the realities of her position and the substantial challenges she faces in delivering personalized instruction to each student. She said “as an agriculture teacher, we teach a lot of students during the school year...it makes personalized instruction hard. It is difficult to meet the needs of every single student.” With this Julianne added, “I have learned that I am not going to be the perfect teacher that personalizes every lesson to be individualized to each student sitting in my room, as that would be impossible.” Jeremy expressed “...I have five preps every day, and so, from a teacher's sanity standpoint I need everybody to kind of be in that same general area.” Kathy touched on the many responsibilities that agriculture teachers take on, like FFA advising, finance oversight, and farm management. “...the reality is I teach four preps, I'm an FFA advisor, I'm handling the accounts, and I've got a herd of sheep out on the farm...” Later in our conversation, Kathy lamented “...I would love to incorporate it every single day, but it's just not possible.”

### **Discussion**

The literature on teacher beliefs shows that all teachers hold beliefs (Bruggeman et al., 2021; Buehl & Beck 2014; Parajes, 1992), and evidence suggests that teachers' beliefs are influential in many aspects of decision-making related to classroom practice such as planning, selecting instructional strategies, and using technology or other tools (Bruggeman et al., 2021; Guerra & Wubbena, 2017; Pajares, 1992; Skott, 2015; Speer, 2005; Tondeur et al., 2017). In addition, Horn and Staker's (2015) definition of blended learning, along with additional literature on the topic, allowed us to identify that blended teaching is the purposeful integration of a formalized online and face-to-face instructional program that incorporates student choice and personalization. Student choice and personalization are achieved through an awareness

of how time, place, pace, and path impact student learning. Practices, such as those related to blended teaching and personalized learning are impacted by teacher beliefs.

#### Support for Personalized Instruction

The participants in this study expressed positive beliefs about the need and desire to incorporate student choice and personalization into their blended teaching practice. Teachers cited that their SBAE programs were uniquely situated to support personalized instruction because students build strong relationships with their teachers, presumably through years-long engagement in the program, and through an interest in helping students be successful along with empowering students to make choices about what they learn and how they demonstrate learning and mastery.

The participants were asked to relate their experiences with supporting personalized learning opportunities for their students through their blended teaching. Time, place, pace, and path were intentionally condensed into the term personalized learning as a way to establish a common understanding through the terms used in our conversations. In relation to time, only one participant in this study, Jeremy, mentioned time in the context of student learning. He noticed that when his students were absent, they often reviewed the materials on his learning management systems and came back to class prepared to move on. Although this is a legitimate connection to the role time plays in the blended classroom, time can and should include so much more than just using blended teaching as a tool to provide absent students access to learning materials. As we think about the role that time plays in the blended classroom and how it contributes to personalized learning, we should ask, how can student learning extend beyond the school hours for all students, not just students who are absent?

When Jeremy and Nancy mentioned practices that connected with place, they did so from the perspective of their role as a teacher and how they manage their classes with technology rather than how students were approaching learning in different spaces and places using blended teaching. Both Jeremy and Nancy saw blended teaching as a way for students to still be actively engaged in learning without a teacher in the classroom. This can be interpreted as the online component helps to mediate, or manage, teacher absences. Does Nancy make a valid point when she expressed her belief about her decentralized role as a teacher when she said “blended learning allows learning to go on without me here. You shouldn't have to have me here to learn in a blended learning situation”? Is blended teaching a solution, particularly for SBAE teachers who often miss many days of school for FFA events and other professional activities? Can blended teaching keep students engaged even when their agriculture teacher is not in the classroom? How might a teacher's beliefs about learner-centered instruction in connection with blended teaching and personalized learning impact their choice to account for place in their teaching? Jeremy and Nancy believed that it was their responsibility to help student learning continue in their absence. This was an important part of why both Jeremy and Nancy adopted blended teaching and personalized learning practices in their classrooms. When the participants mentioned experiences or practices related to pace, they used words such as “building on a foundation” before moving on, and students “self-assess” their needs and understanding. Jill believed that students should have some choice in how fast or slow they move through the content. However, she still maintained some control so students did not get too far ahead. Pace is an interesting element of personalized learning in that it may conflict with what teachers are often asked to do by some administrators and teacher educators, which is to create pacing guides and follow lesson plans as a way to routinely move through, or pace, curriculum and manage learning in their classrooms. Each of the participants casually mentioned state standards, state assessments, and other boxes that had to be checked showing that teachers taught what was required of them. We ask, how might state standards and state assessments impact personalized learning? Is the goal to check the box saying all the standards were taught so students were prepared to take a test? Or should the goal be to help students excavate knowledge that is relevant to them at a pace that creates understandings that last longer than their time in the classroom? A teacher's belief

about the goal of teaching and learning may impact their enthusiasm or reluctance to implement blended teaching and personalized learning.

Additionally, accounting for pace becomes critical for all learners as no two learners learn alike. There will always be some students who require additional time to master foundational skills and knowledge, while there will always be other students who move through the curriculum more quickly. Allowing all learners to build foundations and self-assess their learning needs becomes an important component of personalized learning in the blended classroom.

The participants referred to practices related to path more than any other means of engagement. This may indicate that of the four means of engagement, path is the easiest to enact in the classroom. Each participant genuinely believed that students should have the option to choose a learning path that suits their individual learning needs. However, despite making some minor references to choice boards, digital and physical notebooks, adjusting an assessment, or being cognizant of IEPs and 504 plans, the participants struggled to describe in depth how they accounted for student choice in their learning path and why it was important to for them, as teachers, to provide multiple paths of learning. Providing choice boards or altering assignments and assessments are arguably just good teaching practices. Although IEPs and 504 accommodations begin to account for a student's learning path and address their individual needs, how much choice does a student have in selecting the path? Is creating a classroom environment where each student receives a personalized education and has the autonomy to make choices about their learning even possible? How many courses lock students into learning, or demonstrating their learning, in ways that are in conflict with how they like to learn or how they learn best?

### **Empowering Students**

The participants also shared a belief that students should be involved in making decisions about their education and that blended teaching helped students make those decisions. As the role of the teacher is decentralized in learner-centered classrooms, students are empowered to take on more ownership of their learning (Horn & Staker, 2015, Knowlton, 2000). Although this is strongly connected to the means of engagement as part of a blended teaching system, the participants moved beyond time, place, pace, and path to make connections to student engagement. The agriculture teachers in this study saw student choice as a catalyst for engaged classroom participation, developing an intrinsic value for learning, discovering personal interests and goals, and sparking the desire to voyage on learning journeys. As learner-centered pedagogy is rooted in constructivism, students can be empowered, through blended teaching and personalized learning, to extend their learning journeys beyond the classroom to their communities and surrounding environments to construct their view of the world around them (Ertmer & Ottenbreit-Leftwich, 2010; Schiro, 2008).

Although the teachers in the study believed that empowering students to make decisions about their learning was important, might there be an element of control that could prevent some SBAE teachers from allowing students to personalize their learning? If a teacher provides instruction, then they know that students have been taught. However, if a teacher relinquishes some control to the student to personalize their learning, how can teachers know for sure that a student has interacted with the curriculum in a way that meets the demands of school, district, or state learning outcomes? Ultimately, how can teachers foster an environment that supports and empowers students to take charge of their learning journey?

### **Reality Check**

The participants in this study provided a variety of evidence that personalization was important to student learning and that blended teaching assisted in providing those personalized opportunities. Despite the participants professing a belief that a personalized learning environment for each student was important,

there remained some inconsistencies with these beliefs as our conversations progressed. Participants emphasized the realities of teaching within SBAE, their schools, and the present education system more broadly. For example, participants referenced the number of classes they taught, the number of students in their programs, advising FFA chapters, overseeing program finances, and managing school farms as hindrances to fully realizing personalized learning in their classrooms. Simply stated, the participants, through their experiences with blended teaching and personalized learning, found it extremely challenging to provide personalized learning opportunities for their students even though they believed it was important. It begs the question, might there be other reasons beyond those mentioned above that pose challenges to implementing blended teaching and personalized instruction, such as various pressures or expectations from administration, parents, or other stakeholders?

These reality checks demonstrate that context, in the case of these teachers, is a powerful influential factor when connecting teacher beliefs about personalized teaching to the feasibility of actual classroom practices. The contextual circumstances of many of the agriculture teachers in this study prohibited them from fully enacting their beliefs regarding personalized teaching in their classrooms. This coincides with what others have presented about the influence context has on teachers enacting their beliefs through their classroom practice (Ernest, 1989; Speer 2005; Wilson & Cooney, 2002). In addition, three of the participants – Julianne, Jeremy, and Kathy – mentioned that they did not have the time to personalize all the learning for all their students. Teachers making all the decisions regarding the what, how, where, and when of each student’s learning is differentiation, and although this is a good practice, doing this for hundreds of students would arguably be exhausting and impossible. If students were allowed to take some control of their learning instead of teachers arranging everything, could this alleviate some of the pressure from teachers and allow them to support personalized learning to a greater degree?

### **Conclusion, Recommendations, and Implications**

It is important to note that the beliefs discussed in this paper were drawn from comments made by the participants and the findings from this study are not necessarily transferrable to other SBAE teachers or programs. Despite this, it is essential to “seek practical and useful answers that can solve, or at least provide direction in addressing concrete problems” (Patton, 2015, p. 243). Drawing on the findings previously presented, we provide recommendations that strive to be practical, provide useful answers, and offer direction for future research and practice.

Speer (2015) proposes that often there is a distinction made between professed beliefs, (what teachers say they believe) and attributed beliefs (what is reflected in their practice). However, the dichotomization of professed beliefs and attributed beliefs is complex, and it is not wholly accurate to categorize beliefs as such due to the many factors that could contribute to perceived inconsistencies between beliefs and practice (Speer, 2005). Therefore, to understand the factors that may contribute to perceived inconsistencies between agriculture teachers' beliefs and practices related to blended teaching, we recommend that researchers further engage with blended teaching practitioners through observational research, interviews, focus groups, and secondary data analysis of documents and artifacts related to blended teaching practice. This could lead to a greater understanding of the impact of agriculture teachers' beliefs on their blended teaching practice, along with the factors that may lead to inconsistencies. The questions below could guide future research of SBAE teachers' beliefs and blended teaching practices:

- How are SBAE teachers' beliefs aligned, or misaligned, with their classroom blended teaching practices?
- What factors play a significant role in the alignment or misalignment of SBAE teachers' beliefs and their classroom blended teaching practices?

Furthermore, building on the findings presented in this research, it becomes critical to examine the way contextual factors influence agriculture teachers' ability to implement blended teaching and

personalized learning in SBAE classrooms. This study did not explicitly explore the contextual influences that impact personalized learning in blended classrooms. However, all the participants in this study mentioned contextual factors that they believe assisted or prevented them from implementing blended teaching and personalized learning in their respective SBAE classrooms. Ernest (1989) attributed contextual factors as a potential cause of inconsistency between beliefs and practices and based on the experiences of the participants in this study, there were, at times, inconsistencies in their beliefs about personalized learning and the reality of its implementation. Although further qualitative research could illuminate the nuances of context related to the adoption of blended teaching and personalized learning in SBAE, quantitative research methods, such as surveys, could potentially increase participation from SBAE teachers that represent a wider range of career stages, geographic locations, and program sizes. This leads us to ask the following questions:

- How does context impact SBAE teachers' ability to adopt and implement blended teaching and personalized learning?
- What roles do individuals or groups within the school community (i.e., administrators, teachers, students, parents), in addition to school policy and infrastructure, play in SBAE teachers' adoption and implementation of blended teaching and personalized learning?

Although this research is exploratory in nature, we argue that it provides significant contributions to the broader research on blended teaching and personalized learning while providing a point of departure for further research and investigation into such topics in school-based agricultural education. Additionally, this research provides a valuable and timely contribution to the reimagining of education in a post-pandemic world where computer-mediated teaching and learning sought to address students' learning needs during prolonged school closures. We hope that this study will encourage educators, both those broadly involved in education and those engaged in SBAE, to participate in critical and inquisitive conversations, as well as inspire others to explore, research, and implement blended teaching and personalized learning.

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