

Bilingual In-Service Teachers' Perspectives of an Online Dual Language Certification Program

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Abstract

School districts across the U.S. are grappling with a burgeoning demand for K-12 dual language bilingual education (DLBE) programs. Although a rich body of research underscores the academic benefits of DLBE programs for both minoritized and mainstream students (Genesee & Lindholm-Leary, 2021), few studies have explored the preparation of DLBE teachers (Caldas, 2021). Colleges of Education typically do not offer DLBE programs to capacitate DLBE teachers, and among those that do, few offer online programs (Garza et al., 2020). During the 2019-2020 academic year, the College of Education at Oregon State University (OSU) initiated an online DLBE teacher certification program that offered courses bilingually in Spanish and English. With only a handful of DLBE teacher preparation programs across the US, a dearth of literature exists about courses designed to prepare DLBE teachers, and even less is known about the effectiveness of these DLBE teacher preparation programs when offered online. Data for this qualitative study were collected using in-depth interviews with twelve in-service bilingual teachers who completed OSU's online DLBE certification program. We present key findings related to participants' experiences with platform navigation, collegial support groups, learning connections, online communication, and the use of Canvas and bilingual content in their own K-12 DLBE classrooms. Data revealed components of the program that succeeded in developing DLBE teachers' instructional skills and highlighted opportunities for program revisions. Guided by participant recommendations, this study informs the field of bilingual teacher education in the development of online DLBE courses and certification programs.

Introduction

Dual language bilingual education (DLBE) is considered a strong model of bilingual education because it intends for learners to obtain the skills

of bilingualism, biliteracy, and biculturalism (Baker, 2011). Furthermore, DLBE draws from both languages for instruction and promotes high levels of language proficiency and academic achievement (Lindholm-Leary, 2001), resulting in superior academic outcomes for students irrespective of their home language(s) (Lindholm-Leary & Hernandez, 2011; Thomas & Collier, 2017). DLBE programs also have the potential to create learning contexts where students of different linguistic and cultural backgrounds learn to respect each other as valued partners in the learning process, particularly when teachers have sufficient expertise to leverage the languages and cultures of their students (Thomas & Collier, 2019). Although the academic benefits of K-12 learners enrolled in DLBE programs are well established (see Thomas & Collier, 2019), less is known about the professional development DLBE teachers access to cultivate their expertise in the field.

Even in states that require DLBE certification among DLBE teachers, college and university-based teacher education programs often do not offer DLBE teacher preparation programs; even fewer offer DLBE teacher preparation courses online (Garza et al., 2020). In our review of literature, only one study documented a fully online college-based DLBE teacher preparation program (Garza et al., 2020)¹. In the context of bilingual teacher preparation more generally, research conducted by Gaines and colleagues (2018) described the benefits of using computer mediated discussions to prepare pre-service teachers in becoming bilingual educators. By engaging in critical listening and storytelling in computer-mediated discussions, pre-service teachers practiced critical reflection of their bilingual identities and forged meaningful interpersonal relationships with each other, thus increasing the possibility of realizing their bilingual teacher identities.

¹ In 2018, San Diego State University established the first online bilingual teacher credentialing program in the U.S. (Garza et al., 2020).

While a dearth of research in online DLBE teacher preparation highlights the need for further exploration, insights can be gleaned from research conducted in a related field, online Teachers of English for Speakers of Other Languages (TESOL) programs, which prepare teachers to work with English learners (ELs) enrolled in courses where the content is taught in English. In a study of ESOL pre-service teachers, Guler (2020), found that coursework in the online ESOL program could have benefitted from more mentor support; moreover, the coursework had not sufficiently prepared participants to integrate language instruction in their individual content areas. In a separate study of pre-service teachers enrolled in an online ESOL teacher preparation course, pre-service teachers took on a shared responsibility with their teacher educators and mentor teachers, as they exchanged new knowledge about digital tools with each other (Durham, 2023). These studies suggest that particular attention to mentoring and classroom application is merited in the design and research of DLBE online programs, and that participants can be co-developers of digital expertise alongside their instructors in online contexts.

As students become more adept with technology, however, a challenge for universities will be to offer courses that meet the technological needs of a new generation of learners (Nuss, 2021). To that end, a number of studies have begun to consider the use of online courses to prepare teachers to design and deliver effective instruction for ELs (Daniel et al., 2016). This study contributes to an emerging line of inquiry that highlights the possible benefits of teaching online courses bilingually at the university level.

Study Aims

School districts across the U.S. are grappling with a burgeoning demand for K-12 DLBE programs. The demand for DLBE has boomed because K-12 students enrolled in DLBE programs for several years often perform as well as, or better than, their peers in core academic content areas by late elementary school (Galvan, 2022). Although a rich

body of research underscores the academic benefits of DLBE programs for both minoritized and mainstream students (Genesee, & Lindholm-Leary, 2021; Lindholm-Leary, 2001; Thomas & Collier, 2017; Watzinger-Tharp, Swenson, & Mayne, 2016), few studies have explored the preparation of DLBE teachers (Caldas, 2021; Mojica & Briseño, 2019). The national shortage of bilingual teachers is a key impediment to establishing and sustaining DLBE programs (Amanti, 2019; Lachance, 2017). Moreover, colleges of education typically do not offer DLBE programs to capacitate DLBE teachers, and among those that do, few offer online programs (Garza et al., 2020).

Aligned with the strategic goals of the College of Education at OSU to advance diversity, equity, inclusion, and justice, faculty in the English for Speakers of Other Languages/Dual Language (ESOL/DL) program have been proactive in recruiting and capacitating bilingual teachers. During the 2019-2020 academic year, the ESOL/DL program faculty initiated an online DLBE teacher certification program that centered bilingualism by offering courses taught bilingually in Spanish and English. The ESOL/DL faculty purposefully designed an online program for K-12 bilingual teachers to more easily access professional development in Oregon and beyond.

Yet, it is often challenging to keep up with the fast-paced nature of technological innovation in terms of university learning platforms, K-12 classroom technologies used in schools, and ongoing social media and digital innovations more generally. Moreover, the pandemic caused a frenzied transition to online instruction across K-12 schools, which accelerated the need for teacher educators to incorporate effective online teaching techniques into our own instruction (Nuss, 2021). Course designers, instructors, and student internship supervisors of the ESOL/DL program worked to incorporate effective teaching techniques in online courses for in-service DLBE teachers to then implement these practices in their own classrooms. Guided by OSU's commitment to offer accessible, transformative

education, we investigated if completers of the DLBE program considered the online teaching tools used throughout the DLBE program useful for their own classrooms. Additionally, we explored whether or not the way technology was modeled across courses prepared bilingual teachers to use technology in their own DLBE classrooms, thereby benefiting K-12 students.

The purpose of this study was twofold. The first was to inform programmatic revisions in the DLBE certification program. The second was to offer other DLBE teacher educators insights on how to create or update their own online DLBE certification programs. This study was guided by the following research question: *What insights might bilingual in-service teachers offer teacher educators looking to develop or improve online DLBE certification programs?*

Methods

This qualitative study drew upon data collected through in-depth semi-structured interviews (Kvale & Brinkmann, 2009) with bilingual in-service teachers who completed an online DLBE certification program. The DLBE certification program was among a handful of teacher preparation programs to center bilingualism and model the use of both English and Spanish for instruction in an online university setting (Garza et al., 2020).

DLBE Certification Program

The online DLBE program, which recruited teachers from across the state who worked in very different DLBE contexts, matriculated its first cohort during the 2018-2019 academic year. The second year the program was offered (2019-2020) instructors modified assignments in response to the heightened demands placed on bilingual teachers and bilingual teacher educators during the COVID-19 pandemic. Given the evaluative nature of this study, we collected data from the third and fourth cohorts (2020-2021 and 2021-2022), in part because the ESOL/DL program aims to review coursework every three years and in part because instructors had begun to restore course

assignments to their original design, although some pandemic-related changes remained, such as the option to complete some project assignments in groups. For example, although the learning material remained the same, students were given the option to work in groups and to respond to one out of three questions, instead of two out of three questions per module discussion. The program, as experienced by the third and fourth cohorts aligns with the initial design. The sequence of courses for the DLBE certification included three that were taught bilingually: Biliteracy Instruction (ED 570), Multilingual Linguistics (ED 571), and Dual Language Internship (ED 510). These courses for the DLBE certificate were geared primarily toward licensed K-12 bilingual teachers across Oregon and were only offered online. Within this context, this study focused on participants' experiences and perceptions of the three online courses that were taught bilingually (ED 570, ED 571, ED 510).

Research Team

The research team included two tenure-line faculty (Soria and Amanda), an ESOL/DL program instructor (Nelly), a doctoral student (Vanessa), and a recent doctoral graduate (Colin); collectively, the research team brought years of research and experiential knowledge in the field of bilingual teacher education to the analysis of data.

Participants

Participant selection for this pilot study was criterion-based (deMarrais, 2004). In order to be included in this study, all participants met the following criteria: (a) completed the online DLBE certification program; (b) taught in a DLBE K-12 program in Oregon; (c) had access to technology as a teaching tool in their own classrooms; and (d) self-identified as Spanish-English bilingual. The twelve participants in the study brought a range of teaching experience, from a few years in DLBE classrooms to over a decade for one individual. To better understand the experiences and perceptions of bilingual teachers from a variety of backgrounds, participants included members from

each of three commonly represented groups among bilingual educators in the US. These groups included bilingual teachers who had: (a) learned Spanish in an academic setting; (b) learned English in an academic setting; or (c) had access to both Spanish and English throughout their youth with a range of access to academic Spanish and English. To protect participants' anonymity, pseudonyms are used for all names and places.

Data Collection

At the end of Spring term 2022, potential participants were invited to take part in the study. Colin, who previously served as a graduate assistant for the program but had no direct instructional contact with members of the third and fourth cohort, invited program completers of these two cohorts to participate in the study. Potential participants received an email invitation with details of the study and were encouraged to reply if they were interested in participating. Twelve participants responded and Colin followed-up via email to answer questions and to schedule the interviews.

Participants engaged in one virtual semi-structured in-depth interview with Colin, who had ample experience interviewing bilingual participants. The interviews focused on participants' experiences with navigating the online courses as well as navigating their own shifting language ideologies as they learned more about DLBE in the program (see Appendix A for the interview guide). Interviews were conducted in the language of each participant's choosing (Spanish, English, or a combination of both). Interviews lasted between 60 and 90 minutes each and took place over Zoom with audio and video enabled. All interviews were conducted during the Summer term of 2022, once all grades had been posted for the final course in the DLBE online certification sequence. All participants received a \$100 incentive for completing the interview.

Data Analysis

The research team then engaged in phronetic iterative data analysis (Tracy, 2013), a qualitative

method of data analysis that alternates between the emic, data derived from participants' point of view, and the etic, existing theories (Tracy & Hinrichs, 2017). We rooted our analysis in the guiding questions we formulated based on past literature. Immediately after each interview, audio files were uploaded to an automated transcription service (Sonix) and transcribed within a 24-hour window. Data analysis began with the generation of analytic memos written by Colin as he reflected after the completion of each interview and Vanessa as she cleaned and de-identified the transcriptions generated by the automated transcription service. Analytical memos document initial insights and note connections to concepts, themes, and events that inform the final written analysis and interpretation (Rubin & Rubin, 2005). Transcribed data were stored both in a secure digital folder and uploaded to a data management system (Dedoose) for group analysis. Prior to analyzing the data in Dedoose, Soria, Colin, Vanessa, and Nelly independently read and coded three transcripts as a basis for comparison, and wrote analytic memos based on their readings. The research team then met to discuss and agree to the coding categories and descriptions of those categories before recoding the corpus (see Appendix B for coding categories).

Upon coding the initial three transcripts and defining a codebook, the research team decided to code the remaining nine transcripts in pairs to ensure a shared understanding of the codes and their application to the data, and to encourage dialogue among the research team (O'Conner & Joffe, 2020). Amanda was present at all research team meetings. She shared her expert knowledge in bilingual education research, engaged in dialogue, and stepped in for team members when they were unable to attend meetings (e.g., absent members would post their codes and analytic memos in Dedoose and Amanda would read the absent member's codes and analytic notes during research team meetings to maintain the momentum of the analysis). Employing multiple coders throughout the entire process of data

analysis also provided opportunities to identify and correct possible weaknesses like overlapping code meanings or imprecise code definitions (MacPhail et al., 2016). The research team met routinely to discuss themes in the data and highlights from analytic memos.

After the research team completed first and second-level coding together, Soria engaged in hierarchical coding, similar to axial coding (Charmaz, 2006; Hahn, 2008). She systematically assembled codes into hierarchical categories that make conceptual sense (Tracy & Hinrichs, 2017). Focused on the guiding research question for this paper (*What insights might bilingual in-service teachers offer teacher educators looking to develop or improve online DLBE certification programs?*), Soria studied data from codes grouped under the “Technology Use in Program & K-12 Classroom” hierarchical code as she engaged in writing the findings (see Table 1 in Appendix B).

Findings

Participants’ reflections both highlighted areas of the online program that succeeded in developing their skills as DLBE teachers and revealed opportunities for program revisions. We present the 12 participants’ insights relative to the codes in the hierarchical code “Technology Use in Program & K-12 Classroom”. These codes included: (a) Online Program Navigation, (b) Program Instructor Technology Use, and (c) Program to K-12 Tech Transfer.

Online Program Navigation

Participants’ strategies for online program navigation included intently studying the platform and forming support groups with their online colleagues, as described below.

Platform Navigation

Regarding platform navigation, participants appreciated the design of the online DLBE courses. Many mentioned the benefits of Canvas tutorial videos and multimodal assignments—both developed by their university instructors—to scaffold their use of the Canvas platform.

However, participants also offered differing recommendations for module access.

Module Design

DLBE Canvas courses were organized by modules, whereby, each module presented a theme from the course learning outcomes. William compared the layout to a calendar, “It’s like a calendar. You start at the beginning, and it goes module and module.” Sofia Monserrat recalled, “You just read it and clicked. It was pretty self-explanatory.” Despite the ease the modules offered in accessing course materials, participants responded differently when they opened the course on the first day of class and all modules were published.

Across the three DLBE courses (i.e., Biliteracy Instruction, Multilingual Linguistics, and DLBE Internship), some instructors published all the modules at once, while others published modules one week in advance. When asked if they preferred weekly or complete access to materials, participants’ responses varied. Some preferred weekly access to modules, while others conveyed the benefits of having access to all modules from the time the class was posted at the beginning of the term. William, who maintained the latter position, considered the Canvas site an extension of the syllabus. Whereas the syllabus listed course objectives and highlighted course assignments, the Canvas site detailed course assignments, project deadlines, and assessment rubrics.

Multimodal Assignments

Multimodal options motivated most participants to not only complete assignments, but to engage with and learn from their classmates’ online work. Liz was amazed by the multiple ways she and her peers could demonstrate their thinking, noting, “The fact that it doesn’t just have to be in writing, you know, sometimes...it was a video, sometimes it was just sound...that was beautiful.” Despite the benefits of posting a video response, a number of participants found that the process of creating videos in Canvas was time-consuming. However, they appreciated the user-oriented videos instructors had created and posted throughout the

DLBE courses to facilitate participants' ability to complete and submit their assignments in Canvas. Recalling her experiences with posting her video responses online, Sofia Monserrat shared, "I did not know how to attach a video or film a video on there [Canvas]...it's just not the most straightforward [process] as you would think in Canvas. It's like, 'Just let me record a video!'" Although learning the technology to produce these creative works took time, many participants considered the learning curve an investment that saved them time once they mastered the technology. In William's case, posting a video response in lieu of a written response necessitated learning a new skill—using the Canvas camera system. Once he grasped the process, he was able to post a video response more quickly than a written response. He explained that it took him approximately 30 minutes to type a response, whereas it would take him closer to 10 minutes to record a response.

Canvas provided participants with opportunities to complete assignments using different modalities. Furthermore, once participants mastered the platform, they were able to express themselves in ways that writing-only assignments may not have fostered.

Collegial Support Groups

Participants described the benefits of building community with classmates as multifold; they provided navigational, educational, and emotional support, though, they often provided a mixture of these.

Collegial Support Groups – Navigational

A number of participants created and sustained support groups with classmates throughout the program for navigational support. For example, when classes required students to work in small groups Fátima and a few colleagues asked to be paired together. Fatima and her peers collaborated even beyond the class by creating a WhatsApp chat group. When they had to submit an assignment as a PDF, Fatima's group guided her through the process of converting a Google

document to a PDF. "You know, PDFs, all of that thing that for a teacher like me that have been teaching for 15 years, like technology is just like a new thing. It was like, 'Oh my gosh, how am I supposed to do this?' Based on her own experience, Fátima underscored the benefits of creating connections with classmates, adding, "It doesn't matter from where...we were constantly chatting."

Collegial Support Groups – Educational

Beyond helping each other navigate the program, participants underscored the educational benefits of collegial support groups. In these groups, participants delved into critical conversations to study course topics and the implementation of pedagogical practices mentioned in course texts and recommended by classmates. Liz, for example, would often debrief with her colleagues before posting her responses online "to kind of affirm our understanding of the readings." Samantha navigated concepts with a colleague from her school who was also in the program. Her colleague, who was a TOSA (Teacher on Special Assignment) had been a DLBE educator for years and worked closely with Samantha throughout the program because she did not have her own classroom and needed access to students in order to complete assignments that required engagement with K-12 DLBE students. Samantha appreciated her colleague's perspective and the reciprocity of their partnership.

Collegial Support Groups – Emotional

Study group members often found solace in each other when they felt overwhelmed. Sofia Monserrat argued, "It was really valuable having somebody else working on the assignments alongside me." Angelica considered the study group "crucial" for completing the program and recalled times when she wanted to give up. She shared, "Many times I said, 'This is bullshit. I want to quit!'" In these moments of frustration, her study group offered the encouragement she needed to persevere. Over time, study group membership evolved into friendship. Angelica

described an instance in which one of her study group colleagues became sick and she delivered food to their house. Likewise, when she was sick, they delivered food to her school. “We went beyond the classroom, you know what I mean? ...We support each other...You don't get that in any class. So that is special to me. So that relationship, it will last forever.” At the end of the program, they all met at a group member’s home and toasted their accomplishments, “We did it!” Echoing many participants who attributed their completion of the program to their membership in a collegial study group. It is notable that teachers crossed virtual and physical boundaries to extend their support for each other. Although such actions are not possible when participants in online programs are geographically distant from each other, this phenomenon speaks to the strength of collegial communities that were initially developed online.

Collegial support groups were often created to better understand the platform and/or the course material; however, over time, these groups transitioned into close-knit support systems that led to the success of many participants in the DLBE program.

Program Instructor Technology Use

Participants described the benefits and setbacks in program instructors’ use of technology. They highlighted the learning connections they made both when they watched content-based videos created by their instructors and they interacted with each other’s posts online. Participants also spoke about instructors’ use of online tools for communication—citing approaches that were conducive to learning and some glitches that led to communication issues.

Learning Connections

Participants made learning connections across assignments by watching “Café-Style” videos. Some instructors used these videos at the start of a module to scaffold interactions with coursemates about online literacy assignments.

“Café-Style” Videos

In addition to the tutorial videos DLBE instructors created to scaffold the navigation of Canvas, they also produced “café-style” pre-recorded videos that provided a glance at the learning objectives for each module. In these “cafe-style” videos, university Ecampus staff professionally recorded co-instructors discussing their own personal and professional experiences with bilingualism and biliteracy. Instructors semi-scripted each conversation to ensure they included themes from the weekly readings, and posted a video at the beginning of each module over the course of the ten-week term. Samantha described these module introduction videos as a “quick snippet to get into it.” Liz found the pre-recorded videos with transcripts useful, noting, “if you were a more visual person, you're going to gravitate towards those videos and follow those. If you're a print person, then you could easily follow the written part as well. So that was really helpful.” Marcos described the module introduction videos as, “Moreso just the philosophy of language...the discussions that they had was really enriching. I just wish I could go back and rewatch those...it was just good. Good discussions and just good things to think about.”

Engaged Literacy Assignments

Throughout the course, participants co-constructed knowledge as they read, listened and/or watched each other's work and then wrote or recorded their own responses while synthesizing assigned materials with the creative work of their peers. Valeria Isabel, for example, appreciated these engaged literacy assignments because she learned about her colleagues’ experiences, the strategies they applied as DLBE educators, and the shifts in their perspectives as she read their responses online. Sofia Monserrat acknowledged that reading her peer’s reading reflections facilitated her meaning-making of the text. She explained,

I found myself going back to people's discussion posts and being like, “Oh, I

remember this quote!”...So I was able to use that in my assignment...just like pulling quotes and pulling ideas from my classmates' work and applying it into my own like coursework as well.

Fátima echoed Sofia Monserrat and called attention to the authentic dialogue the discussion boards engendered and the mutual benefits of sharing reading reflections with her coursemates:

It was interesting to see what people were thinking and what they were reading, because we were reading the same text, but...we had different perspectives. We'll pick different parts of the text...I was like, “Oh, I didn't think about that” or, “Oh, that's a nice point.” Or like, “Oh, that makes sense”...The board really sort of helped me to better understand the content of the book or the different perspectives.

Regarding authentic dialogue, Samantha recalled that at least one of the module discussion questions was open-ended (e.g., “Describe an argument made by an author with which you agreed. Explain why.”) She explained that these open-ended questions gave her the opportunity to pose questions to her peers and in doing so, someone might share their experiences at their own school in their response. These authentic exchanges enriched Samantha's learning.

Online Communication

Instructors drew from a wide range of technological tools to communicate with students. Participants recalled instructors' use of text messages, email responses, weekly announcements, synchronous Zoom sessions, recorded asynchronous walk-throughs, and Canvas-based feedback to communicate with them. Nevertheless, participants identified communication gaps with instructors that were often triggered by technological glitches.

Tech-based Communication

Virtual office hours and synchronous weekly meetings were the most frequently mentioned forms of tech-based instructor-led communication across participants. Virtual office hours provided opportunities for one-on-one interactions and fostered teacher-student connections in this online program. Andres revealed that the virtual office hours were key to his ability to use the online platform, noting, “to me, technology is not very friendly.” Ray recalled an instructor holding informal weekly Zoom sessions for students to “hop in and ask questions.” Marcos remarked, “Tech support was great!” He appreciated the “live office hours” to review the user interface for Taskstream (a teaching portfolio management program) because it was new to him and to many of his coursemates. Nevertheless, he did recommend prerecorded videos for students who “need the actual video to know exactly where to click.”

Many participants highlighted the benefits of the optional synchronous Zoom meetings held during Dual Language Internship (ED 510). For Angelica, these synchronous meetings reflected the instructor's attentiveness to her students. She characterized the instructor as someone who “understood how difficult it was for some people to navigate Canvas...Even though we are grown up people, sometimes we don't even know where to find the information...she didn't assume that we already knew how...and she took it seriously.” In line with Angelica's perspective, Sofia Monserrat also appreciated these optional meetings, she recalled, “I was able to connect there.” Salome valued the guidance provided by the course instructor and highlighted the benefits of having an “Educational Sherpa” during the internship, “It was really helpful to have someone that was able to guide you.”

Communication Ebbs & Flows

Despite the intentional support offered throughout the internship, communication ebbed and flowed throughout the program. Participants'

experiences described the challenges of running a large Ecampus program with multiple instructors, which included Canvas sites that had not been rolled over from term to term correctly, unclear presence of instructors, and unexplainable glitches. In one of his courses, Ray noticed that the instructor had overlooked updating certain sections. The “About Me” section (where the instructor describes themselves) presented a different instructor than the one on record for the term. Similarly, Valeria Isabel recalled that sometimes the videos used to introduce each module were recordings of instructors who helped to develop the course, but perhaps not the instructor teaching the class. “I mean, they were on the right topic, but ‘I don't know who you are, I don't know why you're on my video.’” Other times, unexplainable technological glitches led to communication mishaps. In Samantha’s case, she recalled that upon completing her fall course, she received a slew of emails in Canvas that she and her course-mates were meant to receive throughout the course. These emails explained the modifications instructors had made to assignments to ease educator stress due to COVID-19. She remembered reading the pre-dated emails from instructors and thinking, “Oh man! This would have been probably useful to have going through each of these weeks!”

Online communication required instructors to be aware of students’ technological literacy skills and offer enterprising tech-based tutorials to sustain communication. Additionally, participants underscored the communicative benefits provided by a course that had been carefully reviewed and updated by the instructor of record prior to publication for student use each term.

Program to K-12 Classroom Technology Transfer

University instructors and K-12 educators navigated COVID-19 mandates—which vacillated between in-person and remote instruction—well into academic year 2020-2021. Addedly, the complete transition to in-person instruction varied

across school districts. Participants remarked that instructors’ online practices were mostly transferable when they were required to teach their K-12 DLBE courses remotely. Once COVID-19 mandates eased, participants indicated they were unable to incorporate as many of the online activities in their own teaching as modeled by their DLBE instructors. Nevertheless, they were strategic in the activities they did incorporate, and embedded multimodal activities into their teaching repertoire to scaffold the development of their DLBE students’ biliteracy skills and technology skills.

Technology for Multimodal Language Use

Participants used Canvas to engage their K-12 students’ multimodal linguistic repertoires. Ray, for example, used Canvas to record DLBE students’ oral responses in order to measure their language proficiency. He also employed the immersive reader option (a tool in Canvas that provides accessibility features and reading options, such as text-to-speech and font size adjustments) to scaffold their reading and listening comprehension skills. Liz was purposeful in her use of Canvas tools with her students as “their ability to use their full linguistic repertoire, use video, writing, sound” resulted in “a lot deeper, a lot higher quality” work by her DLBE students. She added, “I just wanted their thinking, their thoughts in whatever way I could understand it. And it really did make a difference.” Beyond adopting Canvas to develop their students’ skills and foster authentic dialogue, participants used the learning platform to organize and present learning materials.

Multimodal Technology for Learning

Participants whose districts had adopted or were in the process of adopting Canvas for instructional purposes found the use of Canvas in their university courses especially beneficial. Marvin, who first experienced Canvas in the online DLBE program, explained that his school district had switched from Google Classroom to Canvas. Positioned to navigate the online learning management system as both a university student

and elementary school teacher, he was excited to implement his emerging Canvas skills in his own classroom. Similar to Marvin, Salome named Canvas attributes that would be as beneficial to her students as they were for her. “Estaba todo preparado para toda la semana² and that was useful. And I feel like that would be really useful for high schoolers that are like, ‘What am I doing this week?’” Salome’s intentions were to apply the same Canvas structures used in her DLBE courses to her high school courses. However, because she would need to make these changes on her own, the process seemed daunting. Additionally, although participants acknowledged the advantages of using Canvas to support student learning, many noted that it would take time to fully transfer their own K-12 DLBE curricula to an online learning platform with the detail presented in their university courses.

By experiencing Canvas as students in the online DLBE certification program, participants more easily related with their K-12 DLBE students; moreover, the online tasks modeled by the DLBE instructors became more applicable to their own teaching contexts as their schools transitioned to using the same learning platform.

Summary of Findings and Implications

This study explored bilingual in-service teachers’ experiences with an online and bilingual DLBE certification program with the aim of informing programmatic revisions and offering insights to other DLBE teacher educators who plan to create or update their own programs. Interviews with 12 bilingual in-service teachers who had completed our online DLBE program were analyzed with a phronetic iterative data approach (Tracy, 2013) to understand both their experiences as well as how they applied their lessons to their K-12 classrooms.

Participant responses provided program faculty instructive feedback for strengthening a program that already had maximum enrollment, drew

teachers from across the state, and tailored its curricula for a multilingual/multicultural audience. Findings revealed effective practices employed by program instructors and made suggestions for ways to further improve the program in the following areas: (a) Online Program Navigation, (b) Program Instructor Technology Use, and (c) Program to K-12 Tech Transfer.

Participants found the module design effective and easy to navigate, particularly with the scaffolding provided by embedded Canvas-tutorial videos created by program instructors. Participants also noted that these Canvas-tutorial videos were useful in completing and uploading multimodal assignments, which made coursework more engaging. Participants found “café-style” videos effective module introductions, as instructors modeled fluid language use, and connected course topics to their own lived experience. Moreover, participants noted that learning about their course-mates’ experiences as biliterate bilingual educators provided beneficial learning resources that enriched the assigned readings and gave them ideas for new classroom practices and new ways of understanding their colleagues and school communities.

The analysis showed that the program instructors’ technology use impacted the course instruction and communication among course-mates. Online communication proved most effective when program instructors scaffolded participants’ technological literacy skills (e.g., optional weekly synchronous meetings with instructors) and updated courses prior to publishing them each term. Beyond the support offered by instructors, participants created their own collegial support groups for navigational, educational, and emotional assistance. Members of collegial support groups became close-knit as participants worked through the program. In describing the bond between herself and members of her collegial support group, Angelica noted, “We went

² “Everything was prepared for the whole week.”

beyond the classroom...that relationship, it will last forever.”

By focusing on participants’ experiences and perceptions of the program’s online learning modality and how they might transfer technology skills to their classrooms, we learned that technology could as easily support students in creative expression as it could frustrate students and become a barrier to learning. According to participants’ reflections, this was also true of technology use in their classrooms. For this reason, understanding the use of Canvas as an instructional tool was not only necessary to improve instruction at the university level, but we learned that participants were acquiring technological literacy in our classes as much as they were biliteracy and pedagogical skills. By using Canvas with her K-12 DLBE students, Liz led them “to use their full linguistic repertoire” and to produce “a lot deeper, a lot higher quality” work. This in-service teacher was among several who actively transferred technology from university to K-12 contexts and repurposed it in ways that were consistent with the intentions of our university bilingual curriculum and approach. This suggests that pedagogical modeling in online university teacher education coursework can have a powerful influence on K-12 classroom practice.

With only a handful of DLBE teacher preparation programs across the US, little has been documented about programs designed to prepare DLBE teachers broadly, and even less is known about the effectiveness of these DLBE teacher preparation programs when offered online. Beyond informing improvements to our program, this study contributes to the field of bilingual teacher education by offering other DLBE teacher educators suggestions on how to create or update their own online certification programs. These include:

1. Utilize and model multimodal bilingual tasks, which can support participants’ course learning and provide powerful pedagogical suggestions for their K-12 classrooms.

2. Purposefully build and encourage collegial connections through course discussions as well as more open-ended opportunities like study groups. These can benefit students academically, logistically, and emotionally.
3. Recognize that technological challenges and communication lapses are almost inevitable: proactively set up supports for participants so they know how to get help with technology, and plan for ongoing communication throughout the term so that students feel their instructors are available and ready to help.

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Appendix A

Interview Questions for Online Dual Language Certification Completers

Navigating an Online Course

1. Was this your first experience taking a university course online? Please explain.
2. What motivated you to enroll in the online DLBE certificate program?
3. Think about the group activities you completed during your courses. Describe a good experience with group work. What recommendations would you offer to improve group work online?
4. Consider communication between yourself and your instructors, and yourself and your peers throughout the program.
 - Which online tools do you consider facilitated communication with your instructors?
 - Which online tools do you consider facilitated communication with your peers?
 - What recommendations would you offer to improve communication during online courses?
5. Would a weekly information session or meeting improve online courses? Please explain.
6. Had the courses been offered synchronously, would you have enrolled in the program? Why or why not? Please explain.
7. In what ways did you incorporate technology into your own teaching repertoire before you enrolled in the online dual language certification program? Please share examples.
8. Now that you've completed the online dual language certification program, will the ways in which you incorporate technology into your own teaching change? Please explain.
9. Were there any online practices and/or tools modeled by instructors in these online courses that you plan to apply in your classroom? Please explain, and provide an example, if appropriate.

Navigating Language Ideologies

10. Before enrolling in the online DLBE certification program, had you taken any university courses that were taught bilingually? Please explain.
11. Please review the list of online assignments from the three online dual language courses you completed for your program. Which assignment(s)/experience(s) do you consider to have either changed or reaffirmed your understanding of bilingualism and biliteracy? Please explain and provide examples.
12. Did your experience in learning bilingually at the university level affect how you approach language use in your own DLBE classroom? Please explain, and provide an example, if appropriate.
13. What suggestions would you offer instructors for improving the online DLBE program?

Appendix B

Table 1. Coding Hierarchy

Hierarchical Code	Code	Code Description
Backgrounds & Motivations	Prior Schooling Experiences	Refers to participants' schooling experiences prior to enrolling in DLCP (in US or abroad).
	Prior Teaching Background	Includes description of teaching background prior to enrolling in DLCP. Includes formal education. Includes experience in the classroom.
	Prior Language Histories	Broadly includes participants' experiences with language learning and acquisition prior to enrolling in DLCP; how they came to bilingualism and biliteracy
	Motivations for Becoming DLBE Teacher	Refers to motivations and reasons that participants became DLBE teachers.
	Motivations for Enrolling in Program	Includes participants motivations for enrolling in the DLCP. Also includes incentives (e.g., scholarships, good for resume, professional development in Spanish, etc.)
Beliefs and Ideologies	Role of DLBE Teachers	How participants see their role as DL teachers, how they see their role in the classroom, community, how they view their identity as a DL teacher.
	Language Ideologies	References to DL teachers' language ideologies. Includes understandings of bilingualism, biliteracy, talk about shift in thinking during program, past or current ideologies. Includes description of language use in the classroom. Includes how teacher ideologies guide lesson planning.
	University-Level Bilingual Instruction	Includes participants' perceptions of the benefits and challenges of taking a university level class bilingually. Includes mention of past experiences with bilingual instruction in their own university learning. Includes how it felt to take a class bilingually.
Technology Use in Program & K-12 Classrooms	Online Program Navigation	Includes practices participants found helpful in navigating an online course. Includes practices participants found obstructive to learning online. Includes suggestions made by participants to facilitate online instruction.
	Program Instructor Technology Use	Includes specific mention of the ways instructors used technology. Includes instructor use of technology for instruction and to communicate with students.
	Program to K-12 Classroom Tech Transfer	Includes descriptions of how participants transferred technology use modeled by DLCP instructors to their own classrooms. Includes the use of audio, videos, podcasts, instructional videos, technology to use books & comics.
Experiences During and After Program Completion	Program Retention and Completion	Includes description of why participants remained in the DLCP until completion. Includes showing up/persevering through challenges.
	Strategies for Program Success	Includes participants' strategies (student initiated) for success in the program. References to how students dealt with challenges, ways they may have found support (with content or tech) and what worked for them.
	Challenges of Program	Refers to any challenges, difficulties, or obstacles participants encountered in the DLCP. Includes technological, linguistic, workload, etc.
	Program Classmate Connections	Refers to participant connections to colleagues and classmates, study groups, interactions and connections online

		or in person. Also includes participant recommendations for increasing connections.
	Program Instructor Connections	Refers to participant connections to instructors. Also includes participant recommendations for increasing connections with instructors.
	Program Classmate Roles	Includes the roles classmates played in participants' navigation of the program. Includes the roles of participants' classmates in their learning.
	Program Instructor Roles	Includes the roles participants' instructors played in their navigation of the program. Includes the roles of participants' instructors in their learning. Includes instructor expectations of participants while enrolled.
	Program Takeaways	Includes references to ah-ha moments, takeaways from the program, shifts or new perspectives that occurred as a result of the DLCP.
	Program to K-12 Classroom Content Transfer	Includes descriptions of both practice and ideology of language use in participants' K-12 classrooms. Includes descriptions of ideologies and practices of language use before and after DLCP. Includes references to activities or strategies (e.g., bridge, translanguaging) that were transferable from the DLCP to their classrooms, including contributions to lesson planning.
	Post-Program Professional Opportunities	Refers professional development/professional opportunities during or following completion of DLCP. Potential changes in role of participants.
Program Curriculum	Program Assignments	Includes description of assignments. Includes descriptions of readings. Includes description of DLCP course flow (organization of modules, announcements, syllabus, structure of class).
	Program Structure	Refers specifically to references re: the structure and organization of the DLCP and course sequence (e.g., how classes build off one another).
	Program Learning Outcomes	Includes comments made by participants re: learning outcomes, how DLCP learning outcomes apply to expectations of K-12 DLBE teachers.
	Recommendations for Program	Includes any recommended changes participants offered, alternatives to current structure, practices, technology, materials, etc.

About the Research Unit at Oregon State Ecampus

Vision

The Ecampus Research Unit strives to be leaders in the field of online higher education research through contributing new knowledge to the field, advancing research literacy, building researcher communities and guiding national conversations around actionable research in online teaching and learning.

Mission

The Ecampus Research Unit responds to and forecasts the needs and challenges of the online education field through conducting original research; fostering strategic collaborations; and creating evidence-based resources and tools that contribute to effective online teaching, learning and program administration.

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