Teachers' Perception of Virtual Professional Development in a Randomized Control Trial

Fuhui Tong, Beverly J. Irby, Rafael Lara-Alecio

Abstract— **Using qualitative survey response data from 75 third grade bilingual teachers in a randomized control trial (RCT), we examined teachers' perceptions towards the project's virtual professional development (VPD) component. We were interested in the teachers' perceptions as it relates to the potential to take PD to a broader audience across geographic regions (scalability). Through the progression from the original RCT in one school district with face-face PD to a validation RCT in seven school districts across three geographic regions with VPD, it was found that teachers were overwhelmingly positive toward such type of training, and VPD is a gateway to increasing the scalability of strategies presented in the online setting.**

Index Terms— *Bilingual education, Elementary school, Randomized control trial, Virtual professional development.*

I. INTRODUCTION AND LITERATURE REVIEW

Quality of instruction has been determined to be one of the most important aspects for improving achievement among English language learners (ELLs) [1]-[4], and ongoing professional development (PD) can improve the quality of the instruction [5]. As [6] suggested, "Professional development is critical to ensuring that teachers keep up with changes in statewide student performance standards, become familiar with new methods of teaching in the content areas, learn how to make the most effective instructional use of new technologies for teaching and learning, and adapt their teaching to shifting school environments and an increasingly diverse student population (p. 575)."

According to [7], in the 1990s, the World Wide Web opened the door for online education to develop by making it fairly accessible to society, allowing for a faster form of human communication, and encouraging the creation of new pedagogical models. In the last ten years, there seems to be a push to integrate more online technology components into PD for classroom teachers. As noted by many scholars, the flexibility of these types of new online instructional technologies allows teachers to have year-round access to important resources and new developments in teaching practices [8]. Reference [9] indicated that online professional

Fuhui Tong, Department of Educational Psychology, Texas A&M University, College Station, TX 77843-4225, United States,

Beverly J. Irby, Department of Educational Administration and Human Resource Development, Texas A&M University, College Station, TX 77843-4226, United States,

Rafael Lara-Alecio, Department of Educational Psychology, Texas A&M University, College Station, TX

development, or virtual professional development (VPD), may be delivered in several says: (a) synchronous with facilitator, (b) asynchronous with facilitator, and (c) asynchronous without facilitator. Under each of these delivery modes participants may be involved as a group or as individuals or a combination. Additionally, these modes may be formal or informal learning situations. Thus there may be multiple combinations.

Reference [10] concluded that online discussions provided teachers with the opportunity to clarify their thinking about complex educational issues and make more informed decisions about their professional practice. Reference [11]-[12] demonstrated the important role of new technology that will continue to play in the education of future teachers and special populations such as English language learners (ELLs). For over a decade, researchers have recommended that online PD be examined for effectiveness in terms of teachers' knowledge, skills, attitudes, beliefs, and classroom practices [13]-[14]. In a review of studies prior to 2009 [15], only seven studies of 40 were focused on interventions to improve teacher practice and/or student learning. Few randomized control trial studies since 2010 include VPD. Reference [14] affirmed that general online teacher professional development is an area in need of high levels of quantitative and empirical-related academic research. They found that previous studies lacked an appropriate line of questioning, rigor of methodology, and conclusive findings to support theses; thus, their review served as powerful evidence that empirical research on this topic is weak and underfunded to a striking degree. Reference [16] furthered the concept of online professional development by conducting a review, and found a void in the literature particularly in relation to bilingual and ESL classroom teachers. In fact, After an overview of recent literature housed in major search engines (e.g., Google, Academic Search Complete, JSTOR, EBSCO, ProQuest)—limiting the review to online or VPD and elementary teachers of ELLs (bilingual or English as second language–ESL) in the United States without limiting the years of publication—no empirical studies were found. There have been no randomized control trial studies examining academic year-long uses of VPD on focused curriculum-based training for elementary teachers of ELLs. No studies using VPD have targeted solely bilingual classrooms for ELLs, and no studies were found that determined if the condition of virtual observations and feedback and VPD impact elementary teachers of ELLs and ELLs' achievement in a variety of schools. No qualitative studies on VPD and bilingual/ESL teachers were found to

exist either. Therefore, the purpose of this study was to examine bilingual teachers' perceptions of an on-going VPD delivered bi-weekly as part of a RCT implemented in seven school districts at third grade level in the state of Texas. The research question was thus: What are bilingual teachers' perceptions of an on-going VPD delivered bi-weekly as part of a RCT implemented in seven school districts at third grade level in the state of Texas?

II. METHODS

A. Research Design and Context

This study was derived from a current randomized control trial known as English Language and Literacy Acquisition-Validation (ELLA-V) [17]. It is a randomized controlled trial (RCT) study funded by the Office of Innovation and Improvement—Investing in Innovation Funds (i3-U.S. Department of Education; U411B120047). The intent is to validate instructional components during a 45-minute English as a second language (ESL) block with ELLs across Texas. Campuses within each school district were clustered together in groups of three based on the following criteria: a) composite rating on the state assessment for English proficiency (e.g. beginning, intermediate, advanced, or advanced high); b) percent of economically disadvantaged students; and c) percent of ELLs. Once a cluster, or group of three comparable campuses was identified, each campus was randomly assigned to a condition of Treatment 1, Treatment 2, or Control. On each selected campus, two bilingual classrooms and teachers from each campus were invited to participate. There were a total of 122 bilingual teachers in grade 3 from 61 elementary schools. For the purpose of this study, only treatment teachers (n=75) were included in the qualitative analysis.

B. Description of Intervention and Control

In Treatment bilingual classrooms, ESL instruction included 45 minutes daily of structured, standards-aligned curriculum supporting development of academic language in science. There are two different components delivered to Treatment 1 and Treatment 2 classrooms. Treatment 1 includes a scripted lesson plan overlay that integrates the 5E Model of instruction with science-embedded English language development using a science textbook. This curriculum includes direct instruction of reading skills, vocabulary building activities, hands-on inquiry activities, scaffolded and leveled questions, and partner reading. Treatment 2 includes 35 minutes of a structured read-aloud that facilitates interactive story reading between a teacher and students. Scripted lesson plans focusing on academic vocabulary instruction, leveled questioning, listening comprehension, and oral language development, correspond with one expository science-related book each week. In Control bilingual classrooms, typical ESL instruction includes 45 minutes of instruction daily. School districts provided a state aligned curriculum sequence; however, various resources and strategies were used during ESL instruction.

C. Intervention of Virtual Professional Development

Treatment teachers attended bi-weekly virtual professional development with the following activities: (a) review and practice upcoming lessons, (b) reflect on and discuss student learning, (c) assess pedagogical progress as a teacher in the intervention, (d) ESL instructional strategies (Interactive Read Aloud, Preview/Review, Academic Language Scaffolding, Think Aloud, Leveled Questioning, Word Wall, Advanced Organizers, and Content Connections), (e) vocabulary building and fluency, (f) oral-language development and the importance of planned student talk with less teacher talk, (g) literacy development, (h) reading comprehension, (i) language of instruction clarifications, (j) language of instruction, language content, communication modes, and activity structures, and (k) reflective practice via portfolio development.

The VPD was delivered via Citrix GoToTraining with webinars. This technology is anticipated to have an effect on implementation and on thousands of teachers after the intervention as webinars are released. With the integrated web, audio, and HD video conferencing capabilities, we provide a complete collaboration experience in a single interface. More specifically, the GoToTraining offers features such as audience management so that we send customized invitations to teacher participants for them to access the link to register and access the training. Once registered, each teacher is sent a unique link to access the training. Automated reminder emails are sent out to registered participants. Once a teacher clicks on the link, the system allows access to the training as it tracks the number of minutes in attendance. There is an option to incorporate polls and surveys. In addition, during the training, attendees can "raise their hand," notifying the presenter that a participant has a question. The dashboard allows a presenter to monitor attendee participation. Detailed reports provide information on who registered and attended the session. The chat log can be downloaded, documenting chat conversations between the presenter and participants. Such a feature is helpful to our coordinators as they can go back and review if all questions were addressed. We recorded a session, which can be uploaded into Citrix and a link is created so that participants can review the training more than once if needed.

D. Data Sources

At the end of the school year over a 27-week intervention period, 75 third-grade treatment teachers were asked to access an online survey to complete their responses. In this eleven-question survey, the first four questions requested information such as name, school, and treatment group. The remaining questions were open-ended asking for reflections on how the intervention affected teachers' ESL instructional practice, professional growth specific to knowledge of ESL strategies, students' performance in English, students' science knowledge and use of academic language, students' self-esteem, recommendations for treatment interventions, and recommendations regarding online training.

III. RESULTS

After an initial review of the responses, topic/theme categories were identified and labeled as positive or negative perceptions. Survey responses were evaluated and topic/theme categories were marked each time a survey response addressed that topic. Tallies were added and percentages were calculated (see Table 1). The data reveal an overwhelmingly positive perception toward the VPD. This is an indicator of success in the scalability of increasing the geographic spread of the project and moving to the altered condition of VPD for the validation study. The positive themes determined from the data are: (a) Time/Location, (b) Recorded Sessions, (c) Qualified Trainers, (d) Question/Answer Forum, and (e) Excellent Content and Instructional Information. The negative themes identified are: (a) Sometimes Information was Repetitive, (b) Some Content was Self-Explanatory, (c) More Modeling would have been beneficial, and (d) Personal Computer Issues- bandwidth.

The majority of the negative feedback is related to the content of the training and how it affected the delivery of the intervention components, i.e. information too repetitive, and needed more modeling. Those are pieces of the PD that can be fixed with a revision of any VPD content, as needed. It is helpful to provide initial training to the external parties in how the VPD will be conducted and to showcase software features so technological expectations are set up front [18]. In addition, to help alleviate technological difficulties, it is important to have knowledgeable team members available to assist external parties in participating in the virtual learning environment. With these lessons learned, the potential for maximizing the positive teachers' perceptions is possible. Teacher buy-in of the virtual environment perpetuates the online delivery method of PD [19]. This will allow for the realization of scalability.

IV. SIGNIFICANCE AND CONCLUSION

Parr suggested that teachers' perception of virtual learning technologies plays a leading role in the successful implementation of the virtual learning method [20]. In a review of studies prior to 2010 [15], only seven studies of 40 were focused on interventions to improve teacher practice. There are few randomized control trial studies that include VPD since 2010. The treatment teachers in our study were all within a controlled environment with controlled curriculum with the RCT. Therefore, via this study, we have contributed to the knowledge base regarding VPD for teachers working with ELLs. The VPD can be a gateway to increasing the scalability of strategies and methods presented in the online setting, specifically for training of bilingual teachers on structured ESL instruction. The positive responses from teachers are an indicator of successful scalability of increasing the geographic spread of the project and moving to the altered condition of VPD for this validation study.

Table 1.
Teacher survey responses: Perceptions of virtual professional development (VPD)

Topic/Theme Response Categories	Tally of responses	Percentage
Convenience		
Time/Location	17	25%
Reference Recordings	4	6%
Content		
Info too repetitive	3	4%
Not needed/self-explanatory	5	7%
Delivery		
Qualified trainer (organized, planned)	14	21%
Forum to have questions answered	8	12%
Facilitated knowledge to *Know how to deliver intervention*	10	15%
Needed more modeling	3	4%
Technology Difficulties	4	6%
TOTALS	68	100%
POSITIVE		79%
DISSENTING		21%

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Fuhui Tong is an associate professor in the Department of Educational Psychology, Texas A&M University, College Station, TX, United States. Her research interests include second language and literacy development and assessment for students in bilingual and English-as-a-second-language settings.

Beverly J. Irby is a professor and Associate Department Head, Department of Educational Administration and Human Resource Development, Texas A&M University, College Station, TX, United States. Her primary research interests center on issues of social responsibility, including bilingual and English-as-a-second-language education administrative structures, curriculum, and instructional strategies..

Rafael Lara-Alecio is a professor and director of the Bilingual Programs, Department of Educational Psychology, Texas A&M University, College Station, TX, United States. His primary areas of research are in assessment, evaluation, and bilingual content area instruction. He is a coauthor of a pedagogical theory and model for transitional English bilingual classrooms.