



Does Virtual Field Experience Deliver? An Examination into Virtual Field Experience during the Pandemic and Its Implications for Teacher Education Programs

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Abstract

This study attempted to examine whether academic performance of pre-service teachers (PST) in virtual field experiences was the same as that of their peers in the previous semester who had regular face-to-face field experiences. Data for this study included PST' scores in three course sections in the Spring 2020 semester at a mid-size public university located in the Midwest of the United States where all of their field experiences were conducted virtually and compared with that of their peers in the Fall 2019 semester when all of their field experiences were conducted face-to-face. Our findings indicated that PST's academic performance in the virtual field experiences was the same as that of their peers in the previous semester who had regular face-to-face field experiences.

Keywords: virtual field experience, field experience, preservice teachers, teacher education, COVID-19

Introduction

A fundamental component of almost all teacher education programs in the US is the provision of field experiences for preservice teachers (PST) (Eisenhardt et al., 2012; Hanline, 2010; Lastrapes & Negishi, 2012). Field experiences are often defined as formal, required school and community activities within a teacher preparation program in which the PST completes for learning and professional development. Research has shown that field experiences broadened PST understanding of effective classroom instruction and established a platform for applying theory and translation of research into practice. Specifically, field experiences enhanced PST learning of skills needed to individualize instruction (Donna & Hick, 2017), expanded their knowledge gained from their teacher education programs to greater meaning (Philipp et al., 2007), developed PST more sophisticated understandings of the teaching and learning practice (Burns et al., 2016), and helped boost their confidence and familiarize themselves with the working context.

The common practice of PST field experiences in teacher education programs is intentionally exposing PST to schools under the guidance of program faculty and trained teacher mentors throughout the preparation program (Kennedy & Archambault, 2012). These field experiences are often closely integrated with coursework, assessment practices and program goals (Hemmings & Woodcock, 2011).

Like many other peer teacher education programs nationwide, this study's teacher education program also embraced fieldwork experience for its PST. They were expected to visit face-to-face classrooms and observe how classroom teachers interact with students and interact with each other daily. Thanks to a close partnership between the University, which is a mid-size public university located in the Midwest of the United States and its public school network, sending PST to school for field experience and/or student teaching was never a problem. All public schools in the partnership network welcomed its students. The availability and friendly learning environment that those public

schools offered made those face-to-face fieldwork arrangements smooth and easy, and therefore pushed the idea of virtual field experience off the table. However, with the pandemic in 2020 forcing most universities and public schools to shut down, resulting in PST not having regular face-to-face field experience that their peers used to enjoy, faculty in the teacher education program who was in charge of field experience-related assignment had to convert their conventional face-to-face field experience into virtual field experience to allow learning to continue. The purpose of this study was to examine whether PST's academic performance in those virtual field experiences was the same as their peers in the previous semester who had regular face-to-face field experiences.

Description of Virtual Field Experience

The practice of training of preservice teachers is to experience students in an observation setting. In their second level of field experience, preschool teachers complete eight to ten hours of student observations to complete their second level case study. These observations take place for two-hour periods at local schools. Preservice teachers are assigned to a school and classroom based on the developmental level that they plan to teach in. In the spring of 2020, preservice teachers were unexpectedly withdrawn from the classrooms they were assigned to due to COVID-19.

Preservice teachers were then assigned a virtual classroom experience via the Teaching Channel website. The videos from the Teaching Channel were not made exclusively for field observation. The teaching channel videos have been used previously with educational courses to show students interacting with teachers teaching content. Preservice teachers could use the Teaching Channel videos to complete their field visits virtually as in-person field visits were obsolete due to COVID-19 restrictions.

Students were given the same developmental level that they had been observing throughout the semester. The Teaching Channel provides a virtual classroom observation via the website's video teaching demonstrations. The videos were of different developmental levels in core academics areas. The core academic areas were the same grade levels that the preservice teachers would observe if they were allowed in schools for face-to-face observations. Students logged into their learning platform, Canvas, watched the video of their assigned developmental level and used the same field observation paperwork and case study format as they previously did for face-to-face student observations. The virtual observations gave the students multiple opportunities to watch their assigned video. Students could rewatch to notice the developmental characteristics assigned in their case study due to the chance to watch their assigned video.

Literature Review

Blended Learning

Despite the fact, face-to-face interactions were the predominant mode of instruction in classrooms and for the training of preservice teachers (PST) in a classroom context, virtual learning and virtual field experiences have arguably received more attention from researchers. For instance, Geiger and Dawson (2020) studied a transition to virtual learning and provided implications for in-service and preservice teacher educators, particularly during a pandemic such as the COVID-19 pandemic. The study concluded that professional development related to blended learning could benefit traditional instruction and pandemics. A similar observation was made by Burns (2011), who discussed the phenomenon of distance education for teachers' training and developed a detailed guide for different modes, models, and methods of distance learning that could be employed. These included audio-based models, televisual models, computer-based multimedia models, web-based models,

and mobile models. However, despite these models being innately different, Burns (2011) argued that converging and blending multiple distance learning modes and face-to-face sessions to reach different types of learning and achieve different instructional objectives, thus supporting Geiger and Dawson's (2020) conclusion.

Similarly, Masats and Dooly (2011) argued that video case studies were often utilized in teacher training programs to develop just one area of competence and, therefore, sought to develop an integrative model that met diverse learning objectives and competencies while using videos effectively to guide student teachers towards developing professionally. The result was a holistic approach that combined various aspects of video learning and traditional instruction methods to increase the number of competencies targeted by teacher training programs. In essence, Masats and Dooly (2011) based their research on the arguments made by Burns (2011) and Geiger and Dawson (2020) about the advantages of blended learning that combines different virtual learning characteristics and traditional teaching methods to achieve maximum benefits.

Effectiveness of Virtual Instruction

While it has been established that combining traditional face-to-face and virtual instruction of PST may result in more significant benefits, it is also equally important to determine whether there are any differences between the use of traditional methods and virtual methods with regards to the effectiveness of the PST. Chisenhall (2016) investigated the sense of efficacy of PST regarding student engagement, classroom management, and instructional strategies and found no statistically significant differences between the sense of efficacy of PST who used traditional face-to-face observations and those who used video observations. These results were similar to Hodge et al. (2002) findings. They sought to provide a comparison between the effects of off-campus and on-campus practicum types on the attitudes and perceived competence of physical education teacher education students when teaching students with moderate to severe mental retardation or physical disabilities. Their study's findings showed that there were no significant differences between the attitudes and perceived competence measures across the two practicum types.

Benefits of Virtual/Video Learning

Nevertheless, Baecher and Connor (2010) noted that using video analysis in classroom practice for PST of students with learning disabilities possessed both benefits and limitations compared to traditional methods. The benefits of using video analysis included the fact that it provides a powerful medium for bridging theory and practice, the development of pedagogical knowledge through the study of specific dimensions through video cases that are specially designed, encouragement of reflection skills by allowing the revisit and investigation of missed or complex concepts, and the generation of cognitive dissonance which limits complacency (Baecher & Connor, 2010). On the other hand, the limitations of using video analysis in classroom practice for PST of students with learning disabilities included an initial experience of anxiety arising from simultaneous teaching and use of technical equipment, the need for instructors to have adequate expertise in the use of video as a medium for observing classroom interactions, and the need for the education institution to possess sufficient resources and personnel to maintain a video library that is of acceptable quality (Baecher & Connor, 2010).

These observations by Baecher and Connor (2010) were supported by Baecher and Kung (2011). They stated that the three premises that supported by research for the use of video analysis by PST in training included the need for a high scaffolding for novices to shift them away from superficial and

evaluative viewing of classroom video, the importance of cognitive dissonance among teachers to make them see beyond their expectations and the requirement for replaying and reviewing as a way to improve reflective skills. The role of video in improving reflective skills in PST is also highlighted by Coffey (2014), who studied the use of video in developing skills in reflection teacher education students and concluded that PST found that the use of video, in conjunction with written feedback from their instructors enhanced their abilities to reflect on their teaching skills. Furthermore, Watters et al. (2018) conducted an experiment to determine to what extent PST's interpreted pedagogical practice from theoretical perspectives after watching videos of teachers implementing lessons in a mathematics class and determined that videos and multimedia had a generally positive impact when used to interactively to promote discussion and debate about practices for PST. This is because using video analysis lessons that highlight critical aspects of quality teaching by PST helped them develop the knowledge and skills to undertake the tasks in a professional environment. Cannings and Talley (2003) also supported Baecher and Connor's (2010) argument that video analysis in classroom practice for PST assisted in bridging the gap between theory and practice by arguing that PST lacked the experience to meaningfully observe the classroom's complex and rapid interactions in real-time, hence the need for video case studies.

However, Cannings and Talley (2003) provided a caveat to the use of videos in the education of PST and noted that the use of the best video would not impact the teaching practice unless the PST can observe the videos and develop an understanding of how to get a reflection of their practice and that of others. This thought is reiterated by Tekkumru-Kisa and Stein (2017). They argued that teachers do not learn how to improve their instructional practice by watching the reflection of classroom videos but through the careful selection and embedding of the videos in professional development in a manner that assists the teachers to notice and reason about important aspects of instruction and learning that appear in the videos.

Nonetheless, McGarr (2020) also highlighted other advantages of virtual training of PST by stating that virtual simulations in teacher education addressed challenges such as the overwhelming nature of school placement experiences and the demands associated with class management. Through virtual simulations, PST can experience the challenging aspects of student behavior in a less pressurized environment, where they can make mistakes without fearing negative effects on academic progression (McGarr, 2020). McGarr (2020) also further argues that virtual simulations give PST the unique opportunity to gain different classroom experiences in a more controlled and structured manner. This is in line with Borko et al. (2011) thoughts. They explored the uses of video in practice-based professional development programs. They argued that video clips posed substantive questions and facilitated productive conversations and professional development that encouraged PST to examine central aspects of instruction and learning, thus enhancing their abilities to provide quality education to students. Like McGarr (2020), McPherson et al. (2011) conducted a study evaluating the use of a web-based simulation with PST and in-service teachers of special education students and found that teaching simulation resulted in positive improvement in teacher preparation, attitudes, and the students' perception of inclusion. As a result, McPherson et al. (2011) concluded that teaching simulations are a means for current and future teaching educators to gain a safe environment to practice teaching, multiple repetitions accelerated time, rapid feedback, and exposures potential of games and simulations in learning.

Dalvi and Wendell (2017) sought to establish a means of measuring the benefits of video cases for PST regarding the responsiveness in engineering. The study described the evidence supporting the validity and reliability of the video case diagnosis tasks, a tool for measuring the teaching responsiveness of PST in engineering. Findings showed that the video case diagnosis tool was valid and reliable in assessing the responsiveness of PST with regards to three critical aspects.

The three aspects are noticing the student ideas towards engineering design projects, noticing the students' engineering design practices, and providing productive responses to support the further development of the ideas and practices (Dalvi & Wendell, 2017).

Application of Virtual Learning

Various platforms have been established to leverage the benefits of virtual platforms for the training of PST, as has been established by literature. One such platform is the Teaching Channel website, which is described as a platform for creating an environment that allows teachers to watch, share, and learn new techniques that will enable them to assist students to grow (Reyes III, 2019). Reyes III (2019) provided a review of the website and argued that one of its strengths is how it addresses ways for the strategic engagement, assessment, and challenging of students in a classroom. The website also explores and applies non-cognitive and non-school-content material such as how learning is affected by happiness and mindset, which research has shown to be important elements in improving learning, school retention, and student engagement (Reyes III, 2019).

In conclusion, the use of videos and other virtual methods have demonstrated acceptable levels of efficacy and benefits in the training of PST, even though there exist some limitations to their use. Some of the main benefits of virtual or video learning for PST that have been highlighted in the literature include the creation of cognitive dissonance, improvement of reflection skills, effective bridging of theory and practice, and creation of conducive non-pressurized environments for learning. However, the achievement of these benefits is not guaranteed and depends on the effective use of the methods. The use of blended learning methods, which combine both virtual and traditional methods, have also been supported extensively by literature. This is because blended learning provides the added advantage of catering to different needs through different instruction methods. Nonetheless, the use of virtual methods in the education of PST seems to be the future, with virtual platforms such as the Teaching Channel website being established to leverage its benefits.

Research Method

The purpose of this study was to examine whether PST's academic performance in those virtual field experiences was the same as that of their peers in the previous semester who had regular face-to-face field experiences. Data for this study included PST's scores for the language development case study assignment in three course sections in the Spring 2020 semester when all of their field experiences were conducted virtually and compared with that of their peers in the Fall 2019 semester when all of their field experiences were conducted face-to-face. In total, there were 123 PST students in three course sections in the Spring 2020 semester with the virtual field experience and 110 PST students in three course sections in the Fall 2019 semester with the regular face-to-face field experience.

According to those course sections' instructors, PST's scores were statistically consistent in the previous semesters. The three sections of preservice teachers were required to have a TaskStream subscription. The students are assigned to a case study on growth and development and exceptionalities of their assigned student developmental level. Each student completed a case study in each of the developmental areas. The developmental areas are physical, emotional, social, language, and cognitive. The students were scored on a nine-point rubric for the growth and development case study and a six-point rubric for the exceptionalities case study. The same rubrics were used when the

students had to move to virtual student observations. The course had three sections. Each section is taught by two instructors, who co-teach the course. The course is 120 minutes, with 60 minutes devoted to the growth and development of “typical” students and 60 minutes focused on introducing exceptionalities or “atypical” students.

Data were input into IBM SPSS Statistics 25 to run an unpaired t-test. An unpaired t-test, also known as an independent t-test, is a statistical procedure whose purpose is to compare the averages/means of two independent or unrelated groups (PST’s scores in the Fall 2019 semester vs. PST’s scores in the Spring 2020 semester) to determine whether there is a significant difference between the two groups.

Findings

This study aims to investigate whether PST’s academic performance in the virtual field experiences during the pandemic COVID-19 was the same as that of their peers in the previous semester who had regular face-to-face field experiences by comparing the two groups’ scores in three course sections. Tables 1 and 2 summarize the results of t-test analysis.

Table 1: Descriptive t-test Analysis of the Two Groups

	Group	N	Mean	Std. Deviation	Std. Error Mean
Score	Fall 2019	110	.9570	.15263	.01455
	Spring 2020	123	.9282	.18091	.01631

Table 2: Result of Independent t-test

		Levene’s Test for Equality of Variances					T-test for Equality of Means		95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Score	Equal variances assumed	2.058	.153	1.305	231	.193	.02879	.02207	-.01469	.072227
	Equal variances not assumed			1.317	230.239	.189	.02879	.02186	-.01428	.07186

As shown in table 2, the two-tailed P value equals 0.193. By conventional criteria, this difference is considered to be not statistically significant. In other words, PST’s academic performance in the virtual field experiences due to the COVID-19 pandemic was the same as that of their peers in the previous semester who had regular face-to-face field experiences.

Discussions and Implications

The rapid transition to remote learning both in higher educational institutions and P-12 schools across the U.S, primarily in the form of online learning, helped prevent learning from being disrupted during the COVID-19 crisis. Nonetheless, this emergency conversion without any preparation or anticipation also caused uncertainty and mayhem for many instructors and students depending upon their preparedness and competencies to teach and/or learn in online environments. This is especially true to teacher education programs that included field experiences for PST. Before the pandemic, PST fieldwork experience in almost all teacher education programs was face- to- face. PST would visit onsite classrooms and observe how classroom teachers interact with students and students interact with each other daily. The pandemic forced most universities and P-12 schools to shut down, resulting in PST not having regular face-to-face field experience. Teacher education programs and their faculty either canceled those onsite field experiences or converted their conventional face-to-face field experience into virtual field experience to allow learning to continue.

As discussed by researchers and educators (Hodges et al., 2020; Vu et al., 2016), online learning or eLearning carries a stigma of being lower quality than face-to-face counterpart even though research shows otherwise. The quick and unprecedented transition to online learning in a general and virtual field experience for PST, in particular, could potentially seal many people's perceptions of online learning as a weak alternative. Our study's finding indicated that if properly arranged and done right even in emergencies without any anticipation, virtual field experience for PST could still be delivered. More specifically, PST's academic performance in the virtual field experiences due to the COVID-19 pandemic was the same as that of their peers in the previous semester who had regular face-to-face field experiences. PST could engage with the virtual field observation videos because they could go back to the video to watch specific skills they were writing about in their field observation case study. This result echoed what previous researchers (Burns, 2011; Chisenhall, 2016; Geiger & Dawson, 2020) confirmed the efficacy of virtual field experiences for PST.

Conventional onsite field experiences in teacher education programs may still be dominant, but not all teacher education programs can afford to locate quality field experiences for their PST all the time. The technology exists or can be created, and it may ameliorate the situation like what happened during the pandemic. Instead of canceling or delaying the learning process, teacher educators could create a virtual field experience for their PST, and if done right, the quality is as high as the onsite counterpart. For future use, the virtual field observations can also be an option for online students who do not have access to an in-person classroom or work during school hours and cannot complete in-person field observations. Virtual field observations can also help those students who are also currently teaching but need to complete field hours in a different type or grade level.

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