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Does Delivery Model Matter? The Influence of Course Delivery Model on Teacher Candidates' Self-Efficacy Beliefs Towards Inclusive Practices

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Abstract

A causal-comparative research design was used to examine the influence of course delivery (face-to-face flipped or asynchronous online) on participants' self-efficacy beliefs toward teaching in an inclusive classroom. The following research questions were used to guide the study: (a) Is there a relationship between completing an introduction of exceptionalities course and participants' self-efficacy toward teaching an inclusive classroom? (b) Is there a relationship between completing an introduction of exceptionalities course in an asynchronous online or face-to-face flipped format on participants' self-efficacy beliefs toward teaching in an inclusive classroom? The purpose of this study was to explore if there is a relationship between self-efficacy belief development and course delivery models. The results indicated a significant difference in self-efficacy beliefs towards teaching in an inclusive classroom after completing an introduction of exceptionalities course. However, there was no significant difference in the participants' efficacy based on the course delivery model (face-to-face flipped or asynchronous online). Implications and suggestions for future research are discussed.

Keywords: distance education, self-efficacy, teacher education, inclusion

Introduction

A climbing trend in higher education is to offer courses in a variety of delivery formats. In fall 2016, 31.6% of all higher education students in the United States were taking at least one distance education course compared to 26% the previous year. This was the 14th straight year that distance education enrollment experienced an increase (Allen & Seaman, 2017). An implication of this pedagogical movement is that individual program areas are experimenting with distance and hybrid courses in order to meet the demand.

The central tenet of teacher preparation programs is to prepare high-quality special education and general education teachers. Historically, the pathway to becoming a K–12 teacher included enrolling in a college or university for several years while taking a variety of on-campus coursework and engaging in practicum experiences in the local school system. However, institutions are offering more online coursework, and many teacher preparation programs are following suit. This trend in higher education may impact both students who choose to pursue a teaching degree and teacher preparation programs since it deviates from more traditional models.

Considering the trend of growth in distance education, there is a need for teacher preparation programs to ensure that their varied delivery models are indeed effectively equipping their teacher candidates to teach in a variety of educational settings, including inclusive environments. Additionally, the American Association of Colleges for Teacher Education (2013) suggests that teacher preparation programs examine the impact course delivery methods have on teacher beliefs. In response to this need, the present study reviewed the literature involving distance education in higher education, distance education in teacher education, and the development of teacher candidates' self-efficacy beliefs.

The purpose of this study was to explore whether there was a relationship between self-efficacy belief development and course delivery models. The study is guided by the following research questions: (a) Is there a relationship between completing an introduction of exceptionalities course and participants' self-efficacy toward teaching in an inclusive classroom? (b) Is there a relationship between completing an introduction of exceptionalities course in an asynchronous online or face-to-face flipped format on participants' self-efficacy beliefs toward teaching in an inclusive classroom?

Review of the Literature

Distance Education

According to a report on distance education in the United States, distance education enrollments have continued to increase and are growing faster than they have for the past several years (Seaman, Allen, & Seaman, 2018). This enrollment trend is especially important information since overall enrollments in higher education have been on a decline since 2012. Between fall 2015 and fall 2016, the number of students taking at least one distance education course grew by 5.6% (6,359,121), which equals 31.6% of all students. Additionally, 14.9% of students were taking only online courses, and 16.7% were taking a combination of distance and on-campus courses. The number of students not taking any online courses dropped by 6.4% (1,173,805) from 2012 to 2016. During the same time, the number of students not taking distance courses

at all declined by 11.2% (1,737,955). As a result of this trend, higher education is implementing various online delivery models across all disciplines.

Delivery models. As distance learning in the United States has become more widespread, universities are offering a wider variety of options in terms of delivery (Severino & DeCarlo, 2017). There are fully online, hybrid, flipped, and face-to-face course options. Fully online models can either be synchronous (i.e., have a regularly scheduled online meeting time) or asynchronous (i.e., self-paced and independent, with instruction delivered in a way that does not require scheduled meeting times). Additionally, some universities merge the asynchronous and synchronous models. Hybrid courses utilize some face-to-face time on campus in addition to asynchronous online learning. A flipped course design commonly reverses the content instruction from the classroom to online. The content is often delivered through online lectures and learning activities, which students complete outside of the scheduled class time. The face-to-face instructional time is spent discussing and applying the concepts learned. Finally, the most traditional model delivers instruction through face-to-face courses delivered on campus, with all of the content taught and applied in the classroom. Couse delivery models involving distance are summarized in Table 1. The face-to-face description is original; all others are from the Commonwealth of Learning (COL; 2015).

Table 1

Descriptions of Distance Learning Delivery Options

Type of course delivery	Description
Fully online (asynchronous)	"learning online at different time and/or place using an online learning platform. Example of asynchronous learning is use of discussion forums and email for learning" (p. 2).
Hybrid, blended	"a teaching and learning approach that demonstrates a blend of different methods, technologies, and resources to improve student learning. Some examples of blended learning are flipped classroom, online interaction followed by face-to-face teaching, online learning supplemented by face-to-face practical" (p. 2).
Face-to-face, flipped	"a form of blended learning where learners read or watch online lecture materials at home, before participating in interaction in a classroom environment" (p. 2).
Mobile learning	"defined as the provision of education and training using mobile devices such as Personal Digital Assistants (PDAs), tablets, smartphones and mobile phones. While learning is not mobile, it is about teaching and learning through use of mobile devices, anywhere, anytime" (p. 3).
Face-to-face	traditional classroom setting where the teacher and students are not separated by physical space or time

Faculty perceptions. There are also significant and salient challenges represented in the literature. University faculty and staff reported that they have ongoing concerns about the workload

associated with teaching online (Bollinger & Wasilik, 2009; Wingo, Ivankova, & Moss, 2017); generally faculty would not recommend teaching in an online context to others (Ulmer, Watson, & Derby, 2007), and they struggle with maintaining student engagement within the course (McQuiggan, 2007). Ultimately, many faculty indicated that they miss the engagement and face-to-face interaction with their students that comes with teaching on-campus courses (McQuiggan, 2007).

Student perceptions. The literature varied on the degree of satisfaction and perceptions students have when comparing online to face-to-face courses. Some online students report that they feel a lack of engagement and confess to being minimally involved in the course and with their peers (Dobozy, 2009). Young and Duncan (2014) conducted a study that examined student ratings on 172 online courses and 470 face-to-face courses and found that face-to-face courses were rated significantly higher than online courses in the categories of communication, faculty to student interaction, grading, instructional methods, and course outcomes. Interestingly, the participants showed that student effort was significantly higher for online courses. Overall, students were more satisfied, as measured by student course evaluations or ratings, with face-to-face courses. Other similar studies found parallel results regarding student satisfaction scores between online versus face-to-face courses (Mentzer, Cryan, & Teclehaimanot, 2007; Summers, Waigandt, & Whittaker, 2005). However, there are studies that directly contradict these findings, and they found that students are equally satisfied taking online and face-to-face courses (Horspool & Lange, 2012; O'Neal, Jones, Miller, Campbell, & Pierce, 2007). An additional and significant challenge to the online education trend is that online students have lower graduation rates than face-to-face students (Grau-Valldosera & Minguillon, 2014; Legon & Garrett, 2018).

The benefits of online education options for higher education institutions and their students are documented in extant literature. Online education has been found to promote accessibility to educational opportunities for non-traditional students and those who live in remote regions (Chau, 2010; Robina & Anderson, 2010). Also, students often report valuing the flexibility of online courses so they can pursue their academic career while holding jobs and maintaining personal obligations (Chau, 2010; O'Brien, Hartshorne, Beattie, & Jordan, 2012; Vernon-Dotson, Floyd, Dukes, & Darling, 2014). Studies have found that some online learning models are student-centered (Gilboy, Heinrichs, & Pazzaglia, 2015), increase student engagement (Anderson, 2008; Herrington & Herrington, 2006), and assist in the development of students' technological skills which can be applied in their workplace (Chau, 2010). Another well-established finding is that students can and do learn successfully from coursework in online formats (Means, Toyama, Murphy, Bakia, & Jones, 2009; Rowley & O'Dea, 2014). Cross (1981) posited that adult learners experience three primary types of barriers (situational, institutional, and dispositional) which can block their path to pursue a degree. Online learning has the capacity to remove barriers, particularly for adult learners.

Employer perceptions. Perhaps due to the many challenges facing online education, employers have indicated that they do not perceive online education as credible, or would prefer to hire an applicant who has a degree from a traditional four-year institution (Gaytan, 2009; Grossman & Johnson, 2016; Roberto & Johnson, 2019). Similarly, school administrators who did not have personal experience with online education were also more hesitant to hire teachers whose coursework was primarily taken online (Fogle & Elliott, 2013; Linardopoulos, 2012).

Establishing the Need for Distance Education in Teacher Education

Teacher shortage. The trend towards online teaching and learning in higher education shows no signs of diminishing, therefore, it is imperative to examine the literature on distance education in teacher education. According to Naranjo (2018), the field of teacher education faces two primary and pressing challenges that necessitate the need for teacher preparation programs to innovate by (a) equipping a sufficient number of qualified special education teachers to keep pace with the market demand, and (b) equipping general education teachers to teach students with disabilities in inclusive classrooms. The teacher shortage in the United States is a salient reason why teacher preparation programs are seeking innovative methods to attract future candidates. The teacher shortage has hit especially hard in the areas of special education, science, technology, engineering, and mathematics (Cowan, Goldhaber, Hayes, & Theobald, 2016; Naranjo, 2018). Specifically, the shortage is predominantly in urban and rural locations (Cowan et al., 2016; Milner & Lomotey, 2013). Given the critical need to prepare effective special education teachers, teacher preparation programs are working to increase enrollment while maintaining high-quality programs by offering courses in a variety of delivery models (Caywood & Duckett, 2003; Gillett, Cole, Kingsbury, & Zidon, 2007; Wake & Bunn, 2015). While offering a variety of delivery options may be an effective and innovative way to attract more candidates to the field of education, there are concerns whether online teaching and learning provides the same high-quality learning experiences necessary to successfully prepare teachers as traditional face-to-face courses can (Downing & Dyment, 2013; Fogle & Elliott, 2013; Severino & DeCarlo, 2017).

Most of the literature relating to teacher education and program delivery has focused on student and teacher satisfaction, advantages and disadvantages of the logistical delivery, and descriptions of programs that were developed (Downing & Dyment; 2013; Smith & Kennedy, 2014; Vernon-Dotson et al., 2014). According to Gillett et al., (2007), teacher candidates continue to request online course delivery options because they value the convenience, have potential to individualize and personalize their learning experiences, and can receive prompt feedback. Vernon-Dotson et al. (2014) reviewed the literature regarding course delivery methods related to preparing special education teachers and found 17 studies that were qualitatively analyzed for themes. Their analysis led to the emergence of five major themes: (a) established need (e.g., teacher shortage, recruitment and retention, geographic outreach); (b) effectiveness (e.g., technology, student perceptions, instructor insights); (c) logistics (e.g., time, comfort, flexibility); (d) instructional methods (e.g., interactions, feedback, participation); and (e) critical factors (e.g., instructor quality, evaluation, population). While the need for the purpose behind the studies is clear, what is also needed is to explore the effectiveness of the online delivery model.

Effectiveness in teacher education courses. A study by O'Neal et al. (2007) examined the effectiveness of online learning compared to on-campus instruction by using student achievement and satisfaction data, but found no significant difference in achievement or satisfaction whether the course was offered online or face-to-face. Similarly, Caywood and Duckett (2003) studied the impact an online or face-to-face course on behavior management had on graduate students' academic performance and management skills. They also found no significant difference between the two groups. Dell (2012) conducted a longitudinal study in which she examined the competency level of an online elementary education cohort (n = 67) compared to traditional face-to-face program completers (n = 86) and found that the online cohort demonstrated the same level of competencies as those in the face-to-face program. Another study

(McDonnell et al., 2010) that explored the influence of online and face-to-face coursework on teacher candidates' acquisition of content and their ability to apply the newly learned skills and knowledge in the classroom, found no significant difference between the groups. Vernon-Dotson et al.'s (2014) review of the literature regarding effectiveness between distance and face-to-face courses stated that "no clear differences were noted between studies comparing traditional education to distance education" (p. 41). They went on to affirm that when looking at course delivery, participants did not perform differently, and the degree of satisfaction was virtually the same. According to their work, distance and face-to-face courses were equally effective. The same finding was affirmed in a review of the literature done by Smith and Kennedy (2014).

Scheetz and Gunter (2004) noted that positive outcomes could be attributed to teacher candidates' ability to choose their delivery model based on their learning style and needs. Vernon-Dotson et al. (2014) specified that other critical factors were represented within the literature, but did not directly address the following factors: (a) quality of the instructor, (b) need for a standardized evaluation of online education, and (c) skill sets needed by the diverse populations that were served.

Self-Efficacy

The present study was based on Albert Bandura's (1977) social cognitive theory, which includes the construct of self-efficacy. Self-efficacy is an individual's belief in their ability to perform behaviors that are necessary to complete a specific task (Bandura, 1977). This theory asserts that people learn through observing others complete a task, and behavior is influenced by personal, behavioral, and environmental factors. Self-efficacy beliefs have been strongly linked to teacher performance, and prior research has shown that self-efficacy beliefs are associated with teacher effectiveness, positive student outcomes, and positive attitudes towards teaching in an inclusive setting (Avramidis, Bayliss, & Burden, 2000; Bakar, Mohamed, & Zakaria, 2012; Sharma, Loreman, & Forlin; 2011). These beliefs have also been found to be a strong indicator of teacher candidates' success in their future teaching careers (Chesnut & Burley, 2015). Self-efficacy beliefs are task-specific and begin to develop early on in teacher candidates' preparation (Tschannen-Moran, Hoy, & Hoy, 1998). Since these beliefs are task-specific, it is important that studies are built around specific skills (e.g., inclusive teaching, teaching reading, behavior management).

There has been very little research published on the nature of distance learning and self-efficacy belief development among teacher candidates. Additionally, virtually no research has been conducted on the relationship between course delivery models and teacher candidates' self-efficacy beliefs towards teaching in an inclusive classroom. One of the only studies (Severino & DeCarlo, 2017) linking teacher candidates' efficacy beliefs and distance education involved a course where candidates tutored struggling readers in a field experience in which they were either enrolled in a flipped or a fully online course. Their study explored how the course delivery model influenced the participants' self-efficacy beliefs and their understanding of the structure of the English language. Using the Teacher Efficacy scale (TES; Hoy & Woolfolk, 1993), they found that there was no statistically significant difference between the participants regarding overall TES scores. However, participants in the face-to-face sections of the course showed a significant change between the pre- and post-test scores regarding personal efficacy, which is a subscale of the TES.

Significance of the Study

Several studies have suggested that foundational content such as that covered in an introductory course is often the first taken within teacher preparation programs. If these courses are offered in a quality online format, then they have the potential to increase access to critical and valuable content that will meet the scheduling and access needs of a broad range of teacher candidates (Hughes & Hagie, 2005; Naranjo, 2018). According to Vernon-Dotson et al., (2014), there is limited research and a need for more attention to be given to how teachers are prepared for special education contexts regarding course delivery formats. There is even less research specific to how course delivery impacts teacher candidates' self-efficacy beliefs towards teaching in an inclusive classroom. Therefore, it is important for teacher preparation programs to evaluate the impact various course delivery models have on the development of teacher candidates' self-efficacy beliefs (Vernon-Dotson et al., 2014). This study seeks to determine if course delivery (face-to-face flipped or asynchronous online) impacts participants' self-efficacy beliefs towards teaching in an inclusive classroom.

Method

A causal-comparative research design was used to examine the influence of course delivery (face-to-face flipped or asynchronous online) on participants' self-efficacy beliefs toward teaching in an inclusive classroom. The following research questions were used to guide the study: (a) Is there a relationship between completing an introduction of exceptionalities course and participants' self-efficacy toward teaching an inclusive classroom? (b) Is there a relationship between completing an introduction of exceptionalities course in an asynchronous online or face-to-face flipped format on participants' self-efficacy beliefs toward teaching in an inclusive classroom?

Participants

The participants in this study were undergraduate students who enrolled in an introduction of exceptionalities course at a mid-size university located in the Midwest US. The participants self-selected into the course delivery model they preferred. Most of the participants were not admitted into the teacher preparation program but were pursuing the academic path to gain admittance to teacher education. The demographics of the participants are represented in Table 2.

Table 2

Participant Demographics (N = 100)

Description	Frequency	Percentage
Gender		
Male	16	16%
Female	83	83%
Other	1	1%
Age		
17–19 years	72	72%
20–22 years	21	21%
23–25 years	3	3%
25–30 years	4	4%
30 years and up	0	0%
Major area		
Early childhood education	6	6%
Elementary education	34	34%
Secondary education (minor)	27	27%
Special education	11	11%
Elementary/early childhood (dual)	4	4%
Elementary/special education (dual)	11	11%
Other	6	6%
Non-licensure	1	1%
Class standing		
Freshmen	51	51%
Sophomore	32	32%
Junior	10	10%
Senior	6	6%
Data missing	1	1%
GPA		
4.0–3.5	46	46%
3.4–3.0	29	29%
2.9–2.5	22	22%
below 2.5	3	3%

Courses

There were five sections of the course; two were taught in a face-to-face flipped model and the other three were taught asynchronously online. All sections were taught by two adjunct instructors, one of them being the researcher for this study. Each section was built from a master course to ensure uniformity of content, assignments, and assessments. The course incorporated lectures and activities, including topics pertaining to special education such as (a) history, (b) legislation, (c) collaboration, (d) identification, (e) evaluation, (f) educational programming, (g) continuum of placements, (h) related services, and (i) a variety of disabilities categories. The key differences between the two delivery formats were that participants in the flipped classroom met twice a week to engage in discussions, apply what they had learned, and participate in group projects. Participants in the asynchronous online sections held online discussions with their peers and completed all their assignments individually.

Instrumentation and Data Collection

Data were collected using a pre-existing and validated self-report survey called the Teacher Efficacy for Inclusive Practices (TEIP) scale (Sharma et al., 2011) and a 13-item demographic questionnaire. Data collection occurred at the beginning and end of the course, but since one of the course instructors was also the researcher, the analysis did not begin until the course was finished and final grades were posted. The study received institutional review board approval before data collection began.

The TEIP is made up of 18 items about the participants' perception of their ability to effectively perform inclusive teaching practices. All 18 statements were assessed through a 6-point Likert item scale consisting of *strongly disagree*, *disagree*, *disagree somewhat*, *agree somewhat*, *agree*, and *strongly agree*. The highest possible score on the scale was 108, which indicates a very high sense of self-efficacy toward teaching in an inclusive classroom, and the lowest possible score was 18, which indicates a very low sense of self-efficacy toward the specific task. The TEIP scale is made up of three subscales that each have six items. The three subscales are (a) efficacy to use inclusive instruction (EII); (b) efficacy in collaboration (EC); and (c) efficacy in managing behavior (EMB). The three subscales are valuable because they provide a more detailed understanding of specific tasks in which participants feel efficacious, or the lack thereof, in performing.

Table 3

Teacher Efficacy for Inclusive Practices (TEIP) Scale Questions

TEIP questions
1. I can make my expectations clear about student behavior.
2. I am able to calm a student who is noisy or disruptive.
3. I can make parents feel comfortable about coming to school.
4. I can assist families in helping their children do well in school.
5. I can accurately gauge student comprehension of what I have taught.
6. I can provide appropriate challenges for very capable students.

7. I am confident in my ability to prevent disruptive behavior in the classroom before it occurs.
8. I can control disruptive behavior in the classroom.
9. I am confident in my ability to get parents involved in school activities of their children with disabilities.
10. I am confident in designing learning tasks so that the individual needs of students with disabilities are accommodated.
11. I am able to get children to follow classroom rules.
12. I can collaborate with other professionals (e.g., teachers, related service providers) in designing educational plans for students with disabilities.
13. I am able to work jointly with other professionals and staff (e.g., teacher assistants, other teachers) to teach students with disabilities in the classroom.
14. I am confident in my ability to get students to work together in pairs or small groups.
15. I can use a variety of assessment strategies (e.g., portfolio assessment, modified tests, performance-based assessment, etc.).
16. I am confident in informing others who know little about laws and policies relating to the inclusion of students with disabilities.
17. I am confident when dealing with students who are physically aggressive.
18. I am able to provide an alternate explanation or example when students are confused.

Sharma et al. (2011) reported that the content validity of TEIP was confirmed by six other faculty members, excluding the developers, who were identified as authorities in educational psychology and inclusive education. Additionally, the instrument was used in follow up studies results indicate that the TEIP scale is valid and reliable (Malinen, Savolainen, & Xu, 2012; Savolainen, Engelbrecht, Nel, & Malinen, 2012).

Results

A paired samples *t* test was conducted to analyze the data for research question one: Is there a relationship between completing an introduction of exceptionalities course and participants' self-efficacy toward teaching an inclusive classroom? The results indicated that the mean for the pre-TEIP survey (M = 78.11, SD = 13.82) was significantly lower than the mean of the post-TEIP survey (M = 91.30, SD = 9.80); $t(98) = 4.52$, $p < .05$. The standard effect size index, Cohen's d, was 1.10, which indicated a considerable and consistent difference on the 6-point Likert ratings on the pre- and post-TEIP survey. The 95% confidence interval for the mean difference between the two surveys was -15.96 to -10.42. Therefore, the participants reported a higher sense of efficacy after completing an introduction of exceptionalities course.

An independent-samples *t* test was used to analyze the data for research question two: Is there a relationship between completing an introduction of exceptionalities course in an asynchronous online or face-to-face flipped format on participants' self-efficacy beliefs toward teaching in an inclusive classroom?

The results in Table 3 show that participants' sense of self-efficacy did not significantly differ between delivery models (face-to-face flipped, $n = 48$ and asynchronous online, $n = 52$).

Table 4

Mean Differences in Efficacy for Preservice Teachers on TEIP Depending on Delivery Format

Survey instrument	Asynchronous online		Face-to-face flipped		Cohen's *d*	
	M	*SD*	*M*	*SD*	*T*	*d*
TEIP	91.04	8.26	91.58	11.31	.08	.78

Note. $*p < .05$.

Discussion and Conclusions

Prior literature in the domain of teacher education and delivery models has primarily explored the outcomes of satisfaction, logistical delivery, and program descriptions. Therefore, there is little to no prior literature that has explicitly explored the influence of the delivery model on teacher candidates' self-efficacy beliefs toward teaching in an inclusive classroom. Since the literature is scant, it is difficult to compare differing constructs (e.g., self-efficacy beliefs to the level of course satisfaction). However, the results of this study support the findings of Severino and DeCarlo's (2017) study in that overall self-efficacy scores did not significantly change between pre- and post-test after participating in coursework.

Limitations of the Study

Data collection occurred during a single semester, so only one set of participant responses was analyzed; therefore, a richer understanding of the results and implications could be gained if data collection occurred longitudinally. In addition, the results may not be generalizable to other institutions that greatly vary in terms of demographics. Additionally, responses to the survey were self-reported; such responses may provide opportunity for some participants to answer how they believe they should or to answer carelessly (Northrup, 1997).

Data were collected from five sections of the same course that were taught by two different instructors. While the sections were built from a master course in order to maintain uniformity, variances between the instructors' teaching styles, personality, and content delivery could have played a role in belief development. It is challenging to account for how qualitative differences in the instructors influenced the participants' perceptions and experience of each course and its content.

Implications for Teacher Education

Since completing an introduction of exceptionalities course was shown to significantly and positively influence participants' self-efficacy beliefs toward teaching in an inclusive classroom, it is recommended that teacher preparation programs be mindful of the value and necessity of similar courses in their

curriculum. Offering such courses is particularly important for candidates who are early in their preparation because Bandura (1977) posited that self-efficacy beliefs are often difficult to change once they have been established. Since the participants in this study were early in their teacher preparation coursework, their beliefs were likely just beginning to form and were highly malleable. Considering the strong, positive change in self-efficacy scores, it is recommended that teacher preparation programs continue to offer introductory coursework early in the preparation process so beliefs can continue to develop. Petty, Good, and Putnam (2016) posited that the first step in addressing issues within teacher preparation is to ensure that teacher candidates receive substantive courses in special education, and special attention should be paid to the content of foundational courses.

The primary goal of the study was to determine if efficacy beliefs towards the specific task were influenced based on the course delivery (asynchronous online or face-to-face flipped). Since there was no significant difference between the two delivery methods, it is recommended that teacher preparation programs consider how to meet the needs of current and future teacher candidates as represented within the extant literature. It has been suggested that how foundational courses are delivered is as important as the content of the courses (Petty et al., 2016). Making these courses available to teacher candidates in a variety of formats has the potential to meet the scheduling and accessibility needs of a diverse group of teacher candidates (Petty et al., 2016). Additionally, teacher preparation programs are more likely to make a positive impact on the national teacher shortage if they are willing to fulfill the needs of the future workforce by providing course delivery options that are convenient, and allow candidates to personalize their learning and receive prompt feedback (Gillett et al., 2007; Hughes & Hagie, 2005).

In consideration of the delivery format, alternative pedagogical strategies should be employed as the complexity of the course curriculum evolves. One of the primary tenets of self-efficacy is that it is developed through observation of someone modeling the task (Bandura, 1977). Dyment, Downing, and Budd (2013) asserted that two major concerns facing online education within teacher education are the challenges of modeling effective teaching strategies and the difficulty in an online setting for instructors to be explicit with candidates about pedagogical choices while teaching. These are salient concerns that have the potential to directly impact candidates' self-efficacy to instructional tasks. However, it is recommended that instructors who teach methods courses in an online format should not strive to duplicate what is occurring in a face-to-face setting; rather, they should find alternative ways to achieve the same outcomes. This will likely mean using alternative pedagogical strategies and employing a variety of techniques that support the learning goals. There are indicators from other studies that with more experience teaching online, it is possible to achieve effective results (Fish & Gill, 2009; Robina & Anderson, 2010).

Suggestions for Future Research

There continues to be a pressing need for more research exploring the impact of course delivery models on teacher candidates' beliefs towards inclusion and teaching. The future research suggestions include exploring the relationship between varying outcomes, demographic trends between candidates who select certain delivery models, and the outcomes of varying levels of courses.

First, since the prior literature has frequently explored factors such as degree of satisfaction and achievement between delivery models, it would be helpful to have a better understanding of whether there

is a relationship between student satisfaction with the course and self-efficacy, or student achievement and self-efficacy. Being able to determine the relationship between varying factors and self-efficacy could provide teacher preparation programs and teacher education with more information about programmatic or instructional choices. Since instructional methods used in distance education vary greatly, developing a more comprehensive understanding of the interaction between variables could have a significant impact on student learning outcomes, and allow teacher educators to identify and implement best practices specifically for distance education (Vernon-Dotson et al., 2014).

Another future research need is for studies to explore the demographics of teacher candidates who self-select into specific course delivery models. It is likely that candidates have specific learning preferences, dispositions, or circumstances that encourage them to choose between face-to-face or online courses. As commonly noted, distance education is a convenient option for non-traditional students because it allows them to pursue their education with flexibility, which is critical if they are balancing coursework and a complex schedule. One study noted that traditional undergraduate students felt that online course work was difficult and time-consuming, while non-traditional students indicated that they felt more comfortable in that educational setting (O'Brien et al., 2012). Understanding the demographic trends of students who opt-in for specific delivery models would enable educators to better meet students' needs.

The final future research suggestion is to explore the influence a delivery model has on varying types of courses (e.g., introductory, theory, methods, practicum) in relation to self-efficacy development. In a review of literature on course delivery methods for preparing special education teachers, the researchers found that the vast majority of distance education courses were introductory courses (Vernon-Dotson et al., 2014). Since teacher preparation programs are increasingly using distance education as a tool to recruit greater numbers and more diverse candidates, it is important that the implications of this strategy are more fully understood. This need is particularly important since self-efficacy is heavily influenced by modeling. Additionally, as Bore (2008) cautioned, "it is critical however, that teacher preparation programs do not sacrifice the quality of their course content for the sake of convenience" (p. 8). Since distance education is a growing trend in higher education, is it imperative that teacher education departments continue research that will explore the influence of course delivery on teacher candidates and their preparation.

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