

The Relationship Between Pre-Service Training and Teaching Self-Efficacy for Inclusive Practices

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Introduction

Directives by the Individuals with Disabilities Act (IDEA) and the Division for Early Childhood (DEC) around early intervention focus on service provision that occurs in natural or least restrictive environments, that is family-centered, and outcomes that are functional within the context of the family's or child's routine (Division of Early Childhood, 2014; United States Department of Education, 2017). Teachers are continuing to come away from pre-service programs unprepared to teach in inclusive settings, leading to lower feelings of self-efficacy in teaching practices (Lewis et al., 1999). Despite the directives by IDEA and recommendations by DEC, institutions continue to struggle with the incorporation of content and experiences specific to early intervention (Cochran et al. 2012; Stayton, Whittaker, Jones, & Kersting, 2001). It continues to be important to understand the extent of experiences related to pre-service programming and how those experiences relate to a teacher's self-efficacy for inclusive practices. Little research exists that examines the teaching self-efficacy of preschool teachers (von Suchodoletz, Jamil, Larsen, Hamre, 2018). The purpose of this paper is to address a gap in the literature around constructs of teaching self-efficacy for inclusive practices. More specifically, this study intends to examine how in-service teachers' perception of their pre-service programming has influenced their feelings of confidence and competence in settings that serve children with disabilities.

Teaching Self-Efficacy

Workforce preparation is the desired outcome for all teachers, especially those who are working in settings that include children with disabilities. An integral part of a prepared workforce includes how teachers view their abilities and capabilities around working in inclusive settings. Self-efficacy, according to Bandura (1977) is a person's belief about their capability to manage life events and carry out appropriate actions as it relates to specific situations. Feelings and beliefs around self-efficacy are tied to teachers' perceptions of pre-service preparation and professional development (Ingvarson, Meiers, & Beavis, 2005; Lu, 2005; Tschannen-Moran & Hoy, 2007) and have been shown to impact how teachers implement and embrace certain educational practices (Jerald, 2007; Rimm-Kaufman & Sawyer, 2004; Sugawara, Ruder & Burt, 1998; Trivette, Dunst, Hamby, Meter, 2012). Self-efficacy is generally believed to consist of two constructs: 1) confidence (i.e., energy) and 2) competence (i.e., performance) (Bruder, Dunst, Wilson, & Stayton, 2013; Zimmerman, 2000). Despite being considered as interrelated constructs, confidence and competence are related to distinct characteristics of a person's awareness of his or her capabilities (Kawamura, 2007). Presently, little is known about confidence and competence beliefs related to inclusion and early intervention (Bruder, Dunst, & Mogro-Wilson, 2011; Bruder, Dunst, Wilson, & Stayton, 2013; von Suchodoletz, Jamil, Larsen, & Hamre, 2018). Given the scarcity of information in the literature, the current study attempts to address influential factors related to these elements of teaching self-efficacy. These constructs provide a foundation for an individual's self-perception of knowledge and skill around specific

topics or job-related tasks. Surveys of teacher self-efficacy, as it relates to educational practice has indicated it to be instrumental an individual's ability to make a change in educational practices (Dicke et al., 2014; Trivette, Dunst, Hamby & Meter, 2012; Rimm-Kaufman & Sawyer, 2004) and has been shown to be associated with successful teaching within inclusive settings (Sharma & Nuttal, 2017). A better understanding of the influence these beliefs have on teacher's motivation and subsequent behavior is important. Self-confidence and self-competence are considered integral in the motivation and regulation of an individual's actions in both their daily and professional lives (Bandura, 1977; Skinner, 1995).

Previous research reports that teachers who believe they are insufficiently equipped feel less competent than confident in their skills around early intervention or inclusion (Dicke et al., 2014; Durr, Chang, & Carson, 2014; Gürbüzürk & Sad, 2009). What is interesting to speculate is the reason behind why higher feelings exist within only one construct. It seems that beliefs in one's own ability to effectively use knowledge (i.e., competence) and their feeling that they have the ability to carry out tasks self-assuredly (i.e., confidence) would positively correlate with the other. Kruger & Dunning (1999) describe this as illusory superiority. Individuals mistakenly see their abilities and skills higher than they are. Strengthening our understanding of self-efficacy beliefs as it relates to inclusion and early intervention is imperative and has the potential to be far-reaching. According to Macmillan & Meyer (2006), teachers in inclusive settings reported increased anxiety around the implementation of inclusive practices. Increased demands in more diverse classroom settings heighten teacher's perception of being unprepared to meet these challenges (Andersen, Klassen & Georgiou, 2007). Deeper insight into the relationship between confidence and confidence and preservice preparation could lead the development of a system-wide approach. For example, Bruder, Dunst, Wilson & Stayton (2013) suggested that the periodic assessment of self-efficacy beliefs around preservice practices could serve as tool for determining the effectiveness of coursework, teaching experiences and other preservice activities. This has the potential to provide 'real-time' data that can lead to on-the-spot remediation of curriculum. This might include restructuring the content within courses or providing students with more varied field experiences. In essence, the preservice period becomes individualized.

According to Bruder, Dunst, Wilson, & Stayton (2013) more investigation is needed to understand how pre-service preparation and in-service activities influence teachers' beliefs and how the outcomes of those activities develop a stronger feeling of self-efficacy. The literature suggests that exiting pre-service teacher education programs unprepared affects one's beliefs about the adequacy of one's teaching skills (Ingvarson, Miers, & Beavis, 2005; Tschannen-Moran & Hoy, 2007) and that only 20% to 40% of teachers believe they were adequately prepared (Bruder, Dunst, Wilson, & Stayton, 2013; Lewis et al., 1999). Entering the workforce without feeling confident about the skills needed to be successful in inclusive settings can impact how teachers view their ability to be effective teachers. In fact, feelings of preparedness are one of the best predictors of self-efficacy beliefs (Dunst & Bruder, 2014) and teacher quality (Lewis et al., 1999; Sharma & Nuttal, 2017). It has also been noted that relationships between teacher knowledge, attitudes and comfort levels help promote a positive attitude toward inclusion (Loreman, Forlin, & Sharma, 2007; Mitchell & Hedge, 2007; Sokal & Sharma, 2017; Sokal, Woloshyn, & Funk-Unrau, 2013). It is during this pre-service period that well-designed programming and curricular experiences can have a dramatic effect on a teacher's self-efficacy

(Romi & Leyser, 2006). According to Ross (1994) and Hoy & Spero (2005), timing is important. Pre-service education and preparation are seen as a stage marked by significant changes in teaching self-efficacy. As a result, this period of time becomes instrumental in helping to shape self-efficacy beliefs. It is important to create experiences that provide pre-service teachers opportunities to be successful and to gain personal mastery in approaches and practices around inclusion.

Pre-Service Preparation

The preparation of students to work in Part C and Part B programs varies across states and teacher preparation programs. In accordance with the recommendations made by the DEC (Sandall, Hemmeter, Smith, & McLean, 2005) and the directives in IDEA, professionals working in early intervention must understand recommended practices associated with quality intervention within that population. Job knowledge must be comprised of the ability to implement discipline-specific practice within the family-centered framework that is required in inclusive settings (Campbell, Chiarello, Wilcox, & Milbourne, 2009; Coufal, 1993). Members of each discipline must understand the roles and responsibilities each member of the team assumes. This includes the processes of collaborative teamwork, the means by which caregivers are instrumental in the decision-making and delivery of services, and the ability to engage in family-centered, culturally responsive services in the context of the child's natural or least-restrictive environment (Division of Early Childhood, 2014). To realize best practice, which is also policy-consistent, it is important to understand the current personnel preparation practices for early career teacher educators. A better understanding of how pre-service coursework impacts teachers' perception of their teaching ability has the potential to bring about change within higher education programs (Bruder, Dunst, Wilson, & Stayton, 2013). Transformations in educational pedagogy can directly impact the quality of services delivered to young children with disabilities and their families (Engstrand & Roll-Pettersson, 2014; Roll-Pettersson, 2008; Taliaferro, Hammond & Wyant, 2015). Given that changes at an institutional level take time and do not directly impact teachers currently practicing in early intervention classrooms, it may be necessary to consider other routes while continuing to pursue change in higher education.

Despite changes in recommendations made by the DEC, early childhood teachers are leaving pre-service programs inadequately prepared to work in settings with young children with disabilities and their families (Chang, Early & Winton, 2005; Early & Winton, 2001). The content within teacher education programs has direct bearing on a teacher's ability to provide appropriate instructional support to children within early childhood special education classrooms (Mitchell & Hedge, 2007). Currently, the majority of teacher preparation programs offer degrees aimed at the integration of both typical and special needs populations (Miller & Stayton, 1998). Ideally, this results in educators trained to address the diversity of both groups of children. The literature, however, indicates that it is incorrect to assume that teachers have command of both disciplines (Mitchell & Hedge, 2007). This has the potential to result in a lack of confidence around teaching skills and perceptions of inclusion.

Proctor and Niemeyer (2001) investigated teacher preparation and their judgments about the use of inclusion practices. They reported that teachers' beliefs about how well they were prepared influenced their assessment of how successful they would be at implementing those practices.

Lack of targeted coursework coupled with the types and amounts of experiences surrounding teaching children with diverse needs points to a need for change at the pre-service level. Specifically, the lack of preparation and hands-on experience in home visiting and coaching, current research-based approaches to working with specific disabilities and understanding the importance of functional goals and outcomes are just a few areas where teacher skill are paramount. One challenge, however, is overcoming the belief that college coursework is often viewed as having little impact or as ineffective (DeSimone & Parmer, 2006). This is important to consider given that the number of special education courses teachers receive directly impacts their attitude about inclusion (Buell, Hallam, Gamel-McCormick, & Scheer, 1999; Sokal & Sharma, 2017). The current investigation focuses on competence and confidence that are part of a larger the larger construct of teaching self-efficacy and its relationship to pre-service education and training. Specific educational experiences that target knowledge and understanding of diverse groups of children, including those with disabilities, are often expected to be included in pre-service teachers' coursework. In many cases, however, programs are limited in their ability to incorporate the necessary components needed for students to feel capable and confident as they move into their early careers (Bruder, Dunst, Wilson, & Stayton, 2013; Lewis et. al., 1999). Understanding how teachers perceive their pre-service educational programming as providing them the skills needed to be successful in their current position is important. This study attempts to shed light on how these are related. This paper addresses two research questions: 1) to determine if any relationships exist between pre-service teacher preparation and teaching self-efficacy 2) to determine if experiences gained in pre-service teacher education predict current teaching self-efficacy around inclusive practices.

Participants

A random sample of 250 licensed early childhood educators were selected to complete a survey on pre-service preparation, professional development and teaching self-efficacy. Participants were identified through a state repository that documented those individuals licensed in early childhood education in Kansas. The current study was approved through the author's Institutional Review Board and informed consent was obtained from all participants. A total of 62 people participated (overall response rate of 24%) in the survey. Participants (n = 35) were excluded from the final sample due to a number of factors (i.e., failure to complete survey, no current state approved licensure, did not receive initial license in the state) and were not included in the analyses. The final number of respondents included were 27 individuals. In terms of ethnicity, 24 (89%) respondents indicated were Caucasian, 1 indicated Asian (.04%), and 2 (.07%) did not indicate race. All participants were female and received their teaching certificate in Kansas. Sixty-six percent of the respondents held an advanced degree (i.e., Master's degree). Approximately 67% of the participants had been teaching for less than 10 years and 59% teaching less than 5 years. All reported that they are currently employed in an educational setting in Kansas.

Measures

Pre-Service Preparation. Pre-service preparation was measured using an adapted version of the Teacher Activity Scale (Garet et al., 1999) which asked participants to answer questions within two domains related to pre-service preparation. The first content area focused on the extent to

which certain educational topics were emphasized during their pre-service teacher education training program. Items ($n = 17$) were constructed using a 4-point Likert scale that ranged from 1 (no emphasis) to 4 (major emphasis) and included such topics as *curriculum standards, inclusion, differentiated instruction, advocacy*, etc. In order to determine the internal consistency, a Cronbach's Alpha was conducted. The analysis revealed a high internal consistency ($\alpha = .90$). The second content area asked participants to rate how well certain experiences fit with their educational pedagogy and to what extent they felt prepared for their current professional position. Items ($n = 7$) were constructed using a 4-point Likert scale that ranged from 1 (none) to 4 (major) and asked respondents to answer the extent their pre-service development adhered to the listed items. These included such entries as: *being consistent with your own goals for education, adequately prepared you to work in your current position, supportive of district standards/curriculum frameworks, and supportive of IDEA or DEC recommended practices for children with disabilities*, etc.. In order to determine the internal consistency of this portion of the Teacher Activity Scale, a Cronbach's Alpha was conducted. The analysis revealed a moderately high internal consistency ($\alpha = .86$).

Teaching Self-Efficacy. To measure teaching self-efficacy, participants completed the Teacher Efficacy for Inclusion scale (TEI) (Hollander, 2011). The TEI consisted of 24 items that measures teachers' beliefs about their own teaching practice as it relates to preschool-age children with disabilities. Items were constructed using a 4-point Likert scale that ranged from 1 (strongly disagree) to 4 (strongly agree). Examples of items included were: *I am able to incorporate goals from IEPs of special education students into my teaching, I can support the social integration of children with disabilities during unstructured activities, and I am able to create a classroom environment where all children are accepted*. In order to determine the internal consistency of the TEI, a Cronbach's Alpha was conducted. The analysis revealed a high internal consistency ($\alpha = .96$) for the scale. Responses were then tallied to create an overall self-efficacy score for each individual.

To further delineate between perceptions of confidence and competence, the TEI was parsed into dichotomous categories. Determinations of categorical placement were made based upon previous definitions of competence and confidence and investigator derived decisions. Cronbach's Alpha was conducted on each subscale to determine internal consistency for both confidence and competence measures. A high internal consistency was noted for competence ($\alpha = .93$) and for confidence ($\alpha = .94$). Responses were tallied to create an overall score for each subscale.

Procedure

Participants were emailed survey questions using Qualtrics. Qualtrics is a survey distribution platform that allows individuals to access and answer questions on-line. Finished survey responses are compiled in Qualtrics for further analysis.

Data analysis

For the current investigation, initial bivariate correlations were conducted to determine the relationships between teaching self-efficacy measures and perceptions of pre-service preparation.

In addition, three linear regression analyses were conducted. The first was aimed to determine if teaching self-efficacy for inclusive practices was predicted by perceptions of pre-service preparation. The second and third were conducted to determine if teaching competence and teaching confidence was predicted by perceptions of pre-service preparation. Composite variables were created for both independent and dependent variables. Dependent variables included total scores for TEI and scores representing confidence and competence subscales of the TEI scale. Items from the TEI for the total score were summed to create an overall measure of teaching self-efficacy. In order to create separate confidence and competence scores, items from the TEI that represented each of these domains were summed separately. Independent variables included the creation of a composite score of the overall emphasis on inclusive practices in their pre-service preparation.

Results

The purpose of the current study was two-fold: 1) to determine the relationship between pre-service preparation and teaching self-efficacy for inclusive practices and 2) to determine if experiences gained in pre-service programming predicted current feelings of teaching self-efficacy around inclusive practices.

Table 1 shows the means, standard deviations and ranges for the outcome measures. Both the predictor variable (i.e., pre-service preparation) and outcome variables had considerable variability where the average scores were centered between the lowest and highest possible scores.

Table 1

Means, Standard Deviations and Ranges for the Predictor and Outcome Measures.

Variables	<i>Mean</i>	<i>SD</i>	Range
Preservice preparation	53.83	9.25	38 - 74
Self-efficacy	73.56	10.07	40 - 96
Competence	28.33	4.00	16 - 36
Confidence	45.22	6.27	24 - 60

In order to determine what relationships existed between pre-service preparation and teaching self-efficacy, bivariate correlations were conducted. Table 2 illustrates the results.

Table 2

Pearson Correlations Among Teaching Self-Efficacy (SE) and Pre-Service Perception

	Total Teaching SE	Teaching SE: Confidence	Teaching SE: Competence	Perceptions of Pre-Service Preparation	Pre-Service Preparation Met Needs
Total Teaching SE	1	.971**	.988*	.409*	.360
Teaching SE: Confidence		1	.922**	.359	.400
Teaching SE: Competence			1	.428*	.326
Perceptions of Pre-Service Preparation				1	.714**
Pre-Service Preparation Met Needs					1

**Correlation is significant at the .01 level

*Correlation is significant at the .05 level

In general, the results suggest the more prepared teachers felt leaving their pre-service programs, the higher their feelings of competence for inclusive practices. Measures of confidence were not related to perceptions of pre-service preparation.

Individual regression analyses were conducted for teaching self-efficacy and measures of confidence and competence. The results of the regression analyses are shown in Table 3. The predictor variables included an overall score for perception of pre-service preparation. Perceptions of pre-service preparation were related to general measures of self-efficacy as well as individual measures of competence. Teachers were more likely to indicate higher feelings of self-efficacy for inclusive settings if they indicated they had a more positive perception of how they were pre-prepared in their pre-service training. When measures of confidence and competence were individually examined, teachers were more likely to feel competent, rather than confident, in inclusive settings.

Table 3**Regression Analysis for the Relationship between Self-Efficacy and Pre-service Preparation**

Dependent measures	Predictors	Regression coefficients			
		<i>B</i>	β	<i>F</i> -test	<i>p</i> value
Self-efficacy	Pre-service preparation	.46	.41	4.43	.047
Competence	Pre-service preparation	.30	.43	4.94	.037
Confidence	Pre-service preparation	.16	.36	3.26	.085

Discussion

Teaching self-efficacy is tied to perceptions about pre-service education (Loreman, Sharma, & Forlin, 2013; Romi & Leyser, 2006). What is less well known is how the self-efficacy constructs of confidence and competence are related to teachers' feelings about their educational experiences, particularly around inclusive practices (Guo et. al., 2011; Klassen, Tze, Betts, & Gordon, 2011; von Suchololetz, Jamil, Larsen, & Hamre, 2018). The current study aims to address this gap. The adoption of specific practices has been shown to be influenced by each of these elements (Loreman, Sharma, & Forlin, 2013). Understanding how these relate to one another is important. Determining how to create and implement curricula that is both broad and specific at the same time is challenging. Providing a deeper understanding of how these are linked may lead to better decisions within teacher education programs. The purpose of the current study was to investigate if perceptions of pre-service education predicted feelings about teaching self-efficacy for inclusive settings. Teaching self-efficacy scores were related to teacher's feelings about pre-service preparation. As teachers' feelings about their pre-service preparation increased so did their feelings about their ability to work successfully in inclusive settings. Additional regression analyses indicated that perceptions of pre-service programming were a significant predictor of teacher's self-efficacy. Teachers perceptions about the types of educational experiences gained in their pre-service programs impacted how they felt about teaching in settings that included children with disabilities. This speaks directly to the importance of structuring programs within institutions of higher education with curricula and programming that represents the types of experiences they will encounter when entering the workforce. Designing coursework and clinical practicum opportunities that adequately address the needs of future teachers is key to helping them feel better prepared. The literature suggests those that involve "hands-on", mentored feedback allow students to feel supported and grow into confident and competent educators (Tschannen-Moran & Hoy, 2007). Additional investigation is needed to better determine what dosage of these experiences are necessary to produce desired changes in feelings of teaching self-efficacy.

When examined separately, the constructs of confidence and competence yielded different results. Teachers were more likely to feel competent in their current role when they had a higher perception of their pre-service educational experience. While it is difficult to determine what aspects of these are the most relevant, it is evident that pre-service programming provided teachers with the knowledge base needed to adequately perform their current duties. What is interesting to note, however, is the lack of significant results for the confidence construct. This

does not align with previous investigations (Gürbüzürk & Sad, 2009; Kawamura, 2007; Kruger & Dunning, 1999). Others have noted that responses tend to be overinflated for feelings of confidence, not competence. Despite having the background knowledge in early childhood education and inclusion, teachers' confidence in executing their skills were not significant. The difference between "learning" a skill and "doing" a skill may be a relevant assumption here. Learning through passive means about inclusive settings without application of them may be one explanation. It is possible that a lack of clinical, or experiential, opportunities were not available or were not representative of the types of environments early career professionals would enter upon graduation. For those students attending institutions in smaller, more rural areas for example, the availability of diverse inclusive settings may be limited. Another possibility to consider is that real-world experiences are often dramatically different than those contrived in classroom settings. In teacher education programs, it is simply impossible to replicate experiences that mirror those found in real-life. While both explanations may be at the root of this issue, the latter seems to be the more likely reason. Learned knowledge, while valuable, cannot fully represent what teachers encounter on a daily basis. This means that some elements of learning must occur on-the-job. This, for many teachers, may take time to absorb the intricate details of working in inclusive settings. As a result, teachers' feelings of confidence about their skills may take time to develop. What may be important to understand during this time of professional growth are what factors impact how quickly teachers gain confidence within inclusive settings. Perhaps, a closer look at how teachers are supported and provided with opportunities to continue learning are important areas to concentrate future studies. Access to professional development opportunities, the ability to participate in mentoring programs, or the use of colleagues as a resource may prove to be a valuable to helping teachers become confident educators. Understanding teachers' perceptions of the pre-service preparation provides insight into programs of higher education around curriculum and practice. Limitations (e.g., budgetary constraints) within institutions of higher education make it difficult to bring about the change that is needed to increase programming quality at the pre-service level. Investigations that focus on this topic can provide further evidence of the relevant educational training necessary to adequately prepare teachers for their profession. This, in turn, has the potential to sway policymakers and administrators who have control over the decision-making process. Addressing these issues is only the beginning. High degrees of teacher self-efficacy around inclusive practices is paramount given the focus is on children who are developmentally delayed or at-risk.

Limitations

The small sample size and use of a singular state from which responses were drawn are limitations of the current study. It is believed, however, that there are merits within the results of this current study. These indicate similarities with larger, national trends related to pre-service preparation and professional development within the area of special education. This study contributes to the literature by providing evidence that professionals continue to feel inadequately prepared to work in inclusive settings. It also illuminates the need to create a system that focuses on delivering quality, need specific professional development content.

An additional limitation of the current study is that is retrospective in nature, requiring the survey respondents to recall their perceptions of their pre-service educational experience. While many of the participants were recent graduates (i.e., within 2-3 years of their teacher preparation

program), several had been teaching in the field for a number of years. Given that retrospective studies rely on recall of past events, the participant's ability to accurately remember the circumstances may be subject to biases. This may result in depictions of previous situations and experiences as imprecise.

Conclusions

Pre-service teacher preparation, continuing professional development and teacher self-efficacy are interrelated. In order to better support teachers as they enter the workforce, it becomes increasingly important to understand how institutions of higher education can better prepare students to work in inclusive settings. Determining the combination and dosage of programming that builds students' competence as well as confidence is critical in laying the foundation for higher overall feelings of teaching self-efficacy. It is also necessary to note how the availability of resources impact changes at institutions of higher education. It is possible, in light of current financial limitations, that a continued lack of adequate opportunities may be detrimental to students enrolled in teacher education programs. Future studies must look at the types of curriculum and clinical experiences offered, what supports are available for teachers who are currently in the field and how the current financial climate is impacting decisions made within teacher education programs. This may lead, not only to the creation of a better system of professional development opportunities that can target specific areas of need, but a way to identify what elements are needed for producing highly qualified, competent and confident teachers.

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