ABSTRACT

PRESERVICE TEACHERS' ATTITUDES TOWARD INCLUSION AND SELF-EFFICACY IN THE CLASSROOM

by Erin Catherine Baker

This study examined the relationship between preservice special education teachers' attitudes toward inclusion and their level of perceived self-efficacy in teaching inclusive practices. The data collected was analyzed with Rasch to determine which aspects of attitudes toward inclusion and self-efficacy of inclusive practice components are easier or harder to agree with. This hierarchy highlighted that the preservice special education teachers surveyed are well versed in collaboration with other professionals, new teaching models, and setting expectations for students. However, it is harder for preservice teachers to endorse having training or knowledge of specific special education laws to effectively support students with disabilities. Preservice teachers also indicated lacking prevention and management strategies for students with interfering behaviors in the classroom. The comparison outcomes suggest that there is a weak positive correlation between how preservice teachers responded on the TATIS and TEIP scales. The current professional role of the preservice teachers had no significant impact on their responses for both the TATIS and TEIP scales. However, the study highlighted some implications for teacher training having a focus on special education laws, interfering behavior prevention and classroom management, and individualized instruction models for students with specific needs.

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Introduction

The topic of inclusion in the classroom has been widely popular and debated on by educational professionals (Swain, Nordness, & Leader-Janssen, 2012). Inclusion has been a popular term in the educational setting however, it is not simply the change of placement within the school that grants inclusion for students with and without disabilities. Polat (2011) describes inclusion as "the processes of changing values, attitudes, policies and practices within the school setting and beyond" (p. 50-51). Since the 1980s, federal mandates regarding inclusion have come about, like Individuals with Disabilities Education Act (IDEA, 2004) and No Child Left Behind (NCLB, 2001) which gave more of a structure to the definition of inclusion (Odom, Buysse, & Soukakou, 2011; Simpson, Lacava, & Sampson Graner, 2004). Special education teachers and intervention specialists are often the ones to implement such practices of inclusion which may influence teachers' attitudes. This leads educational professionals to think about how capable preservice teachers are when implementing inclusive practices in the classroom.

Bandura (1999) defines self-efficacy as "the belief in one's ability to influence events that affect one's life and control over the way these events are experienced" (p. 159). Self-efficacy in the classroom includes three different inclusive practices (instruction, collaboration, and managing disruptive behaviors) which can reveal how capable teachers are when implementing inclusive practices in the classroom (Bandura, 1999; Sharma, Loreman, & Forlin, 2012). School psychologists work with a variety of educational professionals in their careers as such having knowledge of what preservice teachers' attitudes toward inclusion and their perceived self-efficacy can help guide training for future teachers in the field of special education.

Literature Review

Attitudes Toward Inclusion

There is a significant amount of attention given to the idea of inclusion in the classroom. One reason for this is due to the federal mandates of the Individuals with Disabilities Education Act (IDEA, 2004) and No Child Left Behind (NCLB, 2001) that highlight the importance of inclusion of all students with or without a disability in the classroom. The reevaluation of IDEA in 2004 resulted in an increased number of students receiving specialized instruction being educated in general education settings. IDEA defines the least restrictive environment (LRE) being to the maximum extent appropriate children are educated in a general education setting (Odom, Buysse, & Soukakou, 2011). Similar to IDEA, NCLB helped to increase accountability that every child makes adequate yearly progress (Harvey, Yssel, Bauserman, & Merbler, 2010). As these mandates became more present in education, educational professionals and researchers have debated the idea and perceptions of inclusion, the preparation and training of teachers of when to include students, and the attitudes toward inclusion.

Leatherman and Niemeyer (2005) investigated in-service and preservice teacher attitudes toward inclusive practices as reflected in their behaviors. This was a qualitative study that utilized initial interviews, observations, and field notes (Leatherman & Niemeyer). Their results suggest that teachers' attitudes are influenced by their experiences in inclusive classrooms. Teachers also indicated that appropriate preservice training, support from administrators, and resource personnel was important regarding their attitudes (Leatherman & Niemeyer). They mentioned that all the teachers (in-service and preservice) "verbalized their positive attitude toward inclusion and felt it was an optimal environment for children with and without disabilities" (Leatherman & Niemeyer, p. 32).

A larger scale study by Varcoe and Boyle (2014) shares a different perspective on how having experience with students with disabilities can impact attitudes towards inclusion. Varcoe and Boyle surveyed 342 preservice teachers studying primary education at an Australian University. The participants' attitudes towards inclusion were measured with the 3 section *Teacher Attitude to Inclusion Scale* adapted (TAISA) (Varcoe & Boyle, 2014). This scale was originally made for in-service teachers and then adapted to be used with preservice teachers. The final measure of this study was to write down their definition of inclusive education. Varcoe and Boyle found that more positive attitudes towards inclusion came from preservice teachers that received training and could proficiently define inclusive education. In contrast to the Leatherman and Niemeyer findings, they found that "previous teaching experience impacted negatively on pre-service teachers' attitudes towards inclusive education" (Varcoe & Boyle, 2014, p. 332). A consensus on these two studies is that training and certain experiences can create positive attitudes towards inclusion however, depending on the teaching experience attitudes can be negatively impacted (Leatherman & Niemeyer, 2005; Varcoe & Boyle, 2014).

Improving Perceived Self-Efficacy for Inclusive Teaching

According to Bandura, teachers' perceived efficacy influences the classroom environment they make for students and the way they teach to help students learn (Bandura, 1999; Sharma, Loreman, & Forlin, 2012). Bandura's theory (1999) states that "a teacher with

high teacher efficacy in implementing inclusive practices would believe that a student with special learning needs can be effectively taught in the regular classroom" (Sharma, Loreman, & Forlin, 2012, p. 12). Klassen and Durksen (2014) mention that teaching experiences are crucial for the development of positive self-efficacy thoughts.

A separate section of research on this topic of preservice teachers' attitudes towards inclusion looks at how preservice teachers are prepared and trained and how that changes their attitude. Cook (2002) conducted a study with 181 undergraduate preservice general education teachers. Cook found that many of the participants did not feel prepared to teach students with disabilities in a general education classroom. Many preservice general education teachers have a positive attitude towards inclusion (Cook, 2002) however, they are not always equipped with the correct instruction material to adequately teach students with disabilities (Shippen et al., 2005). If teachers are ill-prepared to teach this can result in a negative attitude toward including students with disabilities (Swain, Nordness, & Leader-Janssen, 2012). Swain and colleagues (2012) highlight the importance of field experience to learn positive and collaborative ways to support students with and without disabilities in the classroom.

Measuring Attitudes Toward Inclusion and Perceived Self-Efficacy

Measuring attitudes toward inclusion and perceived self-efficacy of preservice teachers is typically done with survey measures. There have been studies that have utilized the *Teacher Attitudes Toward Inclusion Scale* (TATIS) (Cullen, Gregory, & Noto, 2010) and the *Teacher Efficacy for Inclusive Practices* (TEIP) scale (Sharma, Loreman, & Forlin, 2012). For example, a study by Sharma and Nuttal (2016) conducted a survey with preservice teachers enrolled in a 9-week course designed to educate preservice teachers about the benefits of inclusive education and ways to successfully implement inclusive practices. The survey included the TATIS, TEIP, and the *Concerns About Inclusive Education Scale* (CIES) and was given prior to and after a 9-week course. The findings suggest that the preservice teachers' attitudes and efficacy increased after the course and their concerns about inclusive education decreased (Sharma & Nuttal, 2016).

Although there have been many studies that have measured attitudes toward inclusion and perceived self-efficacy, there are few studies that have looked directly at the attitudes preservice teachers possess and the associations with efficacy of inclusive education. One of the studies that does look at this association between inclusive teaching tasks and their required self-efficacy by examining the individual items selected is by Lai and colleagues. Lai and colleagues (2016) were interested in what inclusive teaching tasks required the highest level of self-efficacy among 107 primary school teachers. They used a Rasch analysis to develop a hierarchy of the extent of self-efficacy required to implement inclusive practices. Their findings supported their hypothesis that managing physical aggression was at the top of the hierarchy indicating a high level of self-efficacy needed (Lai et al., 2016). This study helps to tighten the gap in this field of research by identifying that managing physical aggression was an area that preservice teachers may need additional training in.

In summary, this literature review outlines the main research on the topics of attitudes toward inclusion and self-efficacy of implementing inclusive practices within the classroom. Preservice teachers' teaching experience plays a large role in their attitudes they hold toward inclusion (Varcoe & Boyle, 2014) and training leads to more positive attitudes (Leatherman &

Niemeyer, 2005). The research above also looks at how the preparation and training impact attitude and overall perceived self-efficacy. If preservice teachers feel ill prepared this can often result in a negative attitude (Swain, Nordness, & Leader-Janssen, 2012). Finally, the previous research outlines the typical ways of measuring attitudes toward inclusion and perceived self-efficacy (Sharma & Nuttal, 2016) as well as different forms of analysis. Lai and colleagues used Rasch to examine items on the TEIP survey, finding that managing physical aggression required the highest level of self-efficacy (Lai et al., 2016). To further increase the knowledge of the field of attitudes toward inclusion and perceived self-efficacy, a Rasch analysis will be utilized in the current study to pinpoint what aspects are easier or harder for preservice teachers to endorse.

Purpose/Rationale

The purpose of this study is to examine the relationship between preservice teachers' attitudes toward inclusion and their level of perceived self-efficacy in teaching inclusive practices. Specifically, identifying what aspects of preservice teachers' attitudes toward inclusion and levels of perceived self-efficacy are easier or harder to agree with. This hierarchy will highlight which aspects may need to be addressed more in programs that lead to licensure in special education. It will also be helpful to know if the current professional role of the preservice teacher has an impact on attitudes towards inclusion or perceived self-efficacy. This information will also give insight into preservice teacher's knowledge of inclusive practices and guide training for future educational professionals.

Research Questions

1. What aspects of attitudes toward inclusion are easier or harder for preservice teachers to endorse?
2. What aspects of preservice teacher self-efficacy of inclusive practice components are easier or harder to endorse?
3. What is the relationship between preservice teachers' attitudes toward inclusion/level of perceived self-efficacy?
4. Does the preservice teachers' current professional role affect their attitudes towards inclusion and level of perceived self-efficacy of implementing inclusive practices?

Methodology

Participants

The participants for this study preservice teachers/ students that attend a midsized university, located in southwest Ohio. An email was sent to 140 students enrolled in the Master of Special Education Online Hybrid Program in the Department of Educational Psychology inviting them to participate in the survey. The preservice teachers who received the survey were 18 years or older and all students enrolled in this program met this requirement. This is the selected population for this study because the students in the Master of Special Education Program are all preservice teachers who will be working in an educational setting with students who have a disability in the future. This population also has differing levels of experience in schools and with children with disabilities (e.g., teacher, paraprofessional, other role in education). Completion of the survey was voluntary and did not impact the student's university standing.

Procedures

The survey was sent out to 140 graduate students in the Master of Special Education Program via email from a professor in the Department of Educational Psychology. This current study is part of a study that evaluated the changes in attitudes towards inclusion of preservice teachers as they progressed through an academic program. Data was collected twice in a calendar year (June and February) for three years (2019-2021). The data collected is evaluated in the current study. After the email was sent, participants had the option to click begin survey in the email. Informed consent was obtained on the first page of the survey. If the participant did not give informed consent, they were redirected to a thank you message, and the survey ended. Participants who did not open the survey were sent email reminders to start the survey. Contact information was given to every preservice teacher who opened the survey regardless of whether they completed the survey or not. The survey consisted of three parts: (1) demographic items, (2) 14 items from Teacher Attitudes Toward Inclusion Scale, and (3) 18 items from Teacher Efficacy for Inclusive Practices Scale.

Measures

Demographic Information. The beginning of the survey asked a series of demographic questions. Participants were asked about their gender, age, and whether they are a parent or guardian. They were asked about their teaching experience, specifically, if they hold a teaching license, their current professional role, and if they intended on becoming an intervention specialist. Participants were asked what the field of their undergraduate degree was. The last question in the demographics section asked if they know a close friend or family member that has a disability or disabilities. Completion of the demographic section creates a better understanding of individual participant background and helps to support answering research questions three and four of the current study.

TATIS. The first scale that was included in the survey is *The Teacher Attitudes Toward Inclusion Scale* (TATIS) (Cullen, Gregory, & Noto, 2010). The TATIS was developed by researcher observation of the level of effect that inclusive practices have in the school setting that

is impacted by positive teacher attitudes toward inclusive practices. The survey includes 14 questions developed around three factors of classroom inclusion: teacher perceptions of students with mild to moderate disabilities (POS), beliefs about the efficacy of inclusion (BEI), and perceptions of professional roles and functions (PRF). The items were adapted slightly from the original scale (Cullen, Gregory, & Noto, 2010) for use with preservice teachers. Respondents answered on a Likert-type scale ranging from "(1) agree very strongly, (2) strongly agree, (3) agree, (4) neither agree nor disagree, (5) disagree, (6) strongly agree, and (7) disagree very strongly." High scores on the TATIS mean that the respondent highly supports inclusion, and low scores mean that the respondent supports the traditional model of teaching. The alpha coefficient for the full scale was 0.821. The TATIS is considered an instrument with high reliability and a strong level of validity (Cullen, Gregory, & Noto).

TEIP. The second scale that was included in the survey is the *Teacher Efficacy for Inclusive Practice* (TEIP) scale (Sharma, Loreman, & Forlin, 2012). The scale has 18 items developed around three factors: efficacy to use inclusive instruction (EII), collaboration (EC), and managing disruptive behaviors (EMB). In this study, the beginning items were reworded from the original scale "I can…" (Sharma, Loreman, & Forlin, 2012) to "I feel…" to adapt the scale for preservice teacher respondents. Some participants were not currently in an educational role; therefore, it was more appropriate for them to answer how they feel about the items, compared to whether they can implement specific inclusive practices. Answers were recorded on a Likert-type scale ranging from "(1) strongly disagree, (2) disagree, (3) disagree somewhat, (4) agree somewhat, (5) agree, (6) strongly agree." The scores for the TEIP scale can range from 18 to 108, high scores indicate a high sense of perceived self-efficacy teaching in an inclusive classroom. The scoring system for the current study differed from the original scoring system. The alpha coefficient for the full scale is 0.89. The reliability analysis for the individual factors and full scale indicates that this is a reliable measure of perceived self-efficacy for inclusion (Sharma, Loreman, & Forlin).

Data Analysis

Rasch Analysis. The data collected from the TATIS and TEIP rating scales was analyzed with Rasch. Rasch is a type of analysis that turns ordinal (non-equal interval) data into data that is nonlinear meaning the differences between the data points are equal. This type of analysis is infrequently used in human research however, Boone and Noltemeyer (2017) provide evidence of the usefulness of Rasch in the field of school psychology research. Rasch analysis can "(a) facilitate the development of instruments that provide useful data, (b) provide data that can be used confidently for both descriptive and parametric statistics, and (c) provide outcome measures that offer clinically meaningful guidance" (p. 1).

Data was analyzed by computing Wright maps to analyze the hierarchy of items represented in the form of "logits that express where an item is on the single variable being measured" (Boone et al., 2014, p. 70). The Rasch analysis determines which items are hardest to agree with and easiest to agree with for preservice teachers on the TATIS and TEIP rating scales (Boone et al., 2014). Wright maps can also be helpful to compare a certain theory to the observed data to inform practitioners. The Wright maps provide answers to research questions one and two.

This analysis was also able to compute Rasch person measures which are represented in the form of positive and negative logits (Linacre & Wright, 1989; Boone et al., 2014). This allows participants to be compared with other participants (Boone et al., 2014). The person measures can also be used to compare participants with items. This will depict whether certain participants have a high or low likelihood of agreeing with certain items (Boone et al., 2014). This information helped to answer the third research question, "What is the relationship between preservice teachers' attitudes toward inclusion/level of self-efficacy?" The Rasch reliability and validity indices were computed to "monitor the functioning of the instrument" (Boone & Noltemeyer, 2017, p. 8). This was completed with both scales to determine if both the person measures and item measures are reliable and valid. Separation person index and item separation index were also computed. The Rasch analyses were conducted using the program Winsteps (Linacre, 2018).

Results

A Rasch analysis was completed on the TATIS and TEIP scales of items to answer the following research questions. *1. What aspects of attitudes toward inclusion are easier or harder for preservice teachers to endorse?* and *2. What aspects of preservice teacher self-efficacy of inclusive practice components are easier or harder to endorse?* The Rasch analyses are described below including what preservice teachers were most likely to and least likely to endorse of the items on both the TATIS and TEIP scales.

TATIS

One of the first aspects of the Rasch analysis investigated was the item measures output associated with the TATIS rating scale. The Rasch analysis revealed that there are certain aspects of attitudes toward inclusion that are easier or harder preservice teachers to endorse. Preservice teachers were able to easily endorse the *Perceptions of Professional Roles and Functions* (PRF) scale of TATIS. For example, "welcoming the opportunity to co-teach" (PRF Q 12) and "sharing the responsibility for educating students with disabilities between the general education teacher and special education teacher" (PRF Q 14) were some of the items that were easier to endorse. Some of the items in the *Teacher Perceptions of Students with Mild to Moderate Disabilities* (POS) scale were split between the easier and harder to endorse sections on the wright map.

The set of items on TATIS that were harder for preservice teachers to endorse related to the factors of *Beliefs about the Efficacy of Inclusion* (BEI) and some of the *Teacher Perceptions of Students with Mild to Moderate Disabilities* (POS). For example, it was harder for preservice teachers to endorse "general education teachers have the training to effectively support students with disabilities" (BEI Q 10). It was slightly more difficult for preservice teachers to endorse "All self-contained classrooms for students with disabilities shouldn't be eliminated" (POS Q 3). As for the rest of the items, the POS and BEI scale questions were in the middle of the wright map. In summary, preservice teachers can easily endorse items in the PRF factor, whereas some items included in the BEI and POS factors were harder for preservice teachers to endorse.

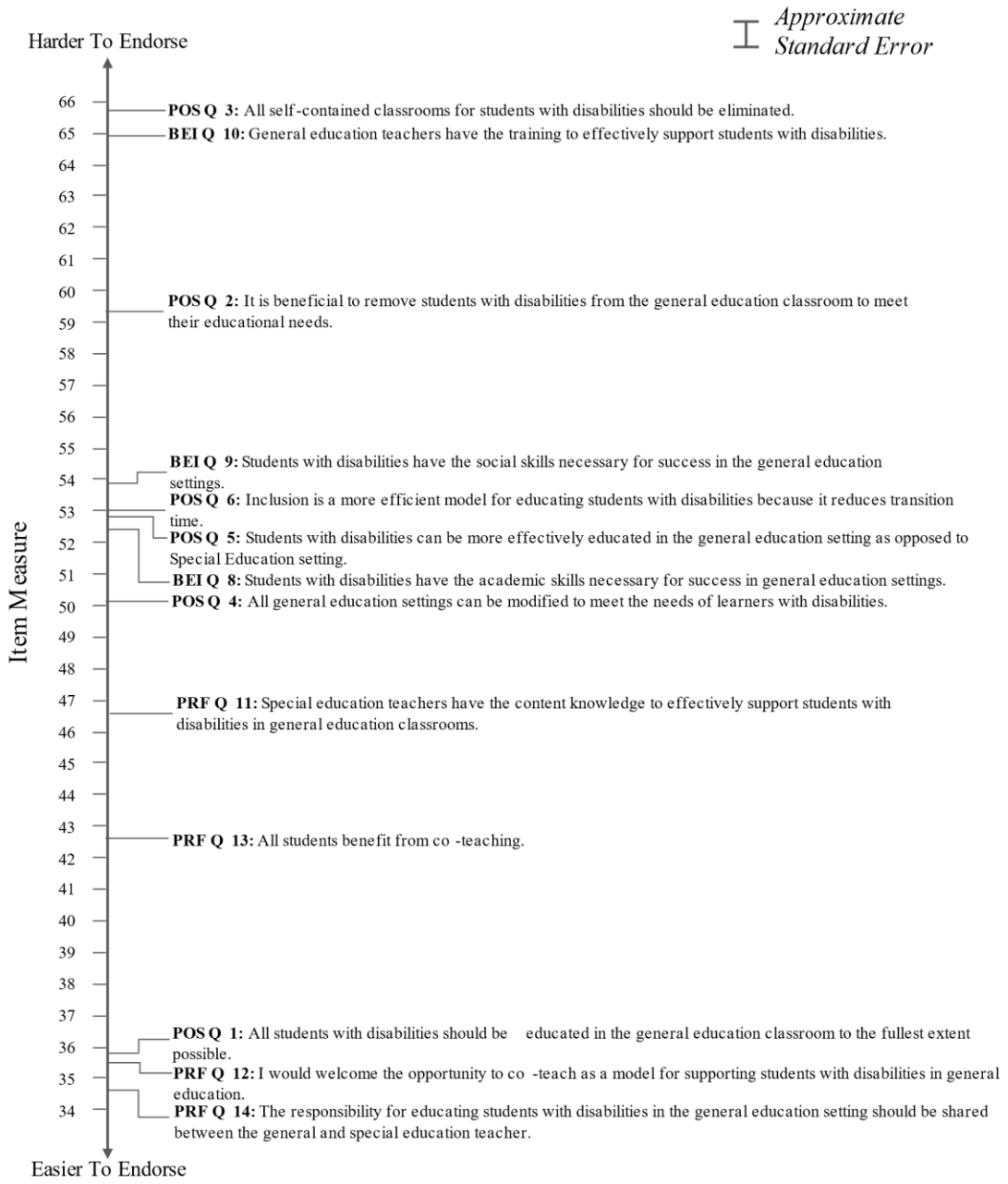
Table 1.

Rasch Item Measures and Statistics for TATIS Scale

TATIS Scale	Item #	Total Score	Total Count	Measure	Model S.E.	Infit MNSQ	Outfit MNSQ	PT. Biserial Corr.
POS	1	715	131	35.90	1.01	1.23	1.03	0.61
	2	418	131	59.31	0.67	1.16	1.15	0.56
	3	320	131	65.72	0.72	0.82	0.78	0.54
	4	560	131	50.16	0.71	1.11	1.10	0.60
	5	519	131	52.92	0.69	0.60	0.60	0.73
	6	514	130	53.03	0.69	0.89	0.89	0.57
BEI	8	511	127	52.52	0.71	0.75	0.76	0.58
	9	493	128	53.97	0.69	0.53	0.55	0.61
	10	326	129	64.97	0.71	1.44	1.39	0.34
PRF	11	603	130	46.69	0.76	1.37	1.29	0.49
	12	712	130	35.58	1.03	1.06	0.90	0.50
	13	651	130	42.58	0.83	1.37	1.34	0.45
	14	718	130	34.66	1.07	0.95	1.00	0.37

Note. POS = Teacher Perceptions of Students with Mild to Moderate Disabilities, BEI = Beliefs about the Efficacy of Inclusion, PRF = Perceptions of Professional Roles and Functions

Figure 1. *TATIS Item Measure Wright Map*



TEIP

Rasch analysis was also conducted for the TEIP rating scale to determine what aspects of self-efficacy of inclusive practices components were easier or harder for preservice teachers to endorse. In this analysis of the item measures, most of the scales (EII, EC, and EMB) were spread apart. However, there were a few clusters of items depicted on the Wright map. For example, there were a few items from the *Efficacy in Managing Behavior* scale (EMB) that hung together at the top of the map indicating some of those items were harder for preservice teachers to endorse. Those items were specifically about preventing and managing disruptive behavior in the classroom (EMB Q 4 & 7). Another item from the same scale was about feeling prepared to work with students who are impulsive or inattentive (EMB Q 12). One of the hardest items for preservice teachers to endorse was from the *Efficacy in Collaboration* scale. This item is as follows, "I feel prepared to inform others who know little about laws and policies relating to inclusion of students with disabilities."

The items of TEIP that were easier for preservice teachers to endorse were a mix of all three factors. Many of the items that were easiest to endorse were part of the *Efficacy in Collaboration* scale. Those items easily endorsed were feeling prepared to collaborate with other teaching professionals and parents to support learners with disabilities (EC Q 14 & 18). There were a few items clustered together that were of the same trait, setting expectations, that belong to the *Efficacy to Use Inclusive Instruction* and *Efficacy in Managing Behavior* scales. More specifically, preservice teachers easily endorsed feeling prepared to set high expectations/goals for their students as well as feeling prepared to set behavior and classroom expectations (EII Q 11 & EMB Q 16 & 17).

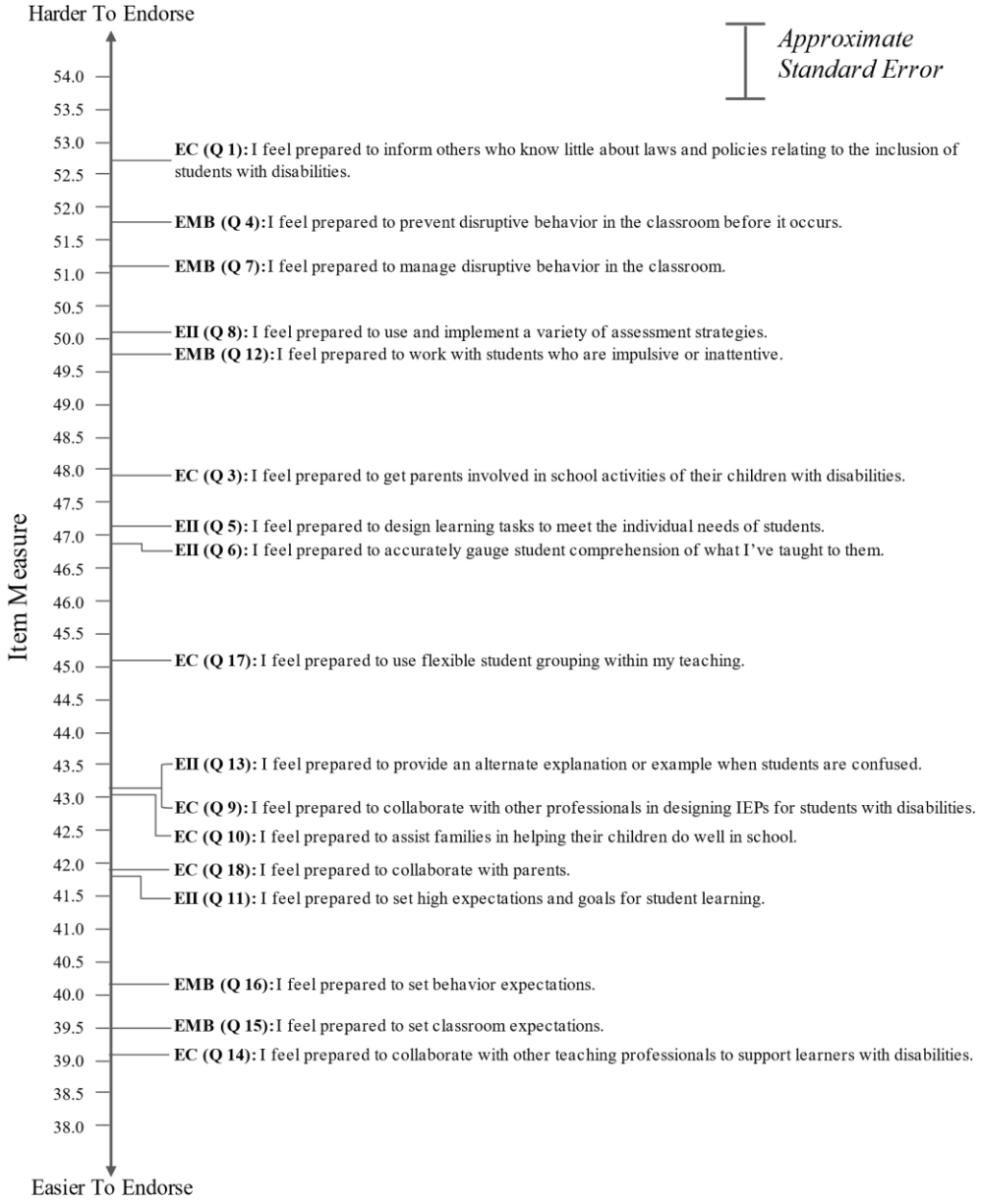
Table 2.

Rasch Item Measures and Statistics for TEIP Scale

TEIP Scale	Item #	Total Score	Total Count	Measure	Model S.E.	Infit MNSQ	Outfit MNSQ	PT. Biserial Corr.
EII	5	655	126	47.28	1.06	1.12	1.13	0.68
	6	657	126	46.93	1.07	0.86	0.78	0.73
	8	638	126	50.10	1.01	1.14	1.15	0.71
	11	678	125	41.92	1.17	0.97	0.75	0.69
	13	673	126	43.97	1.12	0.92	0.86	0.67
EC	1	621	126	52.69	0.97	1.31	1.39	0.60
	3	651	126	47.97	1.05	1.24	1.36	0.61
	9	668	125	43.83	1.13	1.19	1.08	0.67
	10	676	126	43.38	1.14	0.82	0.76	0.69
	14	696	126	39.10	1.23	0.77	0.73	0.66
	17	667	126	45.12	1.10	1.04	1.04	0.67
	18	683	126	41.96	1.16	0.91	0.84	0.67
EMB	4	623	125	51.71	0.99	1.07	1.09	0.72
	7	626	125	51.06	1.00	0.99	0.98	0.72
	12	635	125	49.79	1.02	1.03	1.05	0.70
	15	694	126	39.56	1.22	0.78	0.67	0.69
	16	691	126	40.24	1.20	0.88	0.75	0.67

Note. EII = Efficacy to Use Inclusive Instruction, EC = Efficacy in Collaboration, EMB = Efficacy in Managing Behavior

Figure 2. *TEIP Item Measure Wright Map*



Attitudes Toward Inclusion and Perceived Self-efficacy

Further analyses were computed to determine the relationship between preservice teachers' attitudes toward inclusion and level of perceived self-efficacy. The mean person measures score for each scale was first evaluated for normality using a Shapiro-Wilks test. As shown in *Table 3*, each of the scale variables was found to be non-normal. Skewness was calculated and it supports the non-normal conclusion of the Shapiro-Wilks test. A non-parametric Spearman's rho correlation was selected as the appropriate analysis to compare person measures from each scale.

Table 3.
Mean Values and Shapiro-Wilks Test of Normality for Scale Person Measures

			Test of Normality		
Scale	Mean (SD)	Skewness (Std. Error)	Statistic	df	*p*
TATIS	53.78 (7.83)	-1.38 (.22)	.917	118	<.001
TEIP	89.19 (9.28)	-0.78 (.22)	.941	118	<.001

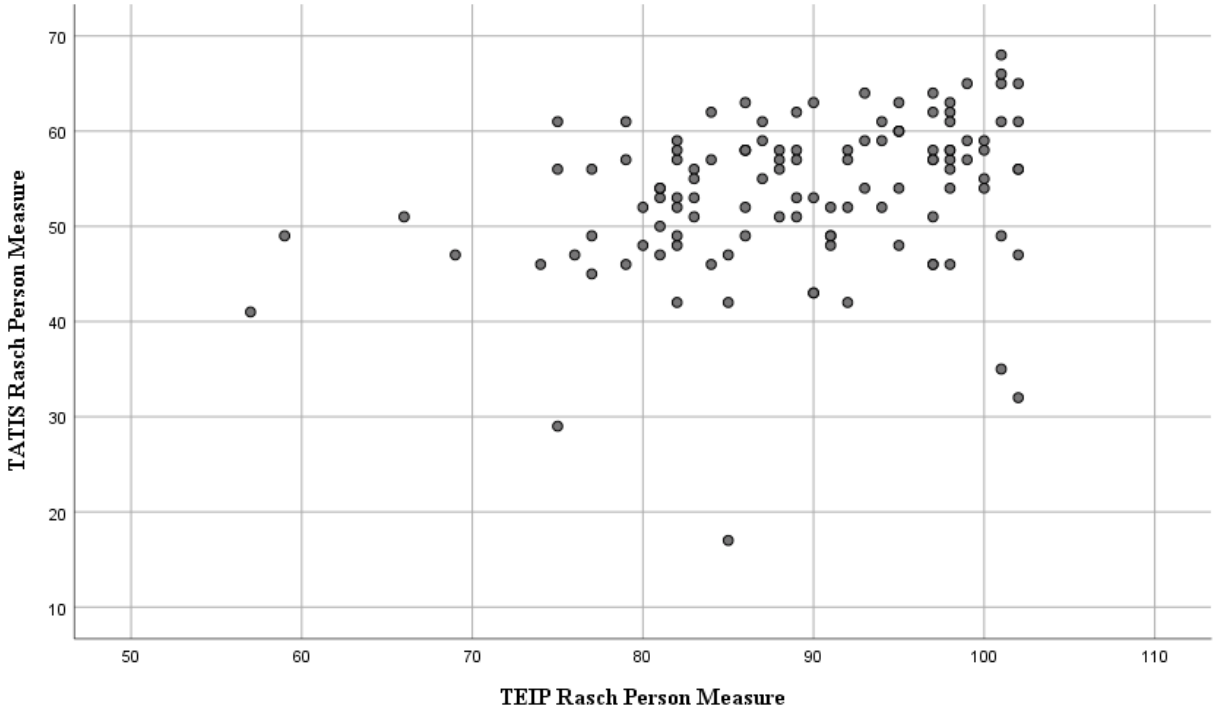
The results of the Spearman's rho correlation analysis shown in *Table 4* suggest that there is a significant correlation between TATIS and TEIP person measures. A weak positive correlation is represented indicating there is a weak positive relationship between the preservice teachers' attitudes toward inclusion and their level of perceived self-efficacy. *Figure 3* visually represents the correlation of the person measures by scale.

Table 4.
Spearman's rho Correlation: Scale Rasch Person Measures

		TATIS Person Measure	TEIP Person Measure
TATIS Person Measure	Correlation Coefficient	1.000	.357**
	Sig. (2-tailed)	.	<.001
	N	131	118
TEIP Person Measure	Correlation Coefficient	.357**	1.000
	Sig. (2-tailed)	<.001	.
	N	118	126

Note: **. Correlation is significant at the 0.01 level (2-tailed).

Figure 3. *TATIS and TEIP Person Measures Scatterplot*



Current Professional Role Impact

The following section will aim to address research question four. Frequency statistics were computed to obtain the number of preservice teachers' and their current professional role. The options the participants had to select from were full-time K-12 teacher, substitute teacher, K-12 paraprofessional, coach, other role in education, and employed in non-educational field. After evaluating the data, coach was removed because no one selected that as a profession. The "other role in education" was also examined to see if those participants could be categorized as full-time K-12 teacher or paraprofessional. Some individuals who indicated they were a preschool paraprofessional were moved to the K-12 para-professional category. The name was changed to PreK-12 paraprofessional. Participants that stated that they were an intervention specialist were included in the "full-time K-12 teacher" category. Participants that indicated they were an administrator, ABA therapist, or tutor stayed in the category of "other role in education." The modified results based on the explanation above for *Current Professional Role* are presented in *Table 5* below.

Table 5.
Current Professional Role

Professional Role	Frequency	Percent
Full-time K-12 Teacher	77	54.6
PreK-12 Paraprofessional	33	23.4
Other Role in Education	14	9.9
Substitute Teacher	9	6.4
Employed in Non-educational Field	8	5.7
Total	141	100

After further review of the professional role data, the analysis was limited to two groups: *Full-time K-12 Teacher* and *Substitute Teacher/Paraprofessional*. This decision was made because there were too few cases in the other categories to obtain a meaningful comparison. Therefore, the participants that selected *Other Role in Education* and *Employed in a Non-educational Field* were removed from the comparison. The reduced frequency data for current professional roles of participants is represented in *Table 6*.

Table 6.
Current Professional Role Reduced

Professional Role	Frequency	Percent
Full-time K-12 Teacher	77	64.7
Substitute Teacher or Paraprofessional	42	35.3
Total	119	100

Further analyses were computed to determine if the preservice teachers' current professional role affected their attitudes toward inclusion or level of perceived self-efficacy of implementing inclusive practices. The mean score for each professional role variable was first evaluated for normality using a Shapiro-Wilks test. As shown in *Table 6*, some of the variables were found to be non-normal, thus a Mann-Whitney U non-parametric test was selected as the appropriate analysis to compare the two reduced professional role impact by scale. Only participants that completed each scale in its entirety were included in the comparison, therefore the number of participants is slightly lower than the total participants represented in *Table 6*.

Table 7.
Mean Values and Shapiro-Wilks Test of Normality for Professional Role by Scale

Scale	Professional Role	Mean (SD)	Skewness (Std. Error)	Test of Normality		
				Statistic	df	*p*
TATIS	Full-time K-12 Teacher	52.7 (8.32)	-1.7 (0.29)	0.884	67	<.001
	Substitute Teacher or Paraprofessional	54.6 (7.02)	-0.20 (0.40)	0.946	35	0.086
TEIP	Full-time K-12 Teacher	90.2 (8.45)	-0.90 (0.30)	0.921	67	<.001
	Substitute Teacher or Paraprofessional	86.7 (9.1)	-0.70 (0.40)	0.950	35	0.113

The results from the Mann-Whitney U test revealed that there was no significant difference between the way full-time teachers or substitute teachers/paraprofessionals responded on the TATIS or TEIP scale. Although, there is not a significant difference between the professional roles, the boxplot for the TATIS scale in *Figure 4*, reveals there is greater variability in the responses of substitute teachers or paraprofessionals. *Figure 4* also exposes some outliers in the professional role of full-time teacher. As for the TEIP scale boxplot in *Figure 5*, the response variability is similar for both categories and there are fewer outliers than displayed in the TATIS boxplot.

Table 8.
Mann-Whitney U Test Results of Comparison of Person Measures from TATIS and TEIP

Scale	Mann-Whitney U Test	*p*
TATIS Rasch Person Measure	1526.5	0.529
TEIP Rasch Person Measure	1345.0	0.825

Figure 4. *TATIS Person Measure and Professional Role Boxplot*

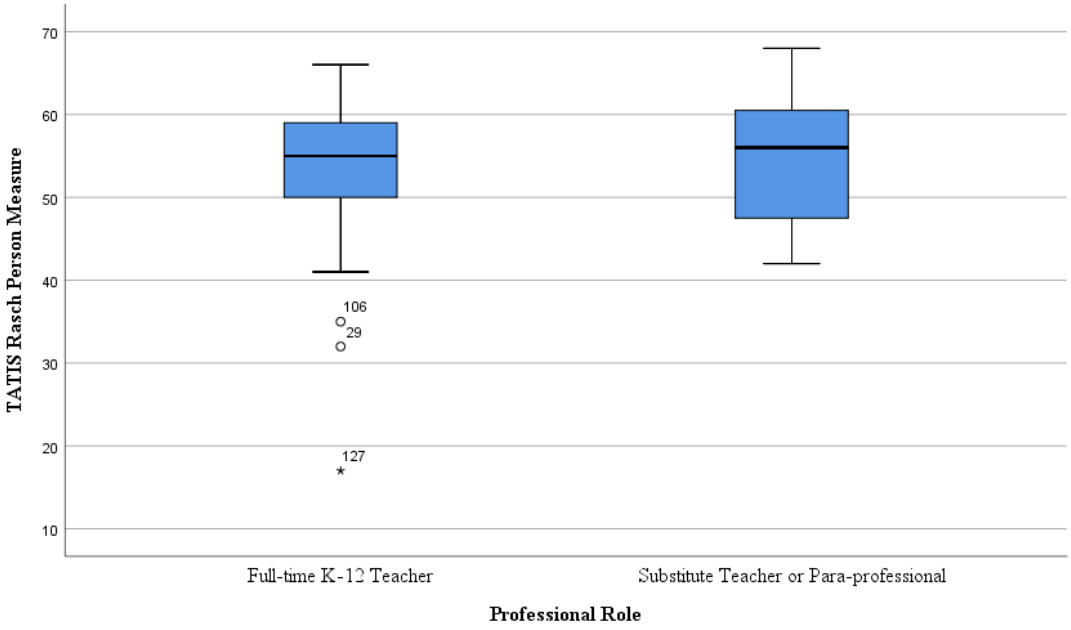
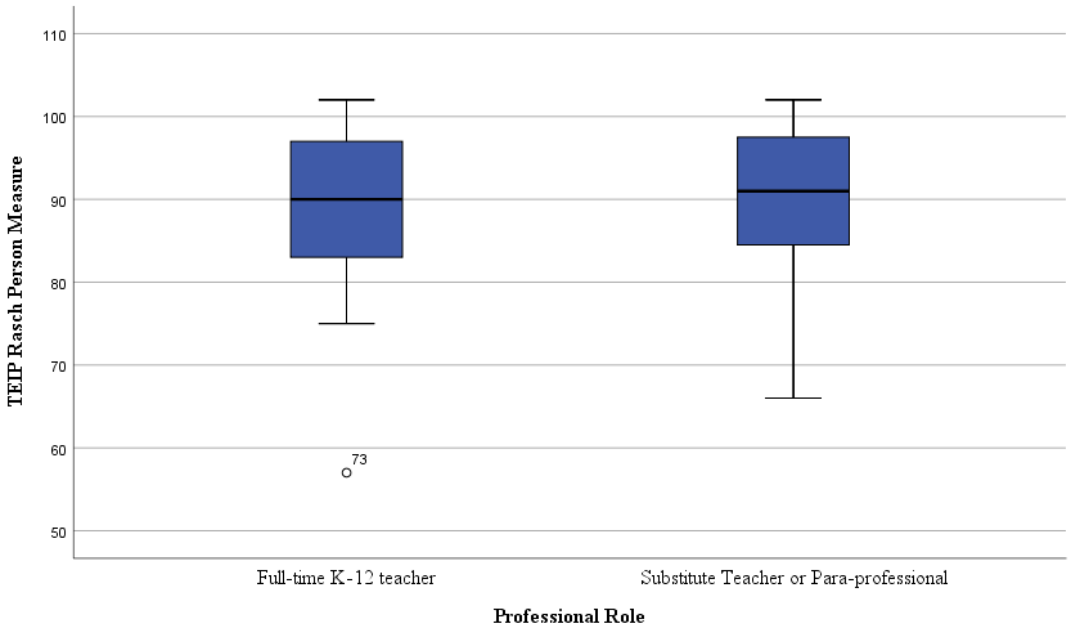


Figure 5. *TEIP Person Measure and Professional Role Boxplot*



Discussion

The current study explored the preservice teachers' attitudes toward inclusion and their perceived self-efficacy in implementing inclusive practices. The Rasch analysis suggests that the preservice teachers that participated in the study are well versed in collaboration with other professionals, new teaching models, and setting expectations for students. However, it is harder for preservice teachers to endorse having training to effectively support students with disabilities. The comparison outcomes suggest that there is a weak positive correlation between how preservice teachers responded on the TATIS and TEIP scales. The current professional role of the preservice teachers had no significant impact on their responses for both the TATIS and TEIP scales.

Limitations

It is important to note that the current study was conducted at a mid-sized university in southwest Ohio. The sample of participants selected were enrolled in a special education online hybrid program. The number of respondents that were able to participate was limited and found to only be suitable for non-parametric statistical analyses. These factors should be taken into consideration when generalizing the results of the current study to other areas or circumstances.

Research Questions 1 and 2: Rasch Outcomes

TATIS. The items on the TATIS scale that were most easily endorsed by preservice teachers were from the *Perceptions of Professional Roles and Functions* (PRF) subscale. These items were about preservice teachers' perceptions on topics like co-teaching and sharing the responsibility of educating students with disabilities between general and special education teachers (PRF Q 12 & 14). Another item that was easy for preservice teachers to endorse was from the *Teacher Perceptions of Students with Mild to Moderate Disabilities* (POS) subscale, that students should be educated in the general education classroom to the fullest extent possible (POS Q 1). These few items being the easiest to endorse suggest that preservice teachers are typically willing to welcome new models of teaching such as co-teaching and work as a team to support students with disabilities.

The results from the Rasch analysis of the TATIS scale indicate a perceived need by special education teachers for general education teachers to have training to effectively support students with disabilities in the classroom (BEI Q 10). This item on the TATIS scale was at the top of the Wright map indicating it was one of the harder items for preservice teachers to endorse. Some of the POS questions were also harder to endorse, like "All self-contained classrooms for students with disabilities should be eliminated" and that it is "beneficial to remove students with disabilities from general education to meet their educational needs" (POS Q 3 & 2). These items being harder for preservice teachers to endorse may suggest a lack of knowledge of special education practices and laws such as least restrictive environment (Odom, Buysse, & Soukakou, 2011).

TEIP. The Rasch analysis of item measures for the TEIP scale showed some clusters of subscale items that are important to make note of. For example, there was a cluster of items from the *Efficacy in Collaboration* scale that were easier for preservice teachers to endorse. The items

had to do with preservice teachers feeling prepared to collaborate with other teaching professionals and parents to support learners with disabilities (EC Q 14 & 18). This suggests that preservice teachers feel well versed in their abilities to collaborate effectively with others, specifically, parents and other educational professionals. Other items that were easier to agree with were from the *Efficacy in Managing Behavior* (EMB) subscale which focused on feeling prepared to set behavior and classroom expectations.

Preservice teachers report that they feel comfortable with setting behavior and classroom expectations, but according to the TEIP Wright map, they have a harder time agreeing that they feel prepared to prevent and manage disruptive behavior in the classroom (EMB 4 & 7). These results are similar to a Rasch analysis conducted by Lai and colleagues. They found that managing physical aggression was at the top of the hierarchy indicating a high level of self-efficacy needed by the practicing teachers in their study (Lai et al., 2016). In the current study, it was also hard for preservice teachers to endorse "feeling prepared to work with students who are impulsive or inattentive" (EMB 12). These outcomes from the Rasch analysis suggest that preservice teachers are knowledgeable about how to set behavior and classroom expectations but lack prevention and management strategies for disruptive, impulsive, and inattentive behavior in the classroom. These results indicate that a high level of self-efficacy is needed for interfering behavior prevention and management in the classroom.

Research Questions 3 and 4: Comparison Outcomes

Statistical analyses were conducted to determine if there was a significant relationship between the TATIS and TEIP person measure scores. Results from the Spearman rho correlation depicted that there was a weak positive correlation, meaning that preservice teachers' attitudes toward inclusion and perceived self-efficacy of implementing inclusive practices have a weak but positive relationship. While both person measure variables tend to go up in response to one another, the relationship is not strong. The way preservice teachers responded to questions on the TATIS scale is not strongly related to how they may have responded to questions on the TEIP scale. A stronger relationship was predicted based on previous research by Sharma and Nuttal (2016) who conducted a study and utilized both the TATIS and TEIP. They found that preservice teachers' attitudes and self-efficacy increased after the 9-week course given in the study. There was a strong relationship between the scales. Sharma and Nuttal's study differed from the current study by having a 9-week course designed to teach preservice teachers about the benefits of inclusive education and ways to implement inclusive practices (Sharma & Nuttal, 2016). The current study did not have a specific course like this study, the participants enrolled in the study were taking specific classes to learn how to become a special education teacher. If the classes were more specific and outlined the benefits of inclusive education and implementation of those practices, the current study may have found a stronger relationship between the TATIS and TEIP person measure scores.

Research question four aimed to determine whether TATIS and TEIP scores differed according to the professional role of the respondent. The professional role categories were narrowed down to two categories: Full-time K-12 teacher and Substitute/paraprofessional. The Mann-Whitney U test revealed that there was no significant difference between how the preservice teachers from each profession responded to either of the scales. Although there was no significant difference, the substitute teachers/paraprofessionals had greater variability in their

responses on the TEIP scale. This information may imply that the training that substitute teachers and paraprofessionals have on implementing inclusive practices varies.

Implications for Teacher Education Training

After careful evaluation of the TATIS and TEIP Wright maps, there were some findings that may inform teacher educational training in the future. The TATIS Rasch results revealed that preservice teachers felt prepared to collaborate with different educational departments and parents. They also felt comfortable with trying new instructional strategies such as co teaching (Ricci & Fingon, 2017). Teacher education programs should continue to teach methods of collaboration and new instructional strategies to teachers. When preservice teachers enter the field of education, their collaboration skills will play a pivotal role in the support they are able to offer to a student with a disability.

Preservice teachers had a hard time endorsing that they had the training to effectively support students with disabilities. Many of the items that were harder to endorse surrounded the law of Least Restrictive Environment (LRE). Teacher programs could focus on the continuum of LRE for students with disabilities (Odom, Buysse, & Soukakou, 2011). Deciding the LRE for a student is a team decision and teachers should be a part of that team. Further education and knowledge of special education laws would help teachers understand their role in advocating and supporting students with disabilities.

Preservice teachers indicated on the TEIP scale that they felt comfortable in their abilities to set behavior and classroom expectations. However, it was harder for preservice teachers to endorse having disruptive behavior prevention and management strategies in place. Going forward, teachers will need to be taught the skills to provide tier one behavior prevention and management in the classroom. Now more than ever, school psychologists are seeing more disruptive behaviors in the classroom due to the COVID-19 pandemic (Fitzpatrick, Carson & Weisz, 2021). It is crucial not only teacher education programs, but for school districts to take action to prevent disruptive behaviors at the tier one level. Teachers will also need to be trained to understand disabilities such as ADHD, as the number of students with the diagnosis continues to grow (Bozinovic et al., 2021). Programs should focus on teaching strategies such as individualized instruction for students that learn information in different ways (Moore et al., 2018).

The training and experience that every educational professional varies due to their roles that they have previously held, where they were trained, and many other factors. It is important for teacher education programs to take into consideration the differences in training and how that may inform where their training needs to expand. In order to improve teachers' attitudes toward inclusion and perceived self-efficacy of implementing inclusive practices, teacher education programs should focus on teaching tier one prevention and management for disruptive behaviors, teaching special education laws, and how to be an effective part of a special education team to help advocate for student needs.

Directions for Future Research

Future research may consider working with a larger sample at a university education program. It may be interesting to see whether professors that teach in an education program have a focus of training students to effectively support students with disabilities. The professors could rate how they teach the items on the TATIS and TEIP scale and these results could be compared with how students at the same university respond to the survey using a Rasch analysis.

Another idea for future research would be to give the TATIS and TEIP scales to teachers that are new to the teaching profession and those who have been in the teaching field for 10 or more years. It would be interesting to examine the different views of general education teachers who have just started in the field and those who have been teaching for 10 or more years to evaluate the differences. Results from a study like this could identify specific areas that could inform training or professional development sessions. This could potentially fill a gap in their training as it pertains to effectively supporting students with disabilities.

Conclusion

The current study aimed to identify what aspects of preservice teachers' attitudes toward inclusion and levels of perceived self-efficacy are easier or harder to agree with, using a Rasch analysis. This study also looked at the relationship between preservice teachers' attitudes toward inclusion and their level of perceived self-efficacy when implementing inclusive practices. The preservice teachers' professional role impact was also explored within this study. The results of the study concluded that specific items on both TATIS and TEIP scales that were easy and difficult for teachers to agree with indicating a need for more specific training in teacher education programs. There was a slight positive correlation between the person measures between each scale. There was no significant difference in the way full-time K-12 teachers and substitute teachers/ paraprofessionals responded to the two scales. Overall, attitudes toward inclusion and teacher inclusive practices have come a long way with new special education laws in place. Teacher education programs need to focus on teaching the basics such as collaboration skills, prevention, and how to be a part of the special education team so that teachers can effectively support students with disabilities.

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