

The Effects of Special Education Training on Educator Efficacy in Classroom Management and Inclusive Strategy Use for Students with Autism in Inclusion Classes

Lynn D. Parsons, Ph.D.
Heather Miller, Ph.D.
Northcentral University

Aaron R. Deris, Ph.D.
MN State University, Mankato

Abstract

The rise in the number of students with an autism spectrum disorder (ASD) diagnosis combined with the educational trend toward inclusion for students with disabilities has led to an unprecedented number of these students placed in general education classrooms. General educators require appropriate training if these children are to be successful. The problem addressed in the article was that general education teachers have not had sufficient special education training to deal with students with autism. The purpose of the survey was to determine if there was a relationship between special education teacher training and teacher efficacy for both classroom management and inclusion instructional strategies for general educators in a north central Texas school district who work in inclusion classrooms containing students with autism. Study participants included primary and secondary general education teachers in a north central Texas school district who had at least one student with autism in the classroom. Students with autism are participating in inclusive classes at a higher rate than ever before, a situation, which creates new teacher challenges (Kalkbrenner, Braun, Durkin, Maenner, Cunniff, Lee, Pettygrove, Nicholas, & Daniels, 2012). Teachers trained to improve their inclusive teaching efficacy are more likely to use best practices, leading to optimal learner outcomes (Malinen, Savoleinen, & Xu, 2012). Researchers need to identify the best type of teacher training to facilitate inclusion success (Brown & McIntosh, 2012).

General education teachers typically do not have adequate special education training to effectively manage the academic and behavioral challenges demonstrated by students with an autism spectrum disorder within the classroom (Killoran et al., 2013, Breitenback, Armstrong, & Bryson, 2013). This lack of training has led to poor teacher efficacy with regards to inclusion strategy implementation and classroom management, which can cause lifelong academic and social failures for these students (Brown & McIntosh, 2012). The purpose of this study was to determine if there was a relationship between the amount of special education training obtained by general educators and their efficacy levels for classroom management and inclusive instructional strategy use with their included students with autism.

This study was done to answer two research questions focused on the training levels of general education teachers with students with autism in their classrooms and how training differenced related to efficacy in classroom management and instructional strategy use.

RQ1. What is the strength and magnitude of the relationship between efficacy of classroom management and inclusive instructional strategy use as measured by the Teacher Efficacy for Inclusive Practice Scale (TEIP)?

RQ2. Is there a main effect of special education training level on classroom management efficacy and inclusive strategy use as measured by the TEIP?

Research Methods and Design

Participants were certified general educators of both genders who were employed full-time and had at least one student with autism in their classrooms. These participants were highly qualified in their subject areas according to district standards, and ranged in age from 25 to over 46 years. The convenience sample consisted of 95 teachers from a north central Texas School district who responded within two days to the email invitation.

Sample Size

An a priori G*Power (v3.2.1) analysis was conducted to determine the minimum sample size necessary. For a multivariate analysis of variance (MANOVA) with four groups and two response variables with $\alpha = .05$, .80 power, and an effect size of .25, it was determined that $n = 42$ participants would be needed. Traditionally, email surveys had a lower overall response rate than interviews, typically 30-40% (Cozby & Bates, 2012). The original plan to increase responses with a second and third reminder was not used as the required number of participants was 42, and 95 teachers participated within the first two days. Participants who responded to the invitation email were provided with an informed consent form containing an email with a unique link to prevent participants from taking the survey multiple times. After the first two days of responses, the survey was shut down due to sufficient numbers of participant responses to the survey.

Materials and Instruments

Teacher Efficacy for Inclusive Practice Scale. The questions for the survey were based on the Teacher Efficacy for Inclusive Practice (TEIP). The TEIP was developed in 2011 to evaluate the efficacy of teachers in inclusive classrooms. The TEIP is an 18-item scale with a total-score ranging from 18-108, with a Cronbach's alpha of .85. It has been found to be both valid and reliable (Ashan, Sharma, & Deppeler, 2012). Higher scores indicate better perceived aptitudes in the selected areas. One of the subscales on the TEIP measures efficacy to use inclusive instructions, which is related to the dependent variable examined in research question 1. Another subscale measures efficacy in managing behavior, which is related to the dependent variable in research question 2. The reliability for efficacy to use inclusive instructions was .93, and for efficacy in managing behavior was .85, while the Cronbach's alpha for the TEIP was .85 (Ashan, Sharma, & Deppeler, 2012).

Operational Definition of Variables

Several variables had been identified for the dissertation, including demographics and efficacy levels. Specifically, special education training was the independent variable and efficacy in classroom management and inclusion instructional strategies the dependent variables. Both of the dependent variables were measured on a 6-point Likert-type scale.

Special education training. Special education training was reported on an ordinal scale within the demographics section. The four possible responses included very low (less than 10 hours of in-service training), low (greater than 10 hours of in-service training), medium (participation in a university course in special education) or high (special education teacher certification). A response option of no special education training was not included because teachers employed by the north central Texas school district must have some in-service hours in special education prior to obtaining employment. The scores were coded: 1 (very low), 2 (low), 3 (medium), and 4 (high).

Efficacy in classroom management. Efficacy in classroom management was the first dependent variable, which was measured by the Teacher Efficacy for Inclusive Practice (TEIP) scale (Loreman, Forlin, & Sharma, 2012; Ashan, Sharma, & Deppeler, 2012; Sharma, Loreman, & Forlin, 2012). Scores for this subscale were averaged. Questions 1,2,7,8, 11, and 17 of the TEIP provided data on classroom management efficacy.

Efficacy in inclusive instruction. Efficacy in inclusive instruction was the second dependent variable, which was measured in an ordinal fashion through the TEIP. Questions 3, 4, 5, 6, 9, 10, 11, 13, 14, 15, 16, and 18 provided information on inclusive instructional strategy use. Scores for this subscale were averaged.

Data Analysis

Data from the survey (demographic data and TEIP) were downloaded as an Excel spreadsheet and transferred directly into SPSS v22.0 for statistical analysis. Frequencies were run in order to check for (a) missing data, (b) potential errors, and (c) outliers. The Teacher's Efficacy for Inclusive Practices survey yielded scores of 1-6 for each item and did not require recoding. If there were errors or incomplete responses, they were treated as incomplete data. At that time, possible-code cleaning was done to visually check to ensure all codes were possible. A visual scan was also completed to clean the data and ensure all questions had responses. The incomplete data from the one respondent who did not complete the survey was discarded as it only contained demographics.

Demographic information to be collected was limited. Data included (a) gender, (b) years of teaching experience, and (c) hours of special education training. A MANOVA was performed. A post hoc power analysis was conducted through Tukey's pairwise comparisons to evaluate the actual power of the statistical tests conducted for the proposed study. The powers of the statistical tests performed yielded the significance tests' ability to detect the alternative hypothesis (Steinberg, 2011). Before running the primary analysis, MANOVA assumptions were checked for violations.

Research Question One. What is the direction and magnitude of the relationship, if any, between efficacy of classroom management and inclusive instructional strategy use as measured by the TEIP?

First, correlations between the dependent variables were identified in order to answer RQ1 by calculating Pearson's r . These correlations were run to determine if a significant relationship existed between classroom management efficacy and use of inclusive instructional strategies. In addition, the correlations were used to justify the use of MANOVA to answer Research Question Two.

Research Question Two. Is there an effect of amount of special education training on efficacy levels in the areas of classroom management and inclusive strategy use as measured by the TEIP?

A MANOVA was used to analyze the data for Research Question Two provide an answer to this research question. The independent variable for the current study was special education training, and the dependent variables were classroom management efficacy and proficiency with inclusion instructional strategies. Tukey's pairwise comparisons were run as a post hoc procedure to evaluate the significance of the main effects. All tests used $\alpha = .05$ to determine significance.

Results

Research question one, "What is the strength and magnitude of the relationship between efficacy of classroom management and inclusive instructional strategy use as measured by the Teacher Efficacy of Inclusive Practice Survey (TEIP)?" A Pearson correlation coefficient between classroom management and inclusive instruction strategies was found to be positive ($r = .69$) and significant ($p < .001$), indicating that teachers with good efficacy in classroom management also had high levels of inclusion strategy use. In addition, teachers who used appropriate inclusion strategies also demonstrated good classroom management skills.

Research question two, "Is there a main effect of special education training level on classroom management efficacy and inclusive strategy use as measured by the TEIP?", a MANOVA was performed to determine the effect of the independent variable of special education training on the dependent variables of efficacy in classroom management and inclusion strategy use. The result of the multivariate test was not significant.

The range of mean scores indicated a significant difference between groups with different special education training levels, as shown in Table 1. The range in the area of classroom management efficacy (4.99 – 5.23) was largest, indicating that training levels had a strong impact on the teacher's ability to control their classrooms. Table 2 demonstrates that the range of mean scores for inclusion practices (5.17 - 5.22) was not as wide as those for classroom management, indicating a weaker impact.

Table 1
Descriptive Statistics

	<u>Classroom Management</u>	<u>Inclusion Practices</u>
N – Valid	94	94
N - Missing	1	1
Mean	5.09	5.21
Std. Deviation	.53	.41
Skewness	-.83	-.01
Kurtosis	2.33	-.62

Levels of training were varied within the group, as shown in Table 2. Of the participants with in-service training only, 20 had 10 hours or fewer, and 42 had more than 10 hours of in-service training. Table 2 also demonstrated there were 13 participants with at least one university course, and 19 held a special education certification from the Texas Education Agency.

Table 2
Between-Subjects Factors (Training Levels)

<u>Row</u>	<u>Value Label</u>	<u>N</u>
1	Less than 10 in-service hours	20
2	Greater Than 10 in-service hours	42
3	One university course	13
4	Special education certification	19

The profile plot from the MANOVA, however, indicated that training levels influenced both classroom management efficacy and inclusion strategy use. These results can be seen in Figures 1 and 2. Educators with less than 10 hours of in-service training had the lowest efficacy levels, and levels increased with more than 10 hours of training. Teachers with one university course had the highest levels, while those educators with special education training had a significant drop in efficacy levels. While the drop in efficacy with special education certification was unexpected, the fact that it was seen in both independent variables was not surprising, given the strong positive relationship between them.

TEIP scores were high overall for both classroom management efficacy ($M = 5.09$, $SD = .53$) and inclusion practices ($M = 5.21$, $SD = .41$). Four different levels of training were identified within the group (Table 3). Scores on the TEIP varied with special education training level (Table 3), from fewer than 10 in-service hours ($M = 4.99$, $SD = .52$) to more than 10 in-service hours ($M = 5.06$, $SD = .57$), one university course ($M = 5.23$, $SD = .51$), and special education certification ($M = 5.18$, $SD = .47$).

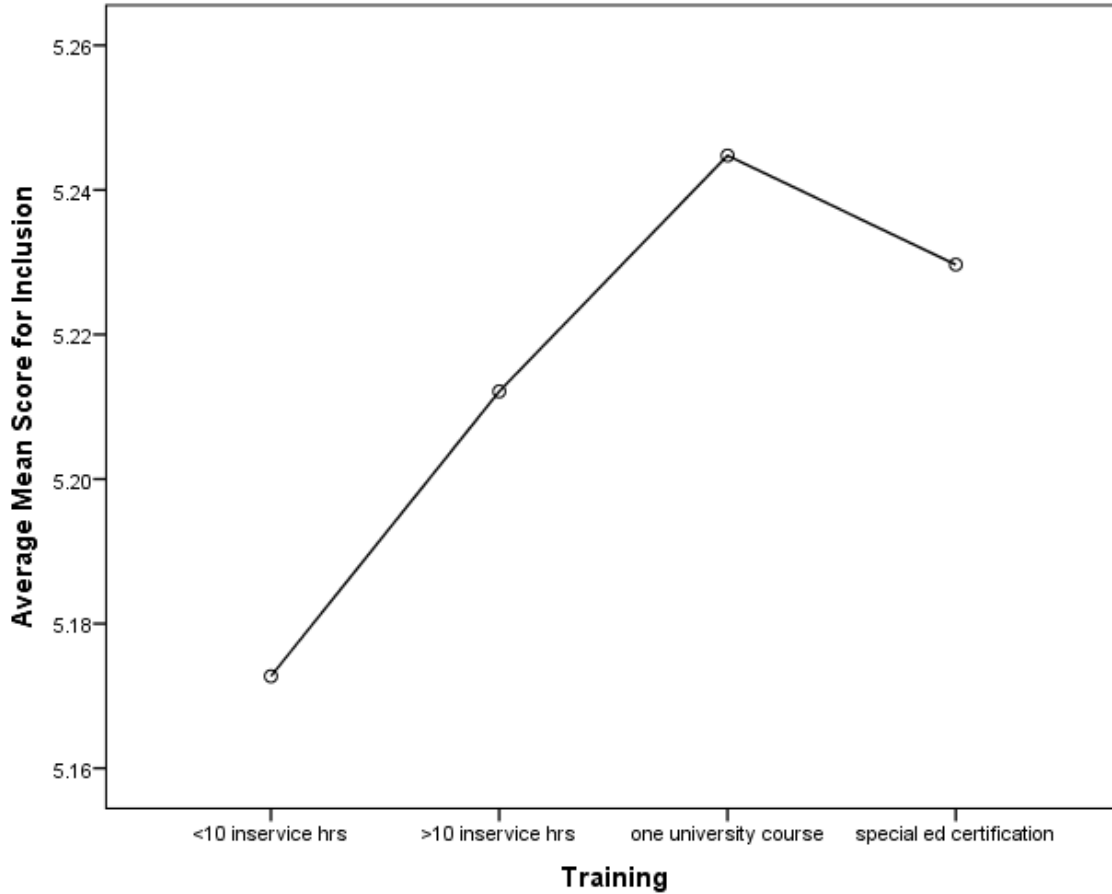


Figure 1. Efficacy in Classroom Management by Training Levels. Points represent mean participant scores for each training level.

Table 3
Descriptive Statistics

	<u>Training</u>	<u>Mean</u>	<u>Standard Deviation</u>	<u>N</u>
Classroom Management	<10 in-service hours	4.99	.52	20
	>10 in-service hours	5.06	.57	42
	one university course	5.23	.51	13
	special education certification	5.17	.47	19
	Total	5.10	.53	94
Inclusion Practices	<10 in-service hours	5.17	.44	20
	>10 in-service hours	5.21	.42	13
	one university course	5.24	.30	19
	special education certification	5.23	.43	19
	Total	5.21	.41	94

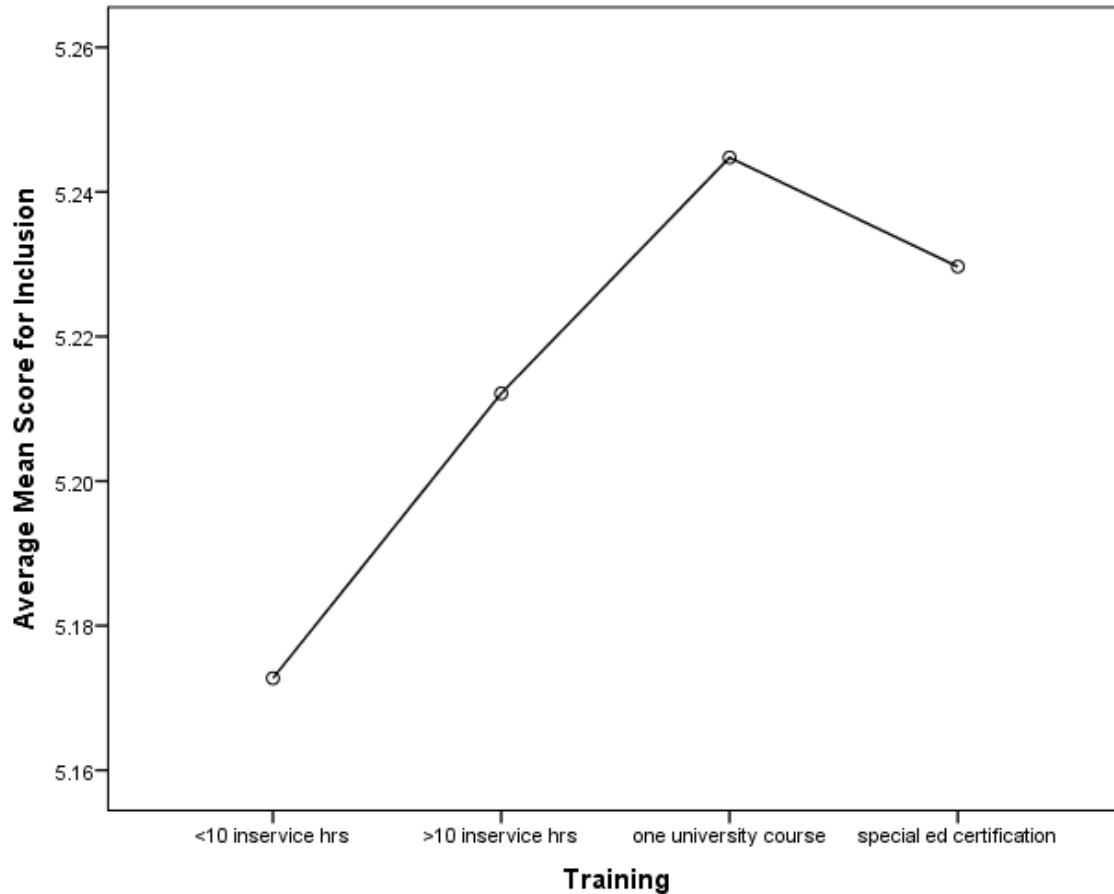


Figure 2. Efficacy in Inclusion Strategy Use by Training Levels. Points represent mean participant scores for inclusion strategy use.

Discussion

Many general education teachers feel inadequate to meet the challenges of inclusion for students with disabilities, especially when the learners have been diagnosed with an autism spectrum disorder (Savolainen, Engelbrecht, Nel, & Malinen, 2012). Study findings yielded data consistent with previous research concerning the relationship between educator efficacy in classroom management and inclusion strategy use. Some data with regard to the correlation between training and the dependent variables were also consistent with previous information. Unexpected results related to the relationship between special education certification and efficacy for both dependent variables.

A surprising result was the drop in efficacy between teachers with one university course and those with a special education certification. This regression in efficacy may be due to a variety of factors experienced by teachers with the additional special education certification. These factors have been documented in the literature and (Sokal & Sharma, 2013).

The second variable in the second research question was inclusion strategy use. Again, those with fewer than 10 hours of in-service training had a lower level of efficacy than their colleagues

who had participated in more than 10 in-service hours. Educators with a minimum of one university course also demonstrated the highest level of efficacy for inclusion strategy use. A similar reported drop in efficacy for those with the special education certification was also demonstrated. Because classroom management efficacy and inclusion strategy use had such a high correlation, the similar results could be anticipated. A number of possible explanations for the efficacy drop among educators with special education certification were revealed in the literature, including (a) an elevated workload, (b) differing attitudes about inclusion, (c) increased chance for burnout, (d) fewer resources, and (e) increased classroom scrutiny. These demands result in an increased workload, leading to additional stress and lowered overall efficacy (Lee, Patterson, & Vega, 2011). These feelings of being overwhelmed also impact teacher attitudes towards inclusion (Gebbie, Ceglowski, Taylor, & Miels, 2012).

Limitations

There were a number of limitations to the current study. The participants who took the survey included teachers in a specific school district during a specific time frame. The data which were obtained may not be appropriate to generalize to other districts or other time periods. In addition, because a self-report was used, there was no way to validate the candor of the responses. Finally, correlation was not proof of causation, so additional variables, such as teacher gender or age, may have had an unexpected impact on data collected.

Delimitations

The survey was restricted to general education teachers of included students with autism. The population was further restricted to teachers in the employ of a single school district. A further restriction was that participants were limited to those who responded first to the email invitation, which was within the first 48 hours.

Recommendations

Study results indicated that general education teachers teaching students with autism in an inclusion classroom should be provided with at least one university course in special education. This training affords them the opportunity to demonstrate the highest levels of efficacy for both classroom management and inclusion strategy use. These educators will then be prepared to optimize outcomes for their students with a spectrum disorder.

Further research is needed to confirm the results of this study and to identify the exact reason for the drop in efficacy for teachers with a special education certification. Additional studies should be completed with a larger population, and over a wider geographical area. Demographics such as (a) teaching level (elementary or secondary), (b) teacher gender, (c) level of college education completed, and (d) years of experience should also be evaluated in terms of teacher efficacy for both classroom management and inclusion strategy use. Future studies should also focus on the educators' years of experience in an inclusive setting. Additional factors to be evaluated include how teachers feel about the school support system, and their perceived control within their classrooms.

Potential questions may include the following:

- Is there a relationship between general education teacher attitudes towards inclusion and special education certification?

- Do general education teachers with a special education certification perceive a heavier workload, and how does this impact their classroom efficacy?
- Are teachers with special education certification under additional scrutiny, and what is the impact of this on their efficacy?

Conclusions

Data from this study demonstrated a strong positive correlation between general education teacher classroom management efficacy and inclusion instructional strategy use for students with autism (Killoran et al., 2013). The teachers who demonstrated good classroom management skills tended to use inclusion best practices, and those educators who used inclusion instructional methods also had a high level of efficacy in classroom management.

Additional data demonstrated that teachers with fewer than 10 in-service hours do not report as much efficacy for either classroom management or inclusion strategy use as those with more than 10 in-service hours. Teachers who have had one university course in special education demonstrated the highest levels of efficacy. These levels are consistent for both classroom management and inclusion strategy use. These data indicated that additional special education training raised efficacy levels for both independent variables, however educators with the highest level of training, special education teacher certification, reported a significant drop in efficacy for both dependent variables.

This study reinforced findings of the existing literature that additional special education training is needed for general educators who teach students with autism (Syriopoulou-Delli, Cassimos, Tripsianis, & Polychronopoulou, 2012). In addition, it added to the existing information in that it identified a lowered level of efficacy for teachers who also hold a special education teaching certification. Further research is needed to determine the cause of the drop in efficacy for these teachers.

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About the Authors

Lynn D. Parsons, Ph.D., is an educational diagnostician for a school district in Texas. She is the author of two books on inclusion in faith communities, *(dis)Abilities and the Gospel*, and *Plain and Simple Truths*. She continues to work with the Intellectual and Developmental Disabilities Council of Tarrant County to assist individuals with disabilities and their families fully participate in their community churches by providing resources and training. Lynn's current interests are in the areas of behavior management, autism, transition planning, and community supports.

Dr. Heather Miller is passionate about teaching and learning and supporting students and faculty. She has been working online for 10 years with students and faculty in a variety of roles. For years Heather has been an advocate for K-12 students with Type 1 Diabetes in public schools. She believes in the importance of empowering K-12 teachers with information to best support special needs students in the classroom.

Aaron R. Deris, Ph.D., is an associate professor in the Department of Special Education at Minnesota State University, Mankato. He has coordinated grants on inclusive practices and personnel preparation. He has worked with school districts throughout the USA to implement response to intervention in schools/districts from preK to high school. He has presented at conferences regarding working with families with children with autism, diverse family types, and inclusive practices. His current research interests include response to intervention, intervention research, effectiveness of technology in instruction, and working with families of children with disabilities.