

The Pennsylvania State University

The Graduate School

College of Education

**A COMPARATIVE INVESTIGATION OF DIFFERENCES  
BETWEEN SPECIAL AND GENERAL EDUCATION  
TEACHERS' PERCEPTION ABOUT STUDENT WITH AUTISM  
IN EDUCATIONAL CENTER OF CHILDREN WITH AUTISM  
(OCEM)**

A Thesis in

Special Education

by

Muhammed A. Karal

© 2014 Muhammed A. Karal

Master of Science

May 2014

The thesis of Muhammed A. Karal was reviewed and approved\* by the following:

Paul Riccomini

Professor of Special Education

Thesis Advisor

David Lee

Professor of Special Education

Richard Kubina

Professor of Special Education

Program Coordinator of Special Education Program

\*Signatures are on file in the Graduate School.

## **Abstract**

The Centers for Educational Children with Autism (OCEM) was established in 1999 as part of the Educational Project for Students with Autism (OCEP). One of the main reasons for establishing these schools are laws, which introduce the concept of least restrictive environment. That needs to be considered in the first place in the field of special education.

This study investigated general education and special education teachers' perceptions about the students with Autism in Centers for Educational Children with Autism (OCEMs). The Autism Attitude Scale for Teachers (AAST) was the survey used to state perceptions of respondents about the students with Autism.

The responses from the AAST show both teacher groups had receptive perceptions about students with Autism in Centers for Educational Children with Autism. However, special education teachers had more receptive beliefs about students with Autism than general education teachers. There was statistically significant difference in the mean scores from the AAST between respondent groups by ANOVA analysis.

This research is significant for the field of education because it is important to realize both teacher groups' perceptions' about the students with Autism can have serious impacts and can affect educational outcomes. Furthermore, examining the perceptions of teachers may provide a worthy source of data used in the development of teachers for future considerations.

## TABLE OF CONTENTS

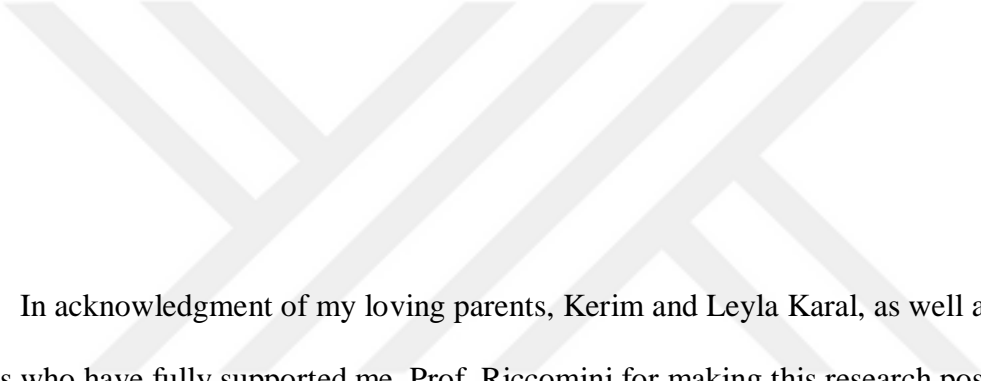
<b>LIST OF TABLES .....</b>	<b>vi</b>
<b>ACKNOWLEDGEMENTS .....</b>	<b>vii</b>
<b>Chapter 1 Introduction .....</b>	<b>1</b>
1.1 Introduction to Research .....	3
1.2 Research Questions .....	3
1.3 Summary .....	4
<b>Chapter 2 Literature Review .....</b>	<b>5</b>
2.1 Autism in Education .....	5
2.2 Educational Settings .....	6
2.3 The Centers for Educational Children with Autism (OCEMs) .....	8
2.4 Connection to Research Questions .....	9
<b>Chapter 3 Methodology .....</b>	<b>11</b>
3.1 Research Questions .....	11
3.2 Autism Attitude Scale for Teachers .....	12
3.3 Scoring of the AAST .....	12
3.4 Teacher Demographic Questionnaire .....	13
3.5 Sample .....	13
3.6 Generalizability .....	15
3.7 Data Analysis .....	15
3.8 Limitations and Future Research .....	16
3.9 Summary .....	17
<b>Chapter 4 Results .....</b>	<b>19</b>
4.1 Research Questions .....	19
4.2 Use of Autism Attitude Scale for Teachers (AAST) Results .....	20
4.3 Research Question 1 .....	22
4.4 Research Question 2 .....	24
4.5 Open-Ended Questions .....	31
<b>Chapter 5 Discussion .....</b>	<b>34</b>
<b>References.....</b>	<b>36</b>
<b>Appendices .....</b>	<b>39</b>

Appendix A. IRB Approval Letter ..... 39  
Appendix B. AAST Belief Scale, Form A..... 40  
Appendix C. AAST Belief Scale, Form B ..... 41  
Appendix D. Teacher Demographic Form..... 42



## LIST OF TABLES

Table 1. Respondents by Educator Group .....	14
Table 2. Demographics of Respondents .....	15
Table 3. Teachers` Scores by Survey Questions .....	21
Table 4. Descriptive Statistics Associated with ANOVA Results .....	23
Table 5. ANOVA Results on the AAST.....	24
Table 6. Crosstabulation for Question 5 .....	26
Table 7. Chi-Square Tests for Question 5.....	27
Table 8. Crosstabulation for Question 12 .....	28
Table 9. Chi-Square Tests for Question 12.....	29
Table 10. Crosstabulation for Question 14 .....	30
Table 11. Chi-Square Tests for Question 14 .....	31
Table 12. Suggestions to Other Teachers who works with Student with Autism .....	32
Table 13. Educators Opinions about the importance of OCEMs .....	33



In acknowledgment of my loving parents, Kerim and Leyla Karal, as well as family and friends who have fully supported me, Prof. Riccomini for making this research possible with his support, guidance and advice throughout the research.

## Chapter 1 INTRODUCTION

Autism Spectrum Disorder (ASD) is a developmental disability with a neurological base which affects the normal functioning of the brain (Leblanc, Richardson & Burns, 2009). Since Leo Kanner first described it in 1943, the disorder has obtained a great deal interest in the field and research environment. As a result, many different conceptualizations and theories have created questions in the field of ASD. Although there are still many questions unanswered, a great deal progress has been achieved, resulting in an improved understanding of the disorder (Helps, Newsom-Davies, & Callias, 1999).

Teachers` perceptions about students with Autism are important for many reasons like, the teachers` perception of students with Autism have a significant role in effecting children in educational settings. Another reason is teachers` attitudes can influence their expectations for students that can affect the students` self-image and academic performance (Alexander & Strain, 1978). On the other hand, teachers who have negative perceptions about the students with Autism may cause hazardous impacts on those students.

Olley, DeVellis, DeVellis, Wall & Long (1981) examined the attitude of regular education teachers towards children with Autism. They developed the Autism Attitude Scale for Teachers (AAST) and administered it to 95 regular education teachers and results of their research indicated that the teachers` attitudes were comparatively positive. Additionally, it is obvious that there is a difference between perceptions of special education teachers and general education teachers depending on the curriculum differentiation between those two departments. Normally, special education based teachers have more knowledge and experience about the students with Autism and Autism as a field when compared with general education based

teachers, but there would be different results between teachers when it comes to the perceptions. Moreover, demographic variables (e.g., age and gender) and types of exposure to children with disabilities have been found to impact individuals' attitudes about children with Autism (Rosenbaum, Armstrong & King, 1988)

The purposes of the study are threefold: 1) examine the perceptions of special education and general education teachers towards student with Autism in Centers for Education children with Autism (OCEM), 2) to compare and reveal the differences between their perceptions, and 3) to exhibit the variables that affect teachers' perceptions such as demographic differences and to show their opinions about the effectiveness of the Centers for Education children with Autism (OCEM).

This research is important for the field of education, because educational professionals' perceptions can have serious impacts on children and can affect educational outcomes. Teachers in particular 'convey messages of acceptance or disapproval through their own actions or symbolic gestures which represent a powerful influence on school-wide acceptance of differences' (Horrocks, White and Roberts, 2008). At the same time, examining the perceptions of teachers about students with Autism is significant because it may provide a worthy source of data used in the development of teachers.

## **1.1. Introduction to Research**

This research examined special education and general education teachers' perceptions about students with Autism in Centers for Education children with Autism (OCEM). Moreover, this study compared mean scores of special education and general education teachers on the Autism Attitude Scale for Teachers (AAST; Olley et al., 1981). Teachers' perceptions were analyzed by means of AAST. In the open-ended questions, participant teachers were able to say their suggestions to other teachers who have students with Autism in their classroom and their opinions about importance of the OCEMs in special education field.

The Autism Attitude Scale for Teachers (Olley et al., 1981) is the only published scale for teachers' perceptions specifically about students with Autism. Autism is one of the most investigated concepts of the field of special education recently, but there is no new scale and AAST has not been revised.

It is important to mention that this study is not an attempt to criticize or disparage special education or general education teachers' attitudes about the students with Autism or the special education field. The AAST scale gives teachers the opportunity to express their opinions in an unrestricted way no matter positive or negative, without using their names and showing how they feel about their students and also the OCEMs. These results can produce new strategies and/or supports for students with Autism.

## **1.2. Research Questions**

This study includes quantitative and qualitative analysis of data. The design of the research was mixed methods statistics.

The research questions are:

1. What were the Special Education and General Education based teachers' perceptions about students with Autism in Centers for Education children with Autism (OCEM)?
2. What were the differences between Special Education and General Education based teachers' responses on specific questions of the Autism Attitude Scale for Teachers?

### **1.3. Summary**

There are many different examples of practices for students with Autism worldwide; as an example of OCEMs in Turkey. Most of the special education teachers and some general education teachers faced with having students with educational disability or students with Autism in their classrooms, schools or their daily routine and normally they have positive, neutral or negative perceptions and attitudes about them depending on their educational background, experiences, or other circumstances. To educate students with Autism and sharing the same environment with them successfully, teachers should be able to express their opinions primarily because if a teacher has somehow negative view or bias, it would be an unfortunate beginning for the student.

This study is about the state of special education and general education teachers' receptiveness about students with Autism in OCEMs. The goal of education of students with Autism is to create a least restrictive environment for them and provide supportive services to make students successful, socially and academically.

## **Chapter 2 LITERATURE REVIEW**

Autism is a disability syndrome characterized principally by significant problems in the development of communication and social functioning (Dunlop & Fox, 1999). Autism Spectrum Disorder is a remarkable and prominent topic for people in the field of Special Education. Several investigators have found large increases in the prevalence of ASDs over time within populations and geographic areas (Ouellette-Kuntz, Coe, Lloyd, Kasmara, Holden & Lewis, 2006). One of the increasing populations for ASD is in Turkey. According to the Ministry of Education, there are about 500.000 people with Autism and 100.000 of them are under 14 year old children. The proportion of children with Autism in all children is 1/80 in Turkey. Furthermore, those numbers are increasing approximately 5.000 per year.

Autism was identified as a psycho emotional problem in early childhood by Leo Kanner in 1943. Autism Spectrum Disorder (ASD) is often used to describe the mental health diagnoses of autism, Asperger`s disorder, Pervasive Developmental Disorders-Not Otherwise Specified (PDD-NOS), Rett`s Disorder and childhood disintegrative disorder (White-Williams, Seahill, Klin, Koenig, & Volkmar, 2007).

### **2.1. Autism in Education**

The Special Education Handbook which is published by Ministry of Education describes Autism as a developmental disturbance of social functioning and communication, limitedness of attention and activity which begins in early childhood. Individuals with Disabilities Educational Act (IDEA) 2004 defined autism as a developmental disability significantly affecting verbal and non-verbal communication and social interaction, generally evident before age 3, which adversely affects a child`s educational performance (NICHCY, 2007). Both definitions are quite

similar but there are other characteristics of students with autism not specifically mentioned in those previous descriptions. Students with autism often engage in repetitive activities and stereotypic movements. They also tend to have unusual responses to sensory experiences in their environment, all of which usually affect educational performance (NICHCY, 2007). There are special academic supports because of the disability characteristics that can help students experience success in educational settings whether independent schools for student with disabilities or schools with special classrooms.

According to Department of Education statistics for the 1991-92 school years, 5,416 students with Autism were serviced throughout special education programs in the United States (White-Williams et al., 2007). A 20-fold increase was seen over the following 10 years and in the 2002-03 school year, 118,328 students with an educational disability of Autism were being serviced nationally (White-Williams et al., 2007).

In the year of 2003, it was stated that 1 out of 222 student had an educational disability of Autism (Hollenbeck, 2004). Thus, a drastic difference exists between educational Autism, currently at 1 in 222, in 2003, and mental health diagnosis of 1 in 150 in the same year with Autism (Hollenbeck, 2004). The reason of this difference is affiliated with varied definitions in the Autism field.

## **2.2. Educational Settings in Turkey**

In the process of educational assessment and diagnosis, experts determine children`s characteristics in each developmental area, academic adequacy and educational necessities. Moreover, they give suggestions about which environment or school is the most appropriate for a child (least restrictive environment) to the Council of Special Education Services.

After the diagnosis process, one of the most important features is the child`s age to make a decision about the least restrictive environment. There are at least five possible placements for children with Autism like

a) Home Education:

This placement is a type of early childhood education and children are mostly younger than 3 years old. Home Education includes educating child, informing and supporting families. The Council of Special Education Services are responsible to coordinate and plan Home Education.

b) Preschool Education

One year Pre-School Education is compulsory for children who require special education. However, taking into account the of children`s developments and individual characteristics Pre-School Education time period may be extended for one year. The preferred placement is Pre-School Education for any child with a disability is inclusion in Preschools or kindergarten for normal development children.

c) Elementary Education

First choice of placement children with Autism is between ages 7-14 is an inclusive setting in the elementary school. In some cases where inclusion is not possible, there are two alternatives. First one is Special Education Center which may have students with all disability groups. The other one, Special Education Classrooms in normal Elementary Schools which give students with Autism a chance to share same environment with other students. After Pre-School education student with Autism can have one-year preparation education for continuing regular Elementary School.

#### d) Secondary Education/ Job Training Schools

If the child with Autism is between 15- 21 ages and complete his/her elementary education, he/she can continue his/her secondary education in an inclusive setting. But, most of the children with Autism continue their education in Job Training Schools. Those schools are specially designed for student with disabilities who taught by profession teachers about jobs.

#### e) Education Practice and Job Training School

These schools are specially designed for students with any disability and the focus is on Elementary Education and Job Training. After the Pre-School Education, some of the students with disabilities continue their education in Education Practice School. The curriculum is similar with elementary education`s curriculum but much easier. For Example; both 3<sup>rd</sup> grade students have Math class but the content is easier in Education Practice Schools.

### **2.3. The Centers for Educational Children with Autism (OCEMs)**

The Centers for Education Children with Autism (OCEM) was established in 1999 by the Turkish Ministry of Education as part of the Education Project for Student with Autism (OCEP) program. There are sixty-one independent OCEMs and around one thousand students in it.

OCEMs are independent schools which includes one-to-one and group education classrooms for 3-15 years old students with Autism. A Center for Education Children with Autism includes Preschool education (3-6), Elementary education (7-11), and Secondary education (12-15). The general purposes of the OCEMs are; a) providing least restrictive environment for student with Autism and make them increase their educational performance, social and practical skills with the supports of their families and guidance-research center. b)

providing Supportive Services to improve students' IEPs and helping students reach their goals, and c) providing to prepare and perform Family Education Programs to fortify families and their perspective about students and/or school.

The OCEM teachers are special education teachers who graduate from Special Education Departments, and general education teachers who have Special Education Certificate or have a graduate degree in Special Education field. According to the project, each teacher should work with one or two students. In group education classrooms, each teacher can work 2-4 students.

#### **2.4. Connection to Research Questions**

Before analyzing the perceptions of Special Education and General Education teachers in response to students with Autism, it is important to understand the significance of Autism in education. According to the researchers there are a variety of problems that exist in schools especially independent schools which includes students with disabilities only. These challenges are often due to unique needs of the student with Autism in the classroom.

It is much easier to change curriculums and other circumstances in any field than to change a person's or teacher's way of thinking or their perceptions. People's attitudes and perceptions are eagerly defended with passion. These attitudes can be highly progressive or not, but are not described as neutral.

The purpose of this literature review is to address research based information on teachers' beliefs about students with Autism. The information details the importance of approving and evaluating the special education teachers' and general education teachers' perceptions about the practice of including student with Autism. Many factors can lead to the formation of these

perceptions. It is significant that these perceptions expressed by teachers as they can impact classroom atmosphere.

Otherwise, for the practice of including students with Autism to be successful, teachers have to identify which supportive services they need within the educational atmosphere. Training is the component part of education students with any disabilities. Ongoing training is needed and should be provided to teachers and administrators at the district and state level (Harding, 2009).



### **Chapter3      METHODOLOGY**

The Centers for Education Children with Autism (OCEM) was established in 1999 by the Turkish Ministry of Education as part of the Education Project for Student with Autism (OCEP) program. As a result of the OCEP program, centers have opened in big cities such as Istanbul, Ankara and Izmir. According to the Centers` regulations, a teacher is appointed to every two students with Autism. In OCEMs, except for art and physical training teachers, there are general educators and special educators. At this point, general and special education teachers` viewpoints and beliefs about students with Autism are significant. The purpose of this study is to determine general and special educators` beliefs about the supports needed for general educators in public schools who have students with Autism in their classrooms.

#### **3.1. Research Questions**

This study includes quantitative and qualitative ways for analyzing data. The design of the research was mixed methods statistics.

The research questions are:

1. What were the Special Education and General Education based teachers` perceptions about students with Autism in Centers for Education children with Autism (OCEM)?
2. What were the differences between Special Education and General Education based teachers` responses on specific questions of the Autism Attitude Scale for Teachers?

### **3.2. Autism Attitude Scale for Teachers**

The Autism Attitude Scale for Teachers (AAST) was developed by Olley et. al in 1981 to estimate teacher`s attitudes and beliefs about the inclusion of students with Autism. In addition, the scale was developed for determining teachers` beliefs about students with Autism and their involvement in public schools for the first time. AAST has two forms; Form A and Form B. Olley et. al (1981) used form A before receiving training and form B after completing for educators. The scores from A as a pretest prior to training on Autism and B form as a posttest after the training (Olley et. al 1981). However, in this study Form A and Form B were given to teachers at the same time and those forms will not be discussed separately.

Olley et. al (1981) developed the scale with each form containing seven questions to use in different ways. First one is using Form A and Form B differently as a pretest and posttest. Another way to use scale is giving forms together for a onetime assessment (Olley et. al 1981). Using the 14 questions AAST, instead of separate forms, increased the validity of responses at there were twice as many questions to collect data.

The findings of Olley et. al (1981) suggest that the AAST is reliable scale for identifying educators` beliefs about inclusion of autistic students (Olley et. al 1981). (Cronbach`s alpha=.726)

### **3.3. Scoring of the AAST**

AAST has positively and negatively worded questions, 14 totally. According to the authors, this design was to prevent respondents from indicating the same number on the Likert scale for every question, so they had to read each question before answering (Olley et. al 1981).

There are different types of questions in the AAST. In the 14 questions, questions 1, 2, 4, 6, 7, 8, 9, 11, 13, and 14 are reversed scored, using negative valence. Questions 3, 5, 10 and 12, use normal scoring. To attain a normal score for a negatively worded question, the investigator must subtract the original score from 6. For instance, if a teacher records a one on a reverse-scored questions, the score would be converted to a 5 (e.g.,  $6 - 1 = 5$ ) (Olley et. al 1981). The system of scoring was used to ensure teachers carefully read each question and give the correct answer. After collecting all scores, the highest score can be 70 and the higher score indicates more positive attitudes about students with Autism.

### **3.4. Teacher Demographic Questionnaire**

The authors developed a questionnaire for gathering information from the teachers who completed the AAST form. Teacher Demographic Form includes questions about their demographic information and background of educators (Olley et. al 1981). There are also two open-ended questions which asks teachers about their advices to general education teachers who works in public schools and their opinions about the importance of OCEMs in special education field. Both forms given to educators at the same time and they submitted both together after completing.

### **3.5. Sample**

Fifty-three general educators and 65 special educators volunteered to participate in the research from 19 different OCEM in Turkey`s 10 different city.

The author visited to each school and administered both forms to teachers in a regularly scheduled meeting. After explaining the surveys and purpose of the research, participants began completing the survey. Then, surveys were collected randomly. To know all respondent were

anonymous, teachers were not asked to identify themselves on the survey. The survey was given to 65 general educators and 70 special educators, but some of the surveys had unanswered questions, lacking information or some written notes on it. Those surveys were excluded from the scope of research.

*Table 1: Respondents by Educator Group*

	General Educators	Special Educators
Number of educators reached	65	70
Number of respondents	53	64
Rate	81%	91.42%

The researchers reached teachers for participating the study and ask them for volunteering. The cities were selected based on population and seven different geographical regions in Turkey. The data was collected from schools located in the largest cities in five different regions.

Demographic data were obtained from Teacher Demographic Form Table 2 shows the demographic information for all respondents and gives a brief background about teachers who participate the study. There 37 female and 16 male general education respondents and 44 female and 20 male special education respondents. Nine general education and 46 special education teacher indicated they had previous experience working with a student with Autism Spectrum Disorder.

*Table 2: Demographics of Respondents*

Demographics	General Educators	Special Educators
Female	37	44
Male	16	20
Mean Age	32.16	28.25
Previously had a student with Autism in class	9	46

### **3.6. Generalizability**

Population generalization was possible through results because the sample represented the population of interest, as a specific, data collected from 10 biggest cities from 5 different regions in Turkey and from 19 OCEM. The mean scores of both general and special educators on the AAST form were compared to understand their perceptions about students with Autism in Centers for Education children with Autism (OCEM. However, generalization outside those 10 big cities and the other two regions should be tempered, because the population was from 10 cities from 5 geographical regions.

### **3.7. Data Analysis**

The results from the AAST form were collected from both general and special education teachers. The forms and overall AAST were scored based on the scoring instruction provided by Olley et. al. (1981). SPSS was used to analyze data and create tables from that data. The means and standard deviation for the responses of the form were reported for each educator group. Using a two sample t-test, t scores and p values obtained from SPSS. Those data which are

means, standard deviations, t-scores and p values helped to answer Research Question 1. This statistical information was added in the original AAST administration by Olley et al., 1981.

### **3.8. Limitations and Future Research**

There are several limitations that should be considered. First, the results of the study are generalizable to the target population, but the results could be improved if a more widely representative sample was used. Future investigator should consider collecting data from a variety of rural regions surrounding the cities in the five regions of Turkey.

**AAST outdated.** First limitation of the study was that the AAST was developed in 1981, when autism was not a well known category for special education field. Also, some of the terminology in the AAST form is out of date and may be offensive to some people in the field, because the scale were developed 33 years ago and there was not enough information about autism. For instance, question 7 on the survey is “I would not want the children in my class to have to put up with autistic children” (Olley et al., 1981). This question was one of the most unanswered questions in this study.

One of the most important implications for the future studies is to develop a new survey with recent terminology in the special education field. A new survey could be designed similar to AAST of Olley et al. (1981) but, there can be more questions to increase reliability and validity of the results.

**Sample size.** The sample size of the study is the limitation to true generalization of the results. The sample of this study is included 53 general education teachers and 64 special education teachers from 10 different cities in 5 geographical regions in Turkey. However, due to

limited time and the way of visiting each school to collect data, it was concluded that 117 educators was a satisfactory number for analyzing scores between two groups.

Future investigators, who want to reach larger numbers of educators or schools, can change the way of collecting data. They may use online scales for collecting data which allows for privacy and broader time to complete survey for respondents.

**Definition of ASD.** Furthermore, the definition of Autism Spectrum Disorder may vary and that makes people may interpret about it. As a result of this, the process of diagnosing students as an autistic is affected. For example, some of the diagnoses of autism come from behavioral observations of clinician or classroom teachers.

**English to Turkish Translation.** On the other hand, about the usage of the AAST and Teacher Demographic Form, translation from English to Turkish is a limitation for the study. The difference between the effect of English and Turkish languages can cause some kind of misunderstandings over the translation. For instance, question 5 on the survey is “Children with Autism can learn from a good teacher” (Olley et al., 1981). Few participants reported their dilemma such as asking “What quality makes a teacher good” about the question 5.

Future investigator in Turkey should consider developing a new survey, piloting the survey, and refining to survey specifically for Turkish educators. That will clear away the misunderstandings and grammar differences between English and Turkish languages.

### **3.9. Summary**

This research identifies the perceptions of teachers about students with Autism in Centers for Education children with Autism. A comparative investigation between special education based and general education based teachers was conducted via statistical analysis of data collected from AAST and Teacher Demographic Form.

This study has future implications for educational practices in OCEMs and public schools. There are many inclusion class in public schools, private schools for student with autism and Centers for Education children with Autism (OCEM). Eventually, opportunity of being in educational setting for a student with Autism is increasing day after day. At that point, significance of teachers` perceptions also increases.



## **Chapter 4 RESULTS**

Special education and general education teachers of Centers for Education Children with Autism (OCEMs) have positive, neutral, and negative beliefs about students with Autism in their classrooms and schools. Their perceptions are significant for students with Autism and also the atmosphere of OCEMs. The AAST, developed by Olley et al. (1981) was used by this investigator to determine the perceptions of special education and general education teachers about their students with Autism in OCEMs.

Special education and general education teachers had different responses on the AAST, which led to a statistically difference between teachers. Special education teachers had generally higher mean scores than general education teachers on the 14 questions of AAST.

### **4.1. Research Questions**

This study includes quantitative and qualitative ways for analyzing data. The design of the research was mixed methods statistics.

The research questions are:

1. What were the Special Education and General Education based teachers' perceptions about students with Autism in Centers for Education children with Autism (OCEM)?
2. What were the differences between Special Education and General Education based teachers' responses on specific questions of the Autism Attitude Scale for Teachers?

## 4.2. Use of Autism Attitude Scale for Teachers (AAST) Results

Each of the 14 questions of AAST has a high mean score of 5.00 per participant. The higher respondent's score on the scale means the participant is more receptive about students with Autism in OCEMs. Besides this, Olley et al. (1981) did not published the scale for measuring receptive beliefs, indicating that, the closer a teacher's score was to highest possible score, the more receptive the teacher's beliefs were in terms of their students with Autism.

To answer Research Question 1, the means for each teachers and teacher group were calculated and used in ANOVA analysis. To answer Research Question 2, AAST question 5, 12 and 14 were further individually examined due to misunderstandings of participants about the "good teacher" conception and difference in standard deviations between groups.

The means and standard deviations for each teacher group for each question were calculated after finding true positive score. The closer score to 5.00, the more positive the teacher group for each specific question. Table 3 shows mean scores and standard deviations for all questions of the AAST scale. Also, t-scores and p-values for each teacher group for each question included by the Table 3. When data analysis of t-tests were completed, using a significance level of .05 there was a significant difference between special education and general education teachers' scores on AAST questions 1, 3, 4, 6, 7, 9, 10, 11, 13, and 14. There was significant difference between teacher groups on 10/14 which is 71.42% of the questions on the AAST. The means, standard deviations, t-scores and p-values were relevant in determining receptiveness of special education and general education teachers of students with Autism on OCEMs on the AAST scale.

Table 3

*Teachers` Scores by Survey Questions*

AAST Questions	Special Ed. M (SD)	General Ed. M (SD)	t	p
1. Only teachers with extensive special education can help a child with autism	1.88 (1.00)	2.74 (1.22)	-4.18	<0.001*
2. Mealtime behaviors of children with autism are disruptive and negatively influence the behavior of children around them.	2.91 (1.16)	2.70 (1.04)	1.006	0.31
3. Schools with both normal and autistic children enhance the learning experience of the normal children	3.64 (1.04)	2.66 (1.10)	4.91	<0.001*
4. Normal children and children with Autism should be taught in separate schools.	3.59 (1.12)	2.15 (1.18)	6.75	<0.001*
5. Children with Autism can learn from a good teacher.	4.36 (0.76)	3.98 (0.88)	2.47	0.015*
6. Regular schools are too advanced for children with Autism.	3.72 (1.33)	2.66 (1.45)	4.09	<0.001*
7. I would not want the children in my class to have to put up with classmates who have Autism.	3.53 (1.30)	2.32 (1.26)	5.05	<0.001*
8. Teachers not specifically trained in special education should not be expected to deal with a child with Autism.	2.50 (1.40)	2.74 (1.36)	-0.91	0.36
9. Children with Autism are too impaired to benefit from the activities of a normal school.	3.48 (1.12)	2.81 (1.14)	3.19	0.002*
10. Schools with both normal and autistic children enhance the learning experience of the autistic children.	4.09 (1.00)	3.04 (1.12)	5.36	<0.001*

11.	If I had a choice, I would teach in a school where there were no children with Autism.	4.05 (1.07)	3.06 (1.27)	4.55	<0.001*
12.	A good teacher can do a lot to help a child with Autism	4.34 (0.91)	3.98 (0.90)	2.14	0.034
13.	Children with autism cannot socialize well enough to profit from contact with normal children	3.75 (1.02)	2.98 (1.16)	3.79	<0.001*
14.	14. It is unfair to ask teacher to accept children with Autism at their school.	4.28 (0.91)	3.09 (1.31)	5.72	<0.001*

\*indicates significant difference at .05 level

**4.3. Research Question 1.** *What were the Special Education and General Education based teachers' perceptions about students with Autism in Centers for Education children with Autism (OCEM)?*

To answer research question 1, it was beneficial to use overall response data for teacher group on the AAST. General education teachers' responses (n=53) on the AAST revealed that they had positive perceptions (M=40.91 from total score) about students with Autism. However, Special education teachers' responses (n=64) on the AAST (M=50.13 from total score) showed that they had more receptive beliefs to the students with Autism in OCEMs compared to general education teachers. Special education teachers had higher mean scores on the 14 questions of the AAST scale than general education teachers, as shown in Table 4. The overall mean scores for the teacher groups might help to identify possible tendencies toward positive perceptions by teachers.

To answer Research Question 1, the mean differences between the two teacher groups were analyzed. The researcher used statistical analysis of ANOVA to compare special education teachers` and general education teachers` reported mean scores on the 14 questions AAST. Table 5 shows the descriptive statistics associated with ANOVA results. The sample size, means, standard deviation, standard error, confidence interval, minimum score, and maximum score of special education and general education teachers on the 14 questions of the AAST are displayed in Table 4.

Table 4

*Descriptive Statistics Associated with ANOVA Results*

Teacher Group	N	M	SD	SE	95 % CI		Min	Max
					LL	UL		
Special Ed. Teachers	64	3.58	.426	.05	3.47	3.68	2.50	4.43
General Ed. Teachers	53	2.92	.516	.07	2.77	3.06	1.86	4.21

To compare the means between special education teachers and general education teachers on the 14 questions AAST, ANOVA analysis with an alpha coefficient of .05 was calculated. ANOVA determines whether a statistical significance exists between the means of two or more groups. Table 5 shows the ANOVA results comparing the means of special and general education teachers on the 14 questions AAST.

Table 5

*ANOVA Results on the AAST*

	SS	df	MS	F	p-value
Between groups	12.572	1	12.572	57.138	<.001
Within groups	25.304	115	.220		
Total	37.876	116			

The overall ANOVA results indicated that there was a difference in mean scores between the social education and general education teachers. This was a statistically significant difference due to the significance level  $p\text{-value} = <.001$  being less than the alpha level which is 0.05. The means between teacher groups differed more than would be expected. According to the comparison of the means of the teachers groups, special education teachers were more receptive than general education teachers about the students with Autism in OCEMs.

**4.4. Research Question 2.** *What were the differences of Special Education and General Education based teachers' responses on specific questions of the Autism Attitude Scale for Teachers?*

During the research, some of the participants asked for clarification survey, but the most common question related to the “good teacher” term used in questions 5 and 12. The researcher noted the difference about the perceptions of the “good teacher” term among teachers. In addition, there is a major difference in the results of standard deviations between special education and general education teachers on AAST question 14. To further explore these differences, crosstabulation and chi-square analysis were completed for these three questions (5,

12 and 14) to find what the differences between special education and general education teachers were in responses. The crosstabulations state the observed and expected frequencies between teacher groups. Chi-square results indicated whether there was a difference between them for the observed frequencies of responses.

All crosstabulation results were reported with the actual response given on the survey, not taking into account reversed scoring for the 14<sup>th</sup> question to prevent confusion. However, in Chi-square analysis, results used reversed scoring for 14<sup>th</sup> question, because it was negatively worded question. For instance, if the participant scored 4 on the 14<sup>th</sup> question, the response was recorded as a 2. The Likert scale used in the scoring of the AAST was as follows; 5= strongly agree, 4= agree, 3= uncertain, 2= disagree, 1= strongly disagree.

Question 5 on the AAST stated, “Children with Autism can learn from a good teacher.” The scores for question 5 were analyzed based on observed count and expected count for each teacher group. Table 6 shows the observed and expected count differences for each teacher group on 5 of the AAST. There was a difference between the special education teachers (n=30) and general education teachers (n=15) who scored strongly disagree (5) on question 5.

Table 6

*Crosstabulation for Question 5*

Group	Responses					Total
	1	2	3	4	5	
<b>Special Ed. Teachers</b>						
Count	1.0	1.0	2.0	30.0	30.0	64.0
Expected count	1.1	1.6	6.0	30.6	24.6	64.0
<b>General Ed. Teachers</b>						
Count	1.0	2.0	9.0	26.0	15.0	53.0
Expected count	0.9	1.4	5.0	25.4	20.4	53.0

There is no large difference in standard deviations between special education (0.76) and general education teachers (0.88), the chi-square statistic (0.058) indicated there was not statistically significant difference between teacher groups also. However, there is insufficient evidence to support this as 50% of the cells have expected frequencies less than 5, which means one of the assumptions of the chi-square was violated and the results may not be meaningful. Table 7 shows the chi-square tests for question 5 on the AAST.

Table 7

*Chi-Square Tests for Question 5*

	Value	Df	Asymp. Sig. (2-sided)
Pearson chi-square	9.120 <sup>a</sup>	4	.058
Likelihood ratio	9.505	4	.050
Linear-by-linear association	5.877	1	.015
N of valid cases	117		

<sup>a</sup> Five cells (50.0%) have expected counts less than 5. The minimum expected count is .91.

Question 12 on the AAST stated, “A good teacher can do a lot to help a child with Autism.” There is also no large difference on the standard deviations between special education (0.91) and general education teachers (0.90). The reported answers on the AAST were explored further using crosstabulation and chi-square statistics. Table 8 shows the observed count and expected count for teacher groups on the AAST scale. As in question 5, the results for question 12 state a large observed difference between the frequency of responses of special education teachers (n=34) and general education teachers (n=15) who entered strongly agree (5).

Table 8

*Crosstabulation for Question 12*

Group	Responses					Total
	1	2	3	4	5	
<b>Special Ed. Teachers</b>						
Count	1.0	4.0	1.0	24.0	34.0	64.0
Expected count	1.1	3.8	4.4	27.9	26.8	64.0
<b>General Ed. Teachers</b>						
Count	1.0	3.0	7.0	27.0	15.0	53.0
Expected count	0.9	3.2	3.6	23.1	22.2	53.0

Table 9 shows the chi-square statistics for question 12 on the AAST. According to the statistics reported, a statistical significance exists between the answers by special education and general education teachers as  $p (0.024) < \alpha (0.05)$ . However, there is insufficient evidence to support this as 60% of the cells have expected frequencies less than 5, which means one of the assumptions of chi-square was violated and the results may not be meaningful.

Table 9

*Chi-Square Tests for Question 12*

	Value	Df	Asymp. Sig. (2-sided)
Pearson chi-square	11.252 <sup>a</sup>	4	.024
Likelihood ratio	11.910	4	.018
Linear-by-linear association	4.456	1	.035
N of valid cases	117		

<sup>a</sup> Six cells (60.0%) have expected counts less than 5. The minimum expected count is .91.

Question 14 on the AAST stated, “It is unfair to ask teachers to accept children with Autism at their school.” This question was the last question to be analyzed using crosstabulation and chi-square statistics. Question 14 was chosen for the difference in standard deviations between special education (0.91) and general education teachers (1.31) was greater than for other questions. Table 10 shows the crosstabulations for the scores for teacher groups on the AAST. In the strongly disagree category (1), 34 special education teachers responded while 9 special education teachers responded.

Table 10

*Crosstabulation for Question 14*

Group	Responses					Total
	5	4	3	2	1	
<b>Special Ed. Teachers</b>						
Count	0	4.0	8.0	18.0	34.0	64.0
Expected count	4.4	7.7	11.5	17.0	23.5	64.0
<b>General Ed. Teachers</b>						
Count	8.0	10.0	13.0	13.0	9.0	53.0
Expected count	3.6	6.3	9.5	14.0	19.5	53.0

The chi-square statistics for question 14 show that there was a likely difference between the responses of special education and general education teachers (Table 11). There was statistically significant difference between the response of special education and general education teachers on question 14. The evidence of this is  $p (.000) < \alpha (0.05)$ . Moreover, there is an evidence to support this as 20% of the cells have expected frequencies less than 5, which means one of the assumptions of chi-square was violated and the results may not be meaningful.

Table 11

*Chi-Square Tests for Question 14*

	Value	Df	Asymp. Sig. (2-sided)
Pearson chi-square	26.302 <sup>a</sup>	4	.000
Likelihood ratio	30.213	4	.000
Linear-by-linear association	25.705	1	.000
N of valid cases	117		

<sup>a</sup> Two cells (20.0%) have expected counts less than 5. The minimum expected count is 3.62.

**4.5. Open-Ended Questions.** The two groups of educators answered two open-ended questions (Teacher Demographic Form Question 9 and 10) to provide information about their advices for other teachers who work with students with Autism in regular schools and their opinions about the importance of the OCEMs. The respondents wrote responses indicating the advices they would need to successfully include students with Autism in their classroom. All of the suggestions identified by educators are listed in Table 12 in order of frequency of the responses.

Table 12

*Suggestions to Other Teachers who works with Student with Autism*

Frequency of Response	Support
22	Prepare IEP for each student
21	Information and reading materials
19	Being patient
13	Special education teachers help
9	Training specifically about Autism
5	Personnel care assistant
4	Cooperation with families
4	Related service consults: OT, PT, Speech
3	Help students meet other students
3	Break biases
2	Use more visual materials
2	Smaller class size
2	Spending more time with students
1	Evaluate students frequently
1	Access to previous teacher to ask questions about what they did
1	Consultation with Autism specialist

The Table 13 shows respondents opinions about importance of OCEMs. Every respondent listed at least one idea, and some listed multiple ideas they have.

Table 13

*Educators Opinions about the importance of OCEMs*

Frequency of Response	Support
25	Provides cooperation with families
15	Helpful educational center for student with Autism
15	Provides cooperation between all members of the education
12	Provide time information for families
8	Helps students for socialize
8	Helps student for being independent
5	Provide opportunity for students to study face to face
2	Puts family in to center of education

## **Chapter 5    DISCUSSION**

General education and special education teachers in the Educational Centers of Students with Autism (OCEMs) indicated having receptive perceptions about students with Autism, measured by mean scores on the Autism Attitude Scale for Teachers. ANOVA results indicated that a statistically significant difference existed between the means on the AAST for the general education and special education teachers. Special education teachers were more receptive to the students with Autism in the OCEMs than general education teachers according to the results.

Questions 5, 12 and 14 on the 14 question of AAST were explored more thoroughly using chi-square analysis, because there is a major difference in the results of standard deviations on question 14, and “good teacher” term which respondents most commonly asked for clarification on question 5 and 12. Further analysis of question 5 results indicated there was not a significant difference in the frequencies of responses on the AAST between general and special education teacher groups.

Both respondent groups were able to state their suggestions to other teachers they work with students with Autism and their opinions about importance of OCEMs. They generally mentioned about collaboration for both open-ended questions. Collaboration between professionals and cooperative work between all members between educational processes are necessary for field of special education.

It is important to recognize and determine the receptiveness of general and special education teachers about students with Autism in Educational Centers of Students with Autism (OCEMs). The ANOVA results indicated there was a statistically significant difference in means between general education and special education teachers established that special education

teachers were more receptive to the students with Autism. For an educational environment whose members are aware of Autism, there should not be a statistically significant difference between general and special education teachers` perceptions.

As the practice of studying students with Autism becomes more routine and successful, the hope is that special and general education teachers` perceptions will become more receptive to the students with Autism in OCEMs and every part of the special education field. Such perceptions are crucial to develop positive environment for all members of the process, not only for students. However, the first important step is to identify these perceptions. This study provides that essential information.

## References

- Baird, G., Simonoff, E., Pickles, A., Chandler, S., Loucas, T., Meldrum, D., & Charman, T. (2006). Prevalence of disorders of the autism spectrum in a population cohort of children in South Thames: The Special Needs and Autism Project (SNAP). *Lancet*, *368*(9531), 210-215.
- Barnett, C., & Monda-Amaya, L. (1999). Principals' knowledge of and attitudes toward inclusion. *Remedial and Special Education*, *19*(3), 181-192
- Boutot, E. A. (2007). Tips for promoting acceptance and friendships for students with autism spectrum disorders in inclusive classroom. *Intervention in School and Clinic*, *42*(3), 156-161
- Boyer, L., & Lee, C. (2001). Converting challenge to success: Supporting a new teacher of students with autism. *The Journal of Special Education*, *35*(2), 75-83
- Campbell, J. M. (2006). Challenging children's attitudes toward autism: A process of persuasive communication. *Journal of Developmental and Physical Disabilities*, *18*(3), 251-272
- Dunlap, G., & Fox, L. (1999). Teaching students with autism. *ERIC Digest*, *E582*, 1-7.
- Friedlander, D. (2009). Sam comes to school: Including students with autism in your classroom. *Clearing House: A Journal of Educational Strategies, Issues and Ideas*, *82*, 141-144
- Harding, S. (2009). Successful inclusion models for students with disabilities require strong site leadership: Autism and behavioral disorders create many challenges for the learning environment. *The International Journal of Learning*, *16* (3), 91-103

- Hollenbeck, D. F. (2004, November). *Pennsylvania public schools autism prevalence report series, 1992-2003*. Gibsonia, PA: Fighting Autism
- Jennett, H. K., Harris, S., & Mesibov, G. (2003). Commitment to philosophy, teacher efficacy, and burnout among teachers of children with autism. *Journal of Autism and Developmental Disorders, 33*(6), 583-593
- Kosmerl, K. M. (2011). *A Comparative Investigation of General and Special Education Elementary Teachers' Beliefs about including students with an educational disability of autism in the general education setting*. (Doctoral Dissertation). Widener University, Chester, PA. (UMI No. 3486409)
- National Dissemination Center for Children with Disabilities. (1995, June). Planning for inclusion. *NICHCY News Digest, 5*(1).
- National Dissemination Center for Children with Disabilities. (2007, April). Fact sheet on autism. *NICHCY News Digest, 1-6*
- Olley, J. G., DeVellis, R., McEvoy-DeVellis, B., Wall, A.J., & Long, C. (1981). *Suggestions for the administration of the autism attitude scale for teachers*. Chapel Hill, NC: Division TEACCH at UNC. Retrieved from ERIC database. (ED2049422)
- Oulette-Kuntz, H., Coo, H., Lloyd, J., Kasmara, L., Holdern, J., & Lewis, M. (2007). Trends in special education code assignment of autism: Implications for prevalence estimates. *Journal of Autism and Developmental Disorders, 37*, 1941-1948
- Park, M., & Chitiyo, M. (2011). An examination of teacher attitudes towards children with autism. *Journal of Research in Special Educational Needs, 11*, 70-78

Robertson, K., Chamberlain, B., & Kasari, C. (2003). General education teachers' relationships with included students with autism. *Journal of Autism and Developmental Disorders*, 33(2), 123-130.

Scruggs, T.E., & Mastropieri, M. A. (1996). Teacher perceptions of mainstreaming inclusion, 1958-1995; A research synthesis. *Exceptional Children*, 63, 59-74

White-Williams, S., Scahill, L., Klin, A., Koenig, K., & Volkmar, F. R. (2007). Educational placements and service use patterns of individuals with autism spectrum disorders. *Journal of Autism and Developmental Disorders*, 37, 1403-1412.

## APPENDIX A

### IRB APPROVAL

PENNSSTATE



Vice President for Research  
Office for Research Protections

The Pennsylvania State University  
The 330 Building, Suite 205

Phone : (814) 865-1775  
Fax: (814) 863-8699  
Email : [orprotections@psu.edu](mailto:orprotections@psu.edu)  
Web : [www.research.psu.edu/orp](http://www.research.psu.edu/orp)

**Date:** April 30, 2013

**From:** The Office for Research Protections - FWA#: FWA00001534  
Stephanie L. Krout, Compliance Coordinator

**To:** Muhammed A. Karal

**Re:** Determination of Exemption

**IRB Protocol ID:** 43009

**Follow-up Date:** April 29, 2018

**Title of Protocol:** Comparative Investigation of differences between Special Education and non-special education teachers` perception about students with Autism

The Office for Research Protections (ORP) has received and reviewed the above referenced eSubmission application. It has been determined that your research is exempt from IRB initial and ongoing review, as currently described in the application. You may begin your research. The category within the federal regulations under which your research is exempt is:

**45 CFR 46.101(b)(2)** Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless: (i) information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects; and (ii) any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.

**Given that the IRB is not involved in the initial and ongoing review of this research, it is the investigator's responsibility to review [IRB Policy III "Exempt Review Process and Determination"](#) which outlines:**

What it means to be exempt and how determinations are made

What changes to the research protocol are and are not required to be reported to the ORP

Ongoing actions post-exemption determination including addressing problems and complaints, reporting closed research to the ORP and research audits

What occurs at the time of follow-up

Please do not hesitate to contact the Office for Research Protections (ORP) if you have any questions or concerns. Thank you for your continued efforts in protecting human participants in research. This correspondence should be maintained with your research records.

## APPENDIX B

### BELIEF SCALE FORM A

Belief Scale  
Form A

Key:

SD: Strongly disagree

D: Disagree

U: Uncertain

A: Agree

SA: Strongly Agree

	SD	D	U	A	SA
Only teachers with extensive special education training can help a child with autism	1	2	3	4	5
Mealtime behaviors of children with autism are disruptive and negatively influence the behavior of children around them	1	2	3	4	5
Schools with both normal and autism children enhance the learning experience of the normal children.	1	2	3	4	5
Normal children and children with autism should be taught in separate schools.	1	2	3	4	5
Children with autism can learn from a good teacher.	1	2	3	4	5
Regular schools are too advanced for children with autism.	1	2	3	4	5
I would not want the children in my classroom To have to put up with classmates who have autism.	1	2	3	4	5

## APPENDIX C

### BELIEF SCALE FORM B

Belief Scale  
Form B

Key:

SD: Strongly disagree

D: Disagree

U: Uncertain

A: Agree

SA: Strongly Agree

	SD	D	U	A	SA
Teachers not specifically trained in special education should not be expected to deal with a child with autism.	1	2	3	4	5
Children with autism are too impaired to benefit from the activities of a normal school.	1	2	3	4	5
Schools with both normal and autistic children enhance the learning experience of the autism children.	1	2	3	4	5
If I had a choice, I would teach in a school where there were no children with autism	1	2	3	4	5
A good teacher can do a lot to help a child with autism.	1	2	3	4	5
Children with autism cannot socialize well enough to profit from contact with normal children	1	2	3	4	5
It is unfair to ask teachers to accept children with autism at their school.	1	2	3	4	5

## APPENDIX D

### TEACHER DEMOGRAPHIC FORM

Teacher Demographic Form  
(to be completed at the time of Belief Scale)

1. Female \_\_\_\_\_  
Male \_\_\_\_\_ Age \_\_\_\_\_
2. In which city and school are you working currently?
3. Which university is you graduated from or become certified?
4. In what subject do you have your graduate diploma or certificate?
5. In what year did you graduate or become certified for special education?
6. How long have you been teaching in Educational Center of Children with Autism (OCEM)?
7. Have you previously had a student with autism included in your general education classroom or private schools for children with disabilities?
8. What kind of training you experienced about students with Autism?
 

Workshop _____	College/University Course _____
Seminar _____	Special Education Congress _____
Other _____	
9. As a teacher in Educational Center of Children with Autism (OCEM), what supports can you provide to general education teachers to successfully include students with autism in the general education classroom setting?
10. As a teacher in Educational Center of Children with Autism (OCEM), What are the significance of these Centers for children with Autism?