

An Investigation of Teachers' Attitudes towards Children with Asperger's Syndrome

Mogbel Aid K Alenizi¹

¹ Department of Education, College of Arts and Sciences, Rafha Male Campus, Northern Border University, Rafha, Kingdom of Saudi Arabia (KSA)

Correspondence: Deanship of Preparatory & Supportive Studies, Rafha Male Campus, Northern Border University, P O Box 1189, Pin Code 91911, Rafha, Kingdom of Saudi Arabia (KSA). Tel: 966-56-373-6333. E-mail: mugbel999@hotmail.com

Received: October 4, 2015

Accepted: October 21, 2015

Online Published: November 9, 2015

doi:10.5539/jel.v4n4p136

URL: <http://dx.doi.org/10.5539/jel.v4n4p136>

Abstract

The purpose of this research is to measure the teachers' awareness of, and attitudes towards children with Asperger's Syndrome (AS, hereafter). The main intention was to sample primary school teachers; however time constraints dictated that the 30 teachers (male and female), who participated in this study, were postgraduate students and teaching staff. The instrument used in this study was a questionnaire that consisted of 34 items; 15 on attitude and 15 on knowledge. The independent variables were gender, age and experience of teaching children with Special Educational Needs; the dependent variables were knowledge of and attitude towards children with AS. The responses were subjected to a range of tests which, in the first place, showed there were some problems with the design of the questionnaire, also that responses were not a normal distribution, so the chosen tests were non-parametric, mainly Mann-Whitney U test. Very few differences in knowledge or attitude were found among the different groups of teachers. No significant differences in either knowledge or attitude were found in age or gender. The one interesting finding was that whilst teachers with experience of teaching children with Special Educational Needs (SEN, hereafter) had more knowledge, they were no more likely to have positive attitudes than others.

Keywords: Asperger's Syndrome, teachers' training, teachers' attitudes

1. Introduction

Although there have been a number of studies into attitudes to social inclusion, such as those reported in Avramidis and Norwich (2002) or one carried out on a sample of initial teacher education students taking the secondary Postgraduate Certificate of Education (Richards & Clough, 2004), interest in AS is relatively recent, often brought to attention by parents stating that their children have not had the right kind of help at school. Howlin and Asgharian (1999) that children with AS tended to be diagnosed at a mean age of 11.13 years compared with 5.49 years for other forms of autism. The gap between parents raising concern and diagnosis was also longer. This may be partly due to the fact that Asperger children can seem average or above average in other ways, and for similar reasons their educational needs in terms of pedagogy may be unrecognized for some time. For this reasons, it was felt that a small scale study into knowledge and attitudes on the part of teachers or student teachers could be useful.

In view of the increasing attention to social inclusion, and the expansion of training for teachers working with children with SEN, it was also interesting to see if knowledge and attitudes varied with age, gender and experience, to gain an initial idea of whether there might be a need for specialized training for particular groups of teaching staff and the existing level of knowledge.

2. Literature Review

AS also called Asperger's disorder is a type of Pervasive Development Disorder (PDD). PDDs are a group of conditions that involve delays in the development of many basic skills, most notably the ability to socialize with others, to communicate, and to use imagination. There is a spectrum within the PDD disorders. Although AS is similar in some ways to autism, another more severe type of PDD, but there are some important differences. Children with AS typically function better than those with autism. In addition, children with AS generally have normal intelligence and near-normal language development, although they may develop problems communicating as they get older. However, AS was not recognized as a unique disorder until much later. It is relatively a new type of developmental disorder, recognized in a more general term over the last fifteen years.

Hans Asperger (1944) published a paper on the high functioning group of students with many of the symptoms similar to autism, but with differences as well. It was just a case of autism without language delay and with an above average IQ level. With an excellent memory and attention, this group of children had some symptoms very similar to autism. In 1981, Laura Wing suggested that autism was a spectrum, not a categorical diagnosis. She brought Asperger's idea to the world of academics (Woodbury-Smith & Volkmar, 2008). Asperger's syndrome became the diagnosis in its own right in 1994 (APA, 1994) and is considered now as the highest functioning condition on the spectrum of autistic disorder. Many do recommend students with AS to be included into a mainstream classroom; it is not an easy procedure for either the school administration or the classroom teacher to handle such cases. The students with AS do certainly have additional needs for which they "require special accommodation made to the classroom routine in order for them to feel comfortable and safe within the classroom setting" (Betts, Betts, & Gerber-Eckard, 2007, p. 13). The mainstream classroom setting is favored by parents and professionals as these students exhibit at least average or above-average intelligence (Safran, 2002; Schnur, 2005). However, they often subjected to bullying by the classmates so regular classroom settlement possibly creates an emotionally damaging circumstances for such students (Fine & Myers, 2004; Safran, 2002). Most of the researches in this field of study have tried to explain the symptoms and the characteristics of the disorder so as to better understand the needs of such students.

To include such students into the mainstream classroom needs the teachers to be a blend of mainstream and special education practitioner. It requires the teachers to have perfect capabilities and expertise so that they can handle such cases with utmost care and confidence (Kugelmass, 2000; Pace, 2003; cited in Hsien, Brown, & Bortoli, 2009). According to Hsien, Brown and Bortoli, "general and special education teacher training have been traditionally separate from each other" (2009, p. 28). This results in inadequate training in special education of established teachers who are now teaching inclusive classrooms. This further leads to a development of self-perception that a teacher lacks the capabilities to successfully meet all student needs. Forlin (2001) carried on the same line and identified that 70% of classroom teachers lack formal training in either special education or inclusive education. Since the parents and professionals stressed the need for inclusion, it is a disturbing to have untrained, less-than-confident teachers educating the students who need their support and experience to overcome such disorder.

Furthermore, students with AS are often blamed for their lack of social understanding and for creating stressful situations. Understanding that students with AS have a developmental disorder that dictates and influences their behavior is the most important concept when engaging with a child with AS (Fine & Myers, 2004). In order to avoid hostile situations and become more understanding of the condition, teachers, for the sake of the students, the students' parents, the teachers themselves and the school, need to be provided with the proper training that will allow them to successfully understand and meet the needs of students with AS.

3. Methodology

The methodology for the study involved the development of an instrument that was used by the researcher to investigate knowledge of, and attitudes towards, children with AS in the context of inclusive education. The instrument was based on a series of questions as follows. The attitude questions were asked before the knowledge questions and were:

- a) Inclusive education is appropriate for our society.
- b) It is easier to include children with physical impairment than those with mental impairment.
- c) What is now called autistic spectrum disorder used to be called bad behavior?
- d) In the past, classroom discipline worked well in managing both bad behavior and autistic spectrum disorder.
- e) The inclusive school is a good idea.
- f) Statementing of children with SEN solves many of the problems.
- g) Children with AS are often gifted and talented.
- h) Autistic children with challenging behavior should be taught separately.
- i) Children with autistic spectrum disorder used to be called “loners”, “withdrawn”, “unsociable”.
- j) The vision of all children being educated together is an illusion.
- k) The inclusive classroom is not a good idea.
- l) Inclusion makes teaching more difficult.
- m) It is appropriate for all children who exhibit challenging behavior to be taught separately from other children.
- n) Children with AS are disadvantaged because they often seem “normal”.
- o) It is good that learning difficulties like those caused by AS are recognized.

The knowledge questions that followed were:

- a) AS is a mild form of autism.
- b) Clumsiness and poor co-ordination can indicate that a child has AS.
- c) Shouting inappropriately can indicate that a child has AS.
- d) Persistent rocking movements can indicate that a child has AS.
- e) Poor eye contact can indicate that a child has AS.
- f) A child with AS may play with toys differently e.g. line them up, take them apart.
- g) There is a great deal of help available for teachers-specialist services, training and support.
- h) Special techniques are needed for teaching children with SEN.
- i) Children with AS may be gifted and talented.
- j) The inclusive classroom requires a broad range of teaching strategies and resources.
- k) The inclusive classroom requires a broad range of teaching strategies and resources.
- l) Children with SEN are more likely to be bullied and under-achieve.
- m) Children with AS tend to be withdrawn and benefit from socialization.
- n) Delayed speech and a literal understanding of language may indicate Asperger's.
- o) AS is sometimes referred to as “high functioning autism”.

The questions were an attempt to operationally define attitude as the self-report of attitude shown to AS in the context of inclusion. The aspects of attitude to be measured were a combination of affective and cognitive.

The rating mechanism was a five-point Likert scale (strongly agree; agree; neither agree nor disagree; disagree; strongly disagree). A Likert scale was chosen because as Neuman (2000) pointed out, it is simple and easy to use. The second set of questions were an attempt to operationally define knowledge as the answers (true/false/not sure) to fifteen questions about the characteristics of children with AS and teaching and learning strategies appropriate for such children. It was decided to include a “not sure” category in order to avoid forced or missing answers if respondents were uncertain, as recommended by Oppenheim (1992).

Time constraints meant that it was not possible to pilot the questionnaire, a major omission in any piece of research, and the findings have to be treated with extreme caution for this reason.

Questionnaires were administered via email or by personal delivery as the quickest way of conducting a survey. Responses were collated, giving a breakdown of answers by demographics (gender, age, and experience of teaching children with Special Educational Needs) and aggregated responses. Responses were analyzed using SPSS and the findings are given later. However, no interviews were conducted and so it was not possible to explore the reasons why respondents held particular attitudes.

3.1 Data

The original intention was to identify between 20 and 50 primary school teachers in Exeter. They were drawn from a sampling frame of all primary schools; by writing to the Head Teacher of each of the 47 primary schools asking for maximum participation in the study by individual teachers; sending copies of questionnaires to each school and if possible carrying out follow-up interviews. It was recognized that time could be too short to do this, so the actual sample was made up of 30 teachers, male and female, who were postgraduate students and University of Exeter teaching staff.

The risk of bias in the originally proposed sample was recognized and the actual sample potentially carried an even greater risk of bias. It was possible that teachers who were studying courses concerning children with SEN would have greater knowledge and feel more positive about children with AS. The risk of bias could affect the external validity of the results because it may not be possible to generalize the findings.

3.2 Hypotheses

H₁ If primary school teachers have experience of teaching children with SEN; they will score more highly on the knowledge test and have more positive attitudes towards children with AS than the teachers without such experience.

H₀₁ There will be no significant differences between primary school teachers with and without experience of teaching children with SEN concerning their knowledge of and attitudes towards children with AS.

Dependent Variables: Attitude and knowledge

Independent variable: Experience

H₂ Female teachers without experience of teaching children with SEN will have more positive attitudes towards children with AS than the male teachers without experience of teaching children with Special Educational Needs

H₀₂ There will be no significant differences between female and male teachers without experience of teaching children with SEN concerning their knowledge of and attitudes towards children with AS.

Dependent Variable: Attitude

Independent variables: Gender and Experience

H₃ Female teachers with more positive attitudes towards children with AS will score more highly on the knowledge test than other teachers.

H₀₃ There will be no significant differences between female teachers with and without more positive attitudes concerning their knowledge of AS.

Dependent Variables: Attitude and Knowledge

Independent variable: Gender (only female)

H₄ If a primary school teacher is aged under forty, they will have more knowledge and a more positive attitude towards children with AS.

H₀₄ There will be no significant differences between teachers aged under and over forty concerning their knowledge of and attitudes towards children with AS.

Dependent Variables: Attitude and Knowledge

Independent variable: Age

3.3 Test: Validity, Reliability and Consistency

The internal consistency reliability of the attitude scale was determined by computing Cronbach's Alpha as shown in Table 1. The value was unacceptably low at 0.055 and so the questions which were causing difficulties were removed.

Table 1. Reliability: results of Cronbach's Alpha test before removal of items

Reliability Statistics	
Cronbach's Alpha	N of Items
.055	15

This table shows that the value of Cronbach's Alpha was 0.055 which is extremely low. By deleting five items: (1) Inclusive education is appropriate for our society, (7) Children with AS are often gifted and talented, (9) Children with autistic spectrum disorder used to be called "loners", "withdrawn", "unsociable", (13) It is appropriate for all children who exhibit challenging behavior to be taught separately from other children, and (15) It is good that learning difficulties like those caused by AS are recognized, the value of Alpha was increased to 0.435, as shown in Table 2, leaving ten items in the attitude scale. The questions that were omitted showed there were several reasons for the difficulties: in some cases, the attitude scale worked in an opposite direction to the questions that were retained, there were too many things other than attitudes to Asperger's being addressed such as wider issues of inclusion, and there was a possibility that the question could have been worded with greater clarity in one or two cases. The attitude score was therefore computed by summing the score on the remaining ten items.

Table 2. Reliability: results of Cronbach's Alpha test after removal of items

Reliability Statistics	
Cronbach's Alpha	Number of Items
.435	10

3.4 Test of Normality of Distribution

In order to decide whether it is more appropriate to run parametric or non-parametric tests, a decision usually being based on whether the sample gives a binomial (normal) distribution or not, the first step was to test for normality of distribution.

The histogram of knowledge scores shown at Figure 1 indicates that the distribution was not normal. There was one group with a high score and a second group with a low score. For this reason, it was decided to use non-parametric tests with the knowledge scores.

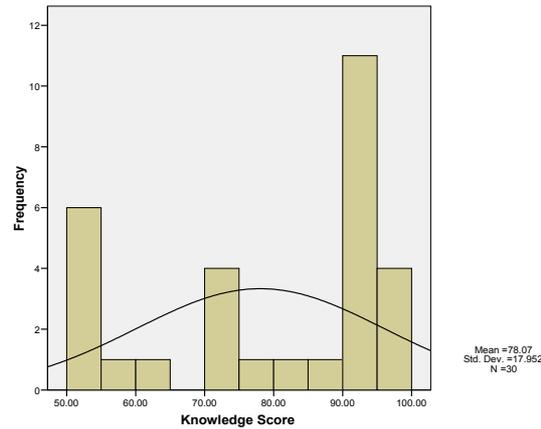


Figure 1. Normality of distribution of knowledge scores

In contrast, the histogram for attitude scores appears to be near to a normal distribution in Figure 2.

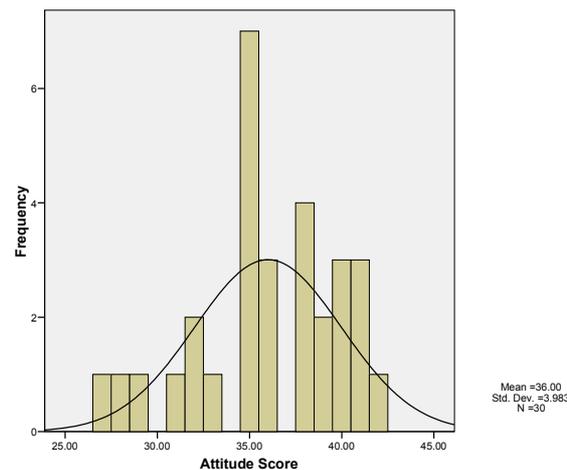


Figure 2. Normality of distribution of attitude scores

The Kolmogorov-Smirnov test does not require the assumption that the population is normally distributed therefore was chosen to test whether the sample of data was consistent with a normal distribution. The results are shown at Table 3. The KS result for the knowledge scores had a significance level of 0.000, confirming that their distribution was not a normal one. For the attitude scores, the KS statistic had a significance level of 0.031, which is less than 0.05, showing that the distribution of attitude scores was also not a normal one. For this reasons it was decided to use non-parametric statistics throughout the analysis. Non-parametric tests can be more powerful in detecting population differences when certain conditions such as normal distribution cannot be met (Hinton, 2004; Kinnear & Gray, 2006).

Table 3. Normality of distribution: results of Kolmogorov-Smirnov Test

	Test of Normality					
	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Knowledge Score	.247	30	.000	.816	30	.000
Attitude Score	.168	30	.031	.943	30	.112

a. Lilliefors Significance Correction

These tests confirmed what was predicted in the original design, that the sample was likely to contain bias, and with the unavoidable amendment to the sample selection, the possibility of bias was even stronger.

4. Data Analysis and Generalizations

The tests that were run were Cronbach's alpha, Kolmogorov-Smirnov and Whitney-Mann U on each of the independent variables experience, gender and age.

As a starting point, the median scores on knowledge and attitude were compared for the groups of teachers with and without experience. The median, rather than the mean, was chosen because the statistics are non-parametric. Figure 3 shows that teachers with experience with SEN had a higher median knowledge score than those without experience.

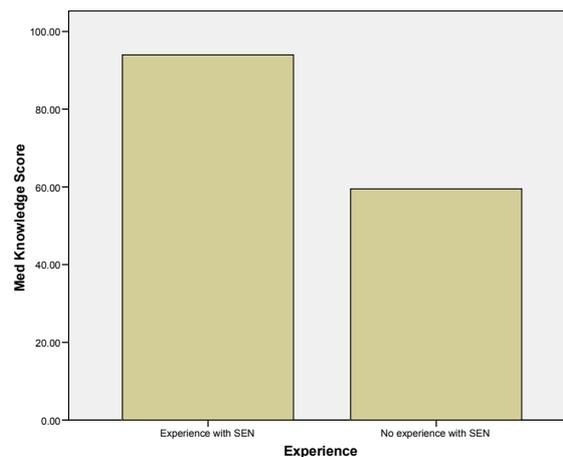


Figure 3. Median knowledge scores of teachers with and without experience

However, on the attitude scores, the teachers without experience with SEN had a slightly higher median attitude score than those with experience.

This was confirmed by analyzing the mean rank and sum of ranks (Table 4) which showed that the mean rank on knowledge score of teachers with experience was 20.92, which was higher than those without experience (7.38). The reverse was true for the scores of response to the attitude questions, where the mean rank was higher (19.25) for teachers without experience than for teachers with experience (13.00), as in Figure 4.

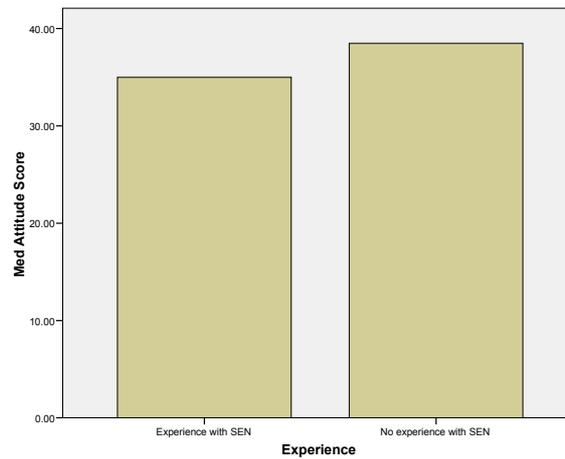


Figure 4. Median attitude scores of teachers with and without experience

Table 4. Median scores of Knowledge and Attitude

		Ranks		
	Experience	N	Mean Rank	Sum of Ranks
Knowledge Score	Experience with SEN	18	20.92	376.50
	No experience with SEN	12	7.38	88.50
	Total	30		
Attitude Score	Experience with SEN	18	13.00	234.00
	No experience with SEN	12	19.25	231.00
	Total	30		

4.1 Testing of Hypotheses

H_1 If primary school teachers have experience of teaching children with SEN; they will score more highly on the knowledge test and have more positive attitudes towards children with AS than the teachers without such experience.

H_{01} There will be no significant differences between primary school teachers with and without experience of teaching children with SEN concerning their knowledge of and attitudes towards children with AS.

4.1.1 Testing the Null Hypothesis H_{01}

A Mann-Whitney U test was performed to test for the significance of difference between the median scores of teachers with and without SEN experience on knowledge and attitudes (see Table 5). The Mann-Whitney U Test gave a two tailed significance level of 0.000, where less than 0.01 showing that the difference between the two groups on knowledge score was significant at the 1% level. Thus, in the sample, teachers with SEN experience had more knowledge about children with AS than the teachers without such experience. The null hypothesis H_{01} is therefore rejected for knowledge.

Table 5. Test statistics for teachers without experience

	Test Statistics ^b	
	Knowledge Score	Attitude Score
Mann-Whitney U	10.500	63.000
Wilcoxon W	88.500	234.000
Z	- 4.171	-1.922
Asymp. Sig. (2-tailed)	.000	.055
Exact Sig. [2*(1 tailed Sig.)]	.000 ^a	.059 ^a

a. Not corrected with ties

b. Grouping Variables: experience

Next, however, applying the Mann-Whitney U to the attitude scores test gave a two tailed significance level of 0.055, which is greater than 0.05, showing that the difference between the two groups on attitude score was not significant. Thus, in the sample, the teachers with and without experience had the same attitude towards children with AS. The null hypothesis H01 is accepted for attitude: the findings support the null hypothesis H01.

H₂ Female teachers without experience of teaching children with SEN will have more positive attitudes towards children with AS than the male teachers without experience of teaching children with Special Educational Needs.

H0₂ There will be no significant differences between female and male teachers without experience of teaching children with SEN concerning their knowledge of and attitudes towards children with AS.

4.1.2 Testing the Null Hypothesis H02

Firstly, respondents without experience of teaching children with SEN were selected and a Mann-Whitney U Test was carried out as shown in Table 5. The results were then found that the male respondents had a slightly higher knowledge score whilst the female respondents had a slightly higher attitude score than the males (see Table 6).

Table 6. Results of Mann-Whitney U test

	Ranks			
	Gender	N	Mean Rank	Sum of Ranks
Knowledge Score	1=Male	6	6.67	40.00
	2=Female	6	6.33	38.00
	Total	12		
Attitude Score	1=Male	6	6.25	37.50
	2=Female	6	6.75	40.50
	Total	12		

However, the significance level of the Mann-Whitney U statistic was much higher than 0.05 in each case (at $p=0.866$ and $p=0.808$), showing that the slight differences were not statistically significant. Thus, the null hypothesis H02 is accepted. In this survey and sample, there was no significant difference between female and male teachers without experience of teaching children with SEN concerning their knowledge of and attitudes towards children with AS. The findings support the null hypothesis H02.

H₃ Female teachers with more positive attitudes towards children with AS will score more highly on the knowledge test than other teachers.

H0₃ There will be no significant difference in knowledge score between female teachers with more positive attitudes concerning their knowledge of AS and other teachers.

4.1.3 Testing the Null Hypothesis H03

A new variable was created called “female positive attitude” in which females with an attitude score of 36.01 and above were coded as “female with positive attitude” while others females and all males were coded as “others”. A Mann-Whitney U Test was performed.

Table 7. Mean Rank of Knowledge Score (females with positive attitudes and others)

		Ranks		
	Female Positive Attitude	N	Mean Rank	Sum of Ranks
Knowledge Score	Female with positive attitude	10	13.50	135.00
	Others	20	16.50	330.00
	Total	30		
		Test Statistics ^b		
		Knowledge Score		
	Mann-Whitney U		80.000	
	Wilcoxon W		135.000	
	Z		-.889	
	Asymp. Sig. (2-tailed)		.374	
	Exact Sig. [2*(1 tailed Sig.)]		.397 ^a	

a. Not corrected for ties

b. Grouping Variable: Female Positive Attitude

The Table 7 shows the mean rank of females with positive attitude was a little lower than the mean rank of all others on their knowledge scores.

The significance level was found to be 0.374, showing that the result was not statistically significant. For this reason, the null hypothesis H03 is accepted: the findings support the null hypothesis H03.

H0₄ If a primary school teacher is aged under forty, they will have more knowledge and a more positive attitude towards children with AS.

H⁴ There will be no significant differences between teachers aged under and over forty concerning their knowledge of and attitudes towards children with AS.

4.1.4 Testing the Null Hypothesis H04

A Mann-Whitney U Test was performed using knowledge and attitude as the dependent variables and age as the independent variable.

Table 8. Mean Rank of Knowledge score and Attitude Score (Age)

	Ranks			
	Age	N	Mean Rank	Sum of Ranks
Knowledge Score	25-39	26	15.29	397.50
	40 and over	4	16.88	67.50
	Total	30		
Attitude Score	25-39	26	15.15	394.00
	40 and over	4	17.75	71.00
	Total	30		

	Test Statistics ^b	
	Knowledge Score	Attitude Score
Mann-Whitney U	46.500	43.000
Wilcoxon W	397.500	394.000
Z	-.339	-.554
Asymp. Sig. (2-tailed)	.735	.580
Exact Sig. [2*(1 tailed Sig.)]	.746 ^a	.617 ^a

a. Not corrected for ties

b. Grouping Variable: age

The significance level were found to be $p=0.735$ for knowledge and $p=0.580$ for attitude (see Table 8). Thus, neither was statistically significant and the null hypothesis H04 is accepted. The findings support the null hypothesis H04.

To summarize, the only significant difference that was found was that teachers with experience of teaching SEN students had more knowledge about AS than did teachers without such experience. However, there was no significant difference between these groups on attitude scores, nor were any significant differences found according to age or gender differences were found on attitude or knowledge scores.

This in itself is interesting, as some correlation between knowledge and attitude might be expected, also some correlation between experience and positive attitudes. The reasons for a lack of correspondence in the areas might merit further investigation, as the findings from this small and admittedly biased sample would tend to suggest that experience and study make little difference to teaching in practice.

5. Conclusion and Recommendations

Although there was statistical support for only the hypothesis that teachers with experience were likely to have more knowledge, this survey raised more questions than it answered.

Two kinds of recommendations are included in this section. The first relates to improving the questionnaire design and the methodology in any future research. The second group concerns future studies in this area.

In the first set of recommendations, piloting of any questionnaire is essential, and surveys dealing with attitudes are more difficult to construct. Questionnaires alone are unlikely to reveal much unless they are supported by interviews which can explore the reasoning behind the answers for at least some of the survey respondents, more careful thought and design, including a clearer focus and decision about the critical aspects of the attitude to be measured is required. Similarly, the scoring of some answers ran in the opposite direction to others which made it difficult to use answers to those questions (which may have been good ones) in SPSS analysis.

Also, the sample was too small and biased to establish any findings except possibilities and was in addition biased. Selecting an unbiased sample of sufficient size is an important component of any scientific survey. The ANOVA (two-way analysis of variance) test is one of the most widely accepted tests, but this works on the basis of normal distributions within interest groups and it has already been said that the sample included bias.

Recommendations for further research are that follow up interviews are conducted with some of the sample, or in preference that a new study is designed with a more robust questionnaire and interviews used to explore the reasons behind some of the respondents' answers. It is an area of concern for teachers, teacher educators and children with AS alike that there may possibly be no interrelatedness between knowledge, attitudes and experience. Although the scores were not statistically significant, it is also of concern that on the attitude scores, teachers without experience with SEN had a slightly higher median attitude score than those with experience.

There could be many reasons for this, perhaps the education system, funding arrangements, curriculum, constraints imposed by individual schools or local authorities, but it is definitely an area of interest.

References

- Avramidis, E., & Norwich, B. (2002). Mainstream teachers' attitudes towards inclusion/integration: A review of the literature. *European Journal of Special Needs Education*, 17(2), 1-19. <http://dx.doi.org/10.1080/08856250210129056>
- Betts, S. W., Betts, D. E., & Gerber-Eckard, L. N. (2007). *Asperger Syndrome in the Inclusive Classroom: Advice and strategies for teachers*. London: Jessica Kingsley Publishers.
- Kinney, P. R., & Gray, C. D. (2006). *SPSS 14 Made Simple*. Psychology Press.
- Fine, F., & Myers, J. (2004). Understanding students with Asperger's syndrome. *Phi Delta Kappa Fastbacks*, 520, 6-38.
- Frith, U., Morton, J., & Leslie, A. M. (1991). The cognitive basis of a biological disorder: Autism. *Trends in Neurosciences*, 14, 433-438. [http://dx.doi.org/10.1016/0166-2236\(91\)90041-R](http://dx.doi.org/10.1016/0166-2236(91)90041-R)
- Florian, L. (2008). Special or inclusive education: Future trends. *British Journal of Special Education*, 35(4), 202-208. <http://dx.doi.org/10.1111/j.1467-8578.2008.00402.x>
- Forlin, C. (2001). Inclusion: Identifying potential stressors for regular class teachers. *Educational Research*, 43(3), 235-245. <http://dx.doi.org/10.1080/00131880110081017>
- Hsien, M., Brown, M., & Bortoli, A. (2009). Teacher qualifications and attitudes toward inclusion. *Australasian Journal of Special Education*, 33(1), 26-41. <http://dx.doi.org/10.1375/ajse.33.1.26>
- Hinton, P. R. (2004). *Statistics Explained A Guide for Social Science Students*. Routledge.
- Howlin, P., Goode, S., Hutton, J., & Rutter, M. (2004). Adult outcome for children with autism. *Journal of Child Psychology & Psychiatry*, 45(2), 212-229. <http://dx.doi.org/10.1111/j.1469-7610.2004.00215.x>
- Howlin, P., & Asgharian, A. (1999). The diagnosis of autism and AS: Findings from a survey of 770 families. *Developmental Medicine and Child Neurology*, 41, 834-839. <http://dx.doi.org/10.1017/S0012162299001656>
- Neuman, W. L. (2000). *Social Research Methods: Qualitative and Quantitative Approaches*. USA: Allyn & Bacon.
- Oppenheim, A. N. (1992). *Questionnaire design, interviewing and attitude measurement*. London, Pinter Publications.
- Richards, G., & Clough. (2004). ITE students' attitudes to inclusion. *Research in Education*, 72, 77-86. <http://dx.doi.org/10.7227/RIE.72.6>
- Safran, J. (2002). Supporting students with Asperger's syndrome in general education. *Teaching Exceptional Children*, 34(5), 60-66.
- Schnur, J. (2005). Asperger syndrome in children. *Journal of the American Academy of Nurse Practitioners*, 17(8), 302-308. <http://dx.doi.org/10.1111/j.1745-7599.2005.0053.x>
- Winter, M. (2003). *Asperger Syndrome: What teachers need to know*. London, Jessica Kingsley Publishers.
- WoodburySmith, M. R., & Volkmar, F. R. (2008). Asperger syndrome. *European Child & Adolescent Psychiatry*, 18, 2-11.

Copyrights

Copyright for this article is retained by the author(s), with first publication rights granted to the journal.

This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/3.0/>).