Effects of Inclusion on Language Development in Hearing-Impaired Students in Jeddah Schools: Perspectives of Teachers and Parents

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Abstract: This study aimed to examine the effects of inclusion on the language development of hearing-impaired students (HIS) from the perspectives of parents and teachers. To achieve the objectives of the study, a Language Development Estimation List was designed that consisted of two main dimensions: receptive language (25 items) and expressive language (31 items). A descriptive-comparative research approach was used to examine the differences between the teachers' and parents' assessments of students' language levels according to their educational settings (special schools for deaf students or inclusive schools). This study included a purposive sample of 41 teachers and 113 parents. The teachers' assessments showed higher receptive language scores and total scores for the inclusive school students. However, the results of the parents' assessments showed no statistically significant differences between the students at the inclusive school and those at the school for the deaf with respect to expressive or receptive language abilities. That is, the inclusion effect remains less than desired.

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Key words: deaf, impairment, language, inclusion, hearing impairment.

1. Introduction

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In Saudi Arabia, where the population is 29 million (according to the General Statistics Authority, 2011, http://www.cdsi.gov.sa), the number of individuals with hearing impairment may be as high as 100,000 (Allen, 2008). These individuals have the right to a number of services (Disabled Care System in Saudi Arabia No/37, dated 12/20/2000), the most important of which are educational services. The education of hearing-impaired students (HIS) in Saudi Arabia began in 1972, when the first school for HIS, the Al-Amal Institute for the Deaf, was established (Al-Mousa, 1999). The institute was an example of the segregation of HIS from their hearing counterparts. Since the establishment of the institute, the education of HIS in Saudi Arabia has developed remarkably in two respects: (1) quantity—the number of schools for HIS (both special schools for deaf students and deaf programs in public schools) has increased to more than 230 schools; and (2) quality—the Ministry of Education has adopted modern methods for educating deaf students, such as bilingual and inclusive programs (Aturky, 2005; Aryies, 2006).

Hearing disabilities have a negative influence on language development, which, in turn, affects academic achievement (Zureikat, 2007). Therefore, researchers have studied alternative strategies for educating HIS with the aim of improving the language development of students and, consequently, their academic achievement (Issa, 2011). One of the most important strategies is transferring deaf pupils from special schools for HIS into conventional public schools.

In 1990, Saudi Arabia began to educate deaf pupils in conventional public schools in response to pressure to include individuals with special needs in conventional public schools (Aturky, 2005). The Saudi Ministry of Education generalized the inclusion experience in public schools to increase academic standards for HIS and to minimize the academic and linguistic gap between HIS and their hearing counterparts. These measures are intended to help HIS attain higher levels of education (Al-Mousa, 2008; Al-Omari, 2009).

In Saudi Arabia, deaf inclusion involves educating HIS in separate classrooms attached to a conventional school. HIS share physical education classes, art classes, and intervals between classes with their hearing colleagues. This form of inclusion more closely resembles social inclusion (mainstreaming) than academic inclusion (full inclusion) (Al-Mousa, 2008).

Purpose of Study

Deaf children account for 11.9% of all children with disabilities in conventional schools. Thus, HIS is the third-largest education category in the kingdom (Al-Khashrami, 2004). The purpose of the current study was to examine the effects of inclusion on the language abilities of HIS in Jeddah and to compare the language abilities of these students with the abilities of their peers in special schools for deaf

pupils. Such a comparison poses many challenges. The task of comparing the language development of students is particularly difficult because families employ different communication approaches. In some families, sign language is used if the parents are deaf, whereas other families with hearing parents use a verbal approach. In addition, there are differences in the types and extent of hearing disabilities and in the teaching methods that are used (Marschark, 2001).

The researcher has experience of teaching and studying HIS in conventional schools. Previous studies have examined attitudes toward the general concept of inclusion (Mayer *et al.,* 2002); however, few studies have examined the effects of inclusion on language development. Therefore, the current study is intended to determine the effects of the inclusion process on the language levels of HIS. This research attempts to answer the following questions:

1. Is there a statistically significant difference in teachers' evaluations of the language development of HIS according to the educational setting?
2. Is there a statistically significant difference in parents' evaluations of the language development of HIS according to the educational setting?

The current study aimed to evaluate the effects of inclusion on students' language development based on feedback from parents and teachers. This evaluation was conducted by asking teachers and parents to complete a language development estimation survey. Their responses supported the objective of the study to determine the effectiveness of inclusion and to ensure that efforts to apply this method to deaf education achieve the desired objectives of improving deaf education and the language and social communication skills of HIS.

Literature Review

Inclusion is defined as the process of incorporating a child into a conventional educational environment as he or she becomes sufficiently prepared, both academically and emotionally. Full inclusion represents the participation of all students in a supportive education environment in which appropriate educational services and forms of social support are available (Sasartawi & Abdul Jabbar, 2011). The principles and procedures of full inclusion are culturally, politically, medically, philosophically, and historically associated with the educational practice of inclusion (Hyde *et al.,* 2006). Schools and educational systems that implement inclusion must reflect the values and aims of their societies and must prepare students for their future social and professional lives (Hyde *et al.,* 2006; Hyde & Power, 2006).

There are two types of inclusion: social inclusion (mainstreaming) and educational inclusion (full inclusion). Stinson and Antia (1999) compared the two concepts in terms of three dimensions. For the educational setting dimension, the practical application of full inclusion requires that HIS learn in regular classes, whereas the practical application of mainstreaming requires that HIS learn in conventional schools, but not necessarily in the same classes as hearing students (Hyde & Power, 2004). For the philosophical dimension, full inclusion is more complicated than simply placing HIS in appropriate seats; the classroom must be adjusted to suit their abilities. Mainstreaming seeks to develop students' capacities to enable them to meet the requirements of their grade level. For the pragmatic dimension, full inclusion contributes to the development of the academic and social performance of HIS, whereas mainstreaming contributes only to the development of their social performance. Because of its benefits, the inclusion approach was associated with the Education for All Handicapped Children Act (1975) (Bryant, Smith, & Bryant, 2007). Subsequently, many regulations have required the inclusion of special needs students in public schools. Among such regulations are the Americans with Disabilities Act (ADA) (1990), the Individuals with Disabilities Education Act (IDEA) (1997), the No Child Left Behind (NCLB) Act (2001), and other regulations that seek to improve the education of HIS. Despite these regulations, some studies support inclusion, whereas others object to or are neutral toward inclusion (Al-Muhairi, 2008; Yahya, 2006).

Some researchers believe that the development delays in language exhibited by HIS in comparison with their hearing counterparts are caused by educational segregation. Therefore, many researchers have called for the incorporation of deaf students into conventional schools based on the following justifications:

1. The positive change in social attitudes toward children with hearing disabilities;
2. The emergence of laws and regulations that clearly stipulate the rights of special needs children to receive medical, educational, and social support similar to their non-special needs counterparts in the least restrictive educational environments;
3. The increased number of special needs children in some countries, especially in developing countries;
4. The small number of special education centers, which makes it difficult for students with special needs to access such centers;
5. Special needs students' educational and social support needs (Rousan, 1998).

Majeed (2008) stated that inclusion contributes to deaf students' development of feelings

of belonging in society, encourages an appreciation of diversity, and raises society's awareness of the need to account for individual differences and to respect the rights of minority groups.

The inclusion of deaf and hard-of-hearing students may also provide these students with opportunities to imitate positive behavioral examples (Rousan, 1998) and may increase their prospects of acquiring language experience and knowledge through their interactions with hearing students (Majeed, 2008). In addition, inclusion promotes the development of communication, reading, and arithmetic skills by providing HIS with educational opportunities that are similar to those of their peers and that may positively affect their academic achievement. Through inclusion, children with special needs may reevaluate the balance of justice and equality between students, change their negative attitudes toward themselves, and experience increased self-esteem and motivation, which may encourage them to exert greater effort (e.g., social and academic effort). Additionally, inclusion may provide special needs students with opportunities to ensure healthy physiological development and may help them learn to cooperate with other students (Kurdistani, 2008).

However, some people believe that inclusion harms deaf and hard-of-hearing students because it increases their isolation (Kauffman & Hallahan, 1995) and may cause social problems related to deaf students' cultural identity and social communication skills (Innes, 1994). In this manner, inclusion deprives HIS of individual education (Fuchs & Fuchs, 1994) and exposes HIS to frustration and failure when they are evaluated according to the same criteria as non-disabled students (Zureikat, 2007). Conventional schools may widen the gap between non-disabled students and hard-of-hearing students, which may increase a hearing-impaired child's feelings of insecurity and instability in the school environment (Kurdistani, 2008). Therefore, some researchers believe that inclusion is not feasible in conventional schools (Cohen, 1994) and should not include deaf students. The National Commission for the Deaf has objected to the idea of incorporating deaf students into conventional classrooms because of the lack of translation services and the low possibility of sign language communication in inclusive programs, which could lead to further isolation of deaf students (Kurdistani, 2008).

Furthermore, some studies indicate that inclusion reduces opportunities for good communication, which may lead to frustration among deaf and hard-of-hearing students and may reduce their opportunities for language development and educational improvement (Majeed, 2008). Therefore, Zahir (1990) called for the rejection of inclusion for deaf and hard-of-hearing students because the educational objectives intended for them are unclear and because the programs that are offered to them are inflexible. Parmer and Cawley (1993) explained that the inability of public school teachers to communicate with deaf students may cause these students to miss many of the concepts that are taught. Darwish (1995), Al-Kashrami and Fallata (2004), and Al-Omari (2009) found that the objectives of programs for deaf students are inconsistent with the actual needs of deaf students and do not account for individual differences. Abdul-Maksoud (2004) explained that the textbooks used in public schools do not provide adequate visual stimulation. Ibrahim (2003) found that hearing students are not prepared for the incorporation of deaf schoolmates into their classrooms. Based on research such as this, Cerney (2007) has recommended placing deaf students in special schools rather than incorporating them into regular education, which could cause them significant harm.

Implementing inclusion is a difficult process (Hung & Paul, 2006) that becomes increasingly complicated when students with hearing disabilities must be accommodated (Kristensen *et al.,*2003). The challenges related to inclusion can lead to negative results if the correct inclusion strategies are not applied (Hunt & Marshal, 2002; Idol, 1997, 2006). Hanafi (2008) summarized the requirements of successful inclusion as follows:

1. Create regulations and laws.
2. Equip the school with appropriate resources.
3. Prepare the classroom environment and modify the school system.
4. Recertify public school teachers and special education teachers.
5. Prepare hearing students and their parents for the inclusion of HIS.
6. Modify the public education curriculum to suit the needs and capabilities of HIS.

Teachers have displayed negative attitudes toward the inclusion of HIS because they lack the experience and knowledge necessary to successfully educate such students (Houck, 1992; Lobosco & Newman, 1992; Phillips *et al.,*1990). Some researchers have indicated that this problem is associated with a lack of pre-service qualifications for teachers of deaf students (Monaham *et al.,* 1997).

Wood (2002) correlated class size with public school teachers' negative evaluations of the abilities of HIS. Some teachers believe that deaf and hard-of-hearing students should attend public schools, but these attitudes relate to the administration's support of teachers and to the teachers' previous qualifications (Roll-Pettersson, 2001;Praisner, 2003). However, some teachers have demonstrated concern about the

additional burden of educating HIS in public schools (Knoff, 1985).

Some teachers focus on the academic aspects of inclusion and on what students should learn. In these cases, the evaluation of students is associated with a teacher's ability to teach HIS and with the accommodations provided in conventional classrooms (Wood, 2002; Praisner, 2003).

The attitudes of parents vary widely. The primary factors that influence parents' negative attitudes toward inclusion are a lack of information, difficulty communicating with teachers (Grove & Fisher, 1999), and a lack of response to their children's needs (Gilmore *et al.*, 2003). Some parents assert that they object to inclusion because teachers concentrate on academic skills rather than on the social and communicative skills that their children need (Palmer *et al.*, 2001). Calderon and Low (1998) posited that inclusion is accepted, supported, and successful when parents of deaf and hard-of-hearing children receive support and when students receive individual attention on education and social skills.

Singh and Mishra (2012) studied 12 deaf students in India; six were in an inclusive environment, and six were in a special school for deaf students. The authors found that the academic performance of the students in the special education school were better than the performance of the deaf students in the inclusive schools.

Reed *et al.* (2008) studied a group of 25 public school students to determine the factors that supported or discouraged the academic success of HIS. Interviews were conducted with teachers, principals, and HIS, and factors that supported or discouraged success were analyzed. The researchers found that students' high achievement was associated with the provision of supportive factors, such as high motivation, appropriate school and family expectations, the family's support for a child in completing his or her homework, and good communication between the school and the family. In contrast, poor achievement was related to factors including the presence of other disabilities and poor communication between the school and family. Thus, the academic success of deaf students is associated with the provision of supportive structures rather than with inclusion. In another study, Al-Kashrami and Fallata (2004) examined the appropriateness of programs for deaf girls in intermediate and secondary schools. The study included 328 teachers and school directors. The researchers found that the programs' objectives lacked clarity and comprehensiveness and did not consider the ages of students. Furthermore, the content did not achieve the objectives of the curriculum and did not conform to the schedule established by the school calendar.

Aylor (2003) conducted a study to determine teachers' consideration of the feelings, self-perception, aims, and emotional health of students. He found that considering such factors clearly improved the education of HIS. Elkins *et al.* (2003) studied 354 families in Australia to determine their attitudes toward the inclusion of their deaf children in Queensland schools. The authors reported that attitudes were primarily positive and that negative attitudes were related to a lack of services provided to the children.

In a related study, Avramidis and Norwich (2002) examined the influence of teachers' attitudes on the success of deaf students in inclusive programs. The study found that positive attitudes toward the inclusion of deaf students greatly affected the success of inclusion. Such attitudes were strongly associated with the nature and severity of the disability and the administration's attitudes toward inclusion.

Parmer and Cawley (1993) analyzed the content of a science textbook used to teach hearing-impaired public school students in the intermediate grades. The authors found that 70% of educational activities depended on school textbooks, which resulted in fewer opportunities for hands-on activities. These authors also found that the reading level of the textbook was higher than the reading levels of the students, which reduced students' opportunities to benefit from the content. Finally, the teachers did not use sign language properly, which led to conceptual losses for the deaf students and decreased their interest in the subject matter.

Zahir (1990) examined educational problems in schools for the hearing impaired and their effects on the education process by examining 52 teachers. The results found only vague objectives for the special education program, inflexible inclusive programs, inappropriate textbooks, and inadequate teaching skills.

Method

A descriptive research method was applied to compare the levels of language development among deaf students in Jeddah (Saudi Arabia) secondary schools. The students considered in the study belonged to one of two educational settings: conventional schools or special schools for deaf students. Data were collected from these students' parents and teachers.

Participants

This study was based on data from two groups. The first group consisted of 113 parents of HIS. Of these parents, 60 had a son or daughter at a secondary school for the deaf, and 53 parents had a son or daughter at a regular secondary school. The second group comprised 41 teachers of HIS who taught all education subjects in secondary schools. Twenty of these teachers worked at schools for the deaf, and the other 21 taught HIS at regular schools. The parents and

teachers had known the HIS for at least three years (seventh, eighth, and ninth grades), which enabled the parents and teachers to estimate the language levels of the HIS according to the study tool (see Tables 1, 2, and 3). The parents and teachers were asked to evaluate their beliefs about the language abilities of the HIS and were asked to consider the group of HIS with whom the parents or teachers interacted. The HIS were evaluated by a total communication strategy, and all were diagnosed as severe to profound hearing impairment students. The study did not consider students' reading scores because there were no trusted scores records.

2. Study Instrument

Depending on the literature reviewed, there are many methods for evaluating the language abilities of HIS (e.g., Expressive One-Word Picture Vocabulary Test (EOWPVT), Receptive One-Word Picture Vocabulary Test (ROWPVT)). These tools measure individuals' direct language abilities. However, this study attempts to explore parents' and teachers' beliefs about HIS language according to the HIS educational setting to characterize their perspectives on the abilities of HIS to use language (receptive and expressive), which provides an image of the benefits of educational inclusion and aids in assessing the inclusion process. To evaluate the beliefs of parents and teachers regarding the language development of HIS, a language development estimation survey was designed based on the appropriate language skills listed by special education administrators (Al-Mousa, 1999). This survey consisted of two main parts. The first section was designed to collect demographic data. The second section was a Likert-type scale that consisted of 56 items that collected information pertaining to two dimensions: receptive language (25 items) (e.g., 15: HIS can understand direct oral speech) and expressive language (31 items) (e.g.,18: HIS can use sentences appropriate for his/her age). The participants responded to these items by choosing one of the three available responses (i.e., always, sometimes, or rarely). Parents and teachers were given 20 minutes to respond. The arbitrators' validity was used to determine the instrument's validity coefficient, and the arbitrators' average agreement on the test items was 89%.

Pearson correlation coefficients were used to measure the correlations between performance on the receptive language, expressive language, and total language scores. The results are shown in Table 4. The measurement reliability coefficient was calculated using Cronbach's alpha, which reached .884, indicating a positive correlation.

3. Results

To determine whether the educational setting caused a statistically significant difference in teachers' evaluations of the language development of HIS, the researchers calculated the averages of the teacher evaluations according to the educational setting variable (see Table 5).

As shown in Table 5, the averages of the inclusive teachers' evaluations of the language development of HIS were higher than the average evaluations of teachers in special schools for deaf students. To determine whether the difference between the averages was statistically significant, an analysis of variance (ANOVA) was used (see Table 6).

As shown in Table 6, there was no statistically significant difference in the teachers' evaluation of the expressive language development of HIS at $\alpha < 0$; the statistical value (f) was 3.23. Concerning receptive language and total language, the results indicated a statistically significant difference at $\alpha < .05$; the statistical values (f) were 4.44 and 4.81, respectively. Furthermore, the arithmetic means were higher for the students in inclusive schools than for the students in special schools for the deaf.

To determine whether the educational setting caused a statistically significant difference in parents' evaluations of the language development of HIS, the arithmetic means of the parents' responses were calculated according to the educational setting (see Table 7).

There was a slight difference in the arithmetic means of the parents' evaluation of the language development of HIS (in receptive and expressive language and in the total score). An ANOVA was performed to determine whether the difference was statistically significant (see Table 8).

As Table 8 shows, the statistical values (f) reached 0.00, 0.25, and 0.06. Thus, there were no significant differences in the parents' evaluations at $\alpha < .05$. This result indicates that the parents' evaluations of the deaf and hard-of-hearing students' expressive and receptive language and total language development were nearly the same regardless of educational setting.

Table 1: Distribution of the Study Sample According to Participants and Educational Settings

Evaluator			
		Frequency	Percent
Valid	Teacher	41	26.62
	Parent	113	73.37
	Total	154	100
Educational setting			
		Frequency	Percent
Valid	School for the deaf	80	51.94
	Inclusive school	74	48.05
	Total	154	100

Table 2: Distribution of Teachers According to Educational Settings

		Frequency	Percent
Valid	School for the deaf	20	48.8
	Inclusion	21	51.2
	Total	41	100

Table 3: Distribution of Parents According to Educational Settings

		Frequency	Percent	Valid percent	Cumulative percent
Valid	School for the deaf	60	53.1	53.1	53.1
	Inclusive school	53	46.9	46.9	100
	Total	113	100	100	

Table 4: Pearson's Correlation Coefficients Between Performance on Measured Dimensions and Total Scores

		Receptive language	Expressive language	Total language
Receptive language	Pearson's correlation	1	0.821(**)	0.966(**)
	Sig. (2-tailed)		0	0
	N	154	154	154
Expressive language	Pearson's correlation	0.821(**)	1	0.941(**)
	Sig. (2-tailed)	0		0
	N	154	154	154
Total language	Pearson's correlation	0.966(**)	0.941(**)	1
	Sig. (2-tailed)	0	0	
	N	154	154	154

** Significant at the 0.01 level

Table 5: Average Teachers' Evaluations of the Language Development of HIS According to the Educational Setting Variable

Teacher educational setting		Total language	Receptive language	Expressive language
School for the deaf	Mean	95.75	44.8	50.95
	N	20	20	20
	Std. deviation	18.13	8.319	11.34
Inclusive school	Mean	108.14	50.66	57.47
	N	21	21	21
	Std. deviation	19.45	8.77	11.86
Total	Mean	102.09	47.80	54.29
	N	41	41	41
	Std. deviation	19.61	8.95	11.93

Table 6*: ANOVA* of the Differences Between the Average Teachers' Evaluations of the Language Development of Deaf and Hard-of-Hearing Students

ANOVA						
		Sum of squares	Df	Mean square	*F*	Sig.
Expressive language	Between groups	436.29	1	436.29	3.23	.07
	Within groups	5262.18	39	134.92		
	Total	5698.48	40			
Receptive language	Between groups	352.57	1	352.57	4.81	.03
	Within groups	2855.86	39	73.22		
	Total	3208.43	40			
Total score	Between groups	1573.28	1	1573.28	4.44	.04
	Within groups	13816.32	39	354.26		
	Total	15389.61	40			

Table 7: Arithmetic Means of Parents' Evaluations of the Language Development of HIS According to Educational Setting

Report				
Parent/education setting		Expressive language score	Receptive language score	Total language
School for the deaf	Mean	63.15	54.25	117.4
	N	60	60	60
	Std. deviation	15.85	11.39	26.07
Inclusive school	Mean	63.32	55.30	118.62
	N	53	53	53
	Std. deviation	12.94	10.84	22.64
Total	Mean	63.23	54.74	117.97
	N	113	113	113
	Std. deviation	14.49	11.10	24.42

Table 8: *ANOVA* of the Differences Between the Arithmetic Means of Parents' Evaluations of the Language Development of HIS

ANOVA						
		Sum of squares	Df	Mean square	*F*	Sig.
Expressive language score	Between groups	0.820529	1	0.82	0.00	.95
	Within groups	23539.2	111	212.06		
	Total	23540.02	112			
Receptive language score	Between groups	31.13771	1	31.13	0.25	.61
	Within groups	13784.42	111	124.18		
	Total	13815.56	112			
Total score	Between groups	42.06752	1	42.06	0.06	.79
	Within groups	66786.85	111	601.68		
	Total	66828.92	112			

4. Discussion

The results of the answer to the first question showed that there was no statistically significant difference in the teachers' evaluations of the expressive language development of HIS at $\alpha < .05$. This result may have been due to the lack of flexibility in the inclusive process. HIS are not given the opportunity to develop their expressive capabilities, the educational objectives for deaf students are unclear, and teachers do not have sufficient time to concentrate on expressive language and to offer additional activities and programs that would increase the expressive capabilities of deaf and hard-of-hearing students. This interpretation is consistent with the findings of Zahir (1990), Parmer and Cawley (1993), Roll-Pettersson (2001), Praisner (2003), and Al-Kashrami and Fallata (2004).

There was a statistically significant difference in the receptive language and total scores at $p < 0.05$ in favor of the students in inclusive schools. This result can be explained by the presence of hearing students who explain the teacher's requirements to their deaf and hard-of-hearing peers. This form of positive social communication and interaction in inclusion is in agreement with the report by Kurdistani (2008). Good communication between HIS and their hearing colleagues can lead to increased understanding of classroom instructions for deaf students. The results of the current study are consistent with the results obtained by Elkins et al. (2003), who found that inclusion depends on a high level of care, which has a positive effect on student performance. The current results may be associated with the conclusion of Zureikat (2007) that regular education teachers are inadequately prepared to teach deaf students and thus lack the ability to evaluate the language levels of these students.

The results pertaining to the second question in this study indicated no statistically significant differences in the evaluation of expressive and receptive language development scores or in the total scores. These results may have occurred because, according to the parents, the inclusion approaches did not provide essential accommodations for their children. Thus, a number of parents opposed the inclusion of their children, perhaps because of the belief that their children had been deprived of individualized education, as suggested by Fuchs and Fuchs (1994). Inclusion has not fulfilled the needs of deaf students in this regard, in agreement with the findings of Gilmore *et al.* (2003). Parents' negative evaluations of inclusion may result from their lack of preparation for inclusive programs, which supports the result of Cerney (2007). Consistent with Grove and Fisher (1999), these attitudes may also be the result of a lack of communication and a concomitant lack of

information. In conclusion, additional studies should be conducted on inclusion in Saudi Arabia, such as examinations of the effects of inclusion on the academic achievement of HIS in Saudi Arabia, teachers' applications of the teaching methods required in inclusive situations, and the attitudes of HIS toward inclusion.

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