

# **THE ACADEMIC AND SOCIAL INCLUSION OF DEAF AND HARD-OF-HEARING STUDENTS IN MAINSTREAM SECONDARY SCHOOLS IN GREECE**

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## **ABSTRACT**

The purpose of this study was to examine the academic and social inclusion of deaf and hard-of-hearing students (D/HH) in secondary mainstream schools and the main factors that influence this inclusion. Data were collected through a questionnaire from 57 high school teachers of different specialties (math, language, physics etc.) who had at least one deaf or hard-of-hearing student in their class. The teachers teach in mainstream schools throughout Greece. Each of them completed a questionnaire for each deaf or hard-of-hearing student they have taught in their school.

The result revealed that full academic, as well as social inclusion, was not achieved for the D/HH students in secondary mainstream schools. However, some factors, such as personal student characteristics (i.e. degree of hearing loss, onset of deafness) seem to affect the degree of both academic and social inclusion and determine success or failure of it. Other factors, like the amount of time students spend in regular classes and the type of support they receive are related to their successful inclusion. Furthermore, academic inclusion is an important factor that determines social inclusion and vice versa. The results of this study have direct implications for designing and implementing appropriate programs for the education of D/HH students in secondary schools.

## **INTRODUCTION**

This study aims to investigate the academic and social inclusion of D/HH students in secondary mainstream schools based on their teachers' reports. More specifically, the following questions are addressed:

What is the level of academic and social inclusion of deaf students in secondary mainstream schools? What are the factors affecting them?

What is the correlation between the characteristics and structure of the educational framework for deaf students in mainstream secondary school education and their academic and social inclusion? Furthermore what is the relation between academic and social inclusion for said students?

Recently Greece has witnessed a great interest on deaf children's inclusion and a marked rise in their enrolment in mainstream schools. Despite these tendencies research on the subject remained limited compared to international standards. Such a study is essential in Greece because of the existence of different circumstances and data in different countries. We decided to focus on secondary mainstream education because of the complete lack of evidence on the effectiveness of inclusion of deaf students at this school level.

The level of academic inclusion of D/HH students attending mainstream schools has been approached through two main factors in relevant bibliography: academic performance and classroom participation. Academic performance can be established through the classroom and normative academic status, whereas classroom participation refers to the D/HH students' ability to participate in classroom activities and discussions (Stinson & Antia, 1999).

Research has shown that D/HH students' academic performance is lower than that of their hearing classmates both in comparison with the academic level of the classroom (Antia, Kreimeyer, & Reed, 2010; Most, 2006) and the normative one. (Holt, 1994; Stinson & Antia, 1999) The low level of academic inclusion was also confirmed by the class participation. (Stinson et. al, 1996)

Within the relevant literature one can discern four key factors that determine D/HH children's level of academic inclusion: personal characteristics (degree and age of hearing loss, etc) (Holt, 1994, Lampropoulou, 1999, 2005, Powers, 1999), environmental and family factors (Lampropoulou, 1999, Powers, 1999), the process of teaching (duration, quality of teaching, special provisions, type of inclusion etc) (Lampropoulou, 1999) and teachers' attitudes and expectations. (Kourbetis et. al, 2005, Lampropoulou, 1999)

When it comes to social inclusion it is possible to verify whether D/HH students participate in social activities or they develop close and emotionally safe relationships with their classmates. (Hadjikakou, Petridou, & Stylianou, 2008)

The majority of studies suggest that social inclusion in mainstream schools is not successful and difficulties in communication prevent school social activities, resulting to isolation and feelings of loneliness. (Angelides & Aravi, 2007, Scheetz, 1993, Stinson & Whitmire, 1991) Deaf and hard-of-hearing students rarely interact and form friendships with hearing classmates (Antia, et. al, 2010) and are not considered as potential friends of the latter or accepted by them, even after the completion of intervention programmes. (Antia & Kreimeyer, 1996) Studies have demonstrated that factors such as the amount of time in a general-education class, as well as the academic inclusion, play an important role in social inclusion. (Stinson & Whitmire, 1991, Stinson, Whitmire, & Kluwin, 1996) On the other hand, some studies observed that under an appropriate supportive environment, D/HH students actually interact and form positive social relationships with hearing classmates. (Leigh, 1999, Nikolaraizi & Hadjidakou, 2006)

## **MATERIALS AND METHODS**

In this study 57 secondary school teachers from all over Greece participated. They filled individual questionnaires that were delivered either through post or electronically. Every teacher filled a questionnaire for each of their D/HH students. The total number of students was 30. More than one teacher could fill questionnaires for the same student. As a result 117 questionnaires were collected in total.

The design of the questionnaire was based on the literature and the relevant research tool developed by Hadjidakou, Petridou and Stylianou (2008). Said tool was kindly offered to us and it was adjusted to the needs of the present study. The questionnaire included mostly closed-ended questions, with a few open-ended

question either of one or of more responses. The questions were classified in regular order and scaled using Likert scale from 1 to 6.

## **ANALYSIS-RESULTS**

All data were coded and subjected to statistical analysis using the SPSS system. Academic and social criteria are presented as percentages in tables and the correlations between the most important opinions about academic social inclusion have been evaluated. At the final stage, we completed the appropriate correlations of the most important academic and social criteria with the demographic characteristics of the D/HH students and correlations between those criteria. For every student, we computed the median of each question of academic and social criteria and calculated the price of statistical test  $\chi^2$ , as well as the corresponding p-value.

We observed difficulty in communication of the D/HH student with both their classmates and their teachers. As a result, the student's participation in the educational process and the academic inclusion are hindered. Regarding the academic level of D/HH students, it emerged that academic performance is by 39.3% dissimilar to that expected for their peers. 46.2% of the teachers believe that D/HH students' comfort level is low and they do not participate comfortably in the mainstream class. Moreover 31.6% of teachers argue that D/HH students are not at the same academic level as their hearing classmates.

Teachers agreed that hearing classmates (52.1%) as well as parents (41%) and school staff (59%) have a positive attitude towards D/HH students. Additionally, 28.2% of deaf students do not have hearing friends and 27.4% do not make relations with the latter outside school, even though they are acceptable at a rate of 58.1% by their hearing classmates. Also, 25.6% of D/HH students interact only with D/HH people of their age. Finally, 31.6% of D/HH students do not participate at the school's activities.

In TABLE 1, active lesson participation (A5) is directly correlated to whether the deaf student understands what their fellow students contribute (A2) and whether the former feels that their teacher understands them (A7).

Table 1: *Academic Inclusion - Communication Skills*

	A2		A7	
	$r_s$	P – value	$r_s$	P – value
A5	0,418	0	0,440	0
A10	-0,084	0,369	0,162	0,080
A12	-0,033	0,721	0,120	0,197

TABLE 2 demonstrates a correlation between hearing classmates' difficulty in understanding the D/HH students (A1) and whether the latter has hearing friends (K5). Also, if academic performance of a D/HH student corresponds to their age (A10), is age directly related to having hearing friends (K5).

Table 2: *Social Inclusion - Communication Skills & Social Inclusion – Academic Inclusion*

	K5	
	r <sub>s</sub>	P – value
A1	-0,391	0
A5	0,044	0,639
A10	0,258	0,005
A12	0,160	0,084

Middle school students display healthier academic inclusion than senior ones. 71.4% of the former participate actively in class and express their views (A5). Additionally, the latter's progress (56.3%), do not correspond to their age (A10) whereas middle school students (42.9%) respond better to the material of their level (A12).

All cases agree that HH students have better academic inclusion than deaf. A high percentage (75%) of HH students, when compared to deaf students, actively participates in class and express their views (A5). Most HH students respond to the material of their level (A12) better than deaf students (42.9%). Finally, social inclusion comes easier for HH students, as 87.5% were accepted by their hearing classmates (K4).

Deaf children by birth, or profound deaf, have lower academic and social inclusion than those who lost their hearing at, or after, early childhood. The majority of the later (80%) participated actively in class and expressed their views (A5). 90% of them become accepted by their hearing classmates (K4) and 70% make friends with hearing students, while 50% of those who are deaf since birth do not (K5).

It was observed that D/HH students that attend mainstream classes with parallel support display a satisfactory academic inclusion as 66.7% of them comprehend what teachers say, they progress proportionally to their age, and respond well to the material of their level (A12). This is not the case for those D/HH students who are educated exclusively in a special class. We observed that D/HH students that attend self-contained classes do not actively participate in school activities (K12) as those who attend parallel support classes.

Table 3: *Correlation with Academic Criteria*

	A5		A8		A10		A12	
	χ <sup>2</sup>	p – value						
<b>Gender</b>	3,367	0,338	0,201	0,904	3,358	0,5	4,219	0,377
<b>Grade</b>	8,978	0,03	10,915	0,004	11,489	0,022	9,018	0,061*
<b>D/HH</b>	9,954	0,019	3,884	0,143	10,485	0,033	9,688	0,046
<b>Degree of Hearing loss</b>	6,921	0,074*	2,625	0,269	7,446	0,114	4,813	0,307
<b>Type of Education</b>	8,566	0,199	11,063	0,026	24,955	0,002	20,247	0,009

Table 3: Correlation Social Criteria

	K4		K5		K12	
	$\chi^2$	p-value	$\chi^2$	p-value	$\chi^2$	p-value
<b>Gender</b>	2,436	0,487	2,697	0,610	1,559	0,816
<b>Grade</b>	1,905	0,592	3,701	0,448	2,564	0,633
<b>D/HH</b>	10,383	<b>0,016</b>	6,502	0,165	6,237	0,182
<b>Degree of Hearing loss</b>	8,757	<b>0,033</b>	9,409	<b>0,052*</b>	13,061	<b>0,011</b>
<b>Type of Education</b>	21,853	<b>0,001</b>	12,852	0,117	20,296	<b>0,009</b>

## **DISCUSSION**

The data of this study suggest that social inclusion of D/HH students in mainstream secondary schools is difficult and generally unsuccessful. Furthermore, it is possible that inclusion might actually result in social isolation within the school community. The findings of this research agree with similar results of other studies (Andrews et. al, 2004; Hyde & Power, 2004).

Data analysis demonstrates that academic inclusion of D/HH students remains at low levels. This is possibly attributable to the form and the structure of inclusion in secondary education mainstream schools as it has been already established in research (Long, Stinson, & Braeges, 1991, Most, 2006, Stinson et. al, 1996, Stinson & Antia, 1999).

Individual characteristics of D/HH students and the framework of inclusion directly influence academic and social inclusion. The current study shows, as in similar research (Antia, Kreimeyer, & Reed, 2010), the academic level “gap” between D/HH and hearing students grows with time as the students move up in grades. Additionally, and similarly to other studies, (Davis et al, 1981, as cited by Stinson & Antia, 1999, Holt, 1994, Lampropoulou, 1999) the degree of hearing loss directly affects academic success and to a lesser degree social inclusion. However, Powers (2003) came to the opposite conclusion. This study, similar to earlier studies (Foster et. al, 2003, Hyde & Power, 2004, Lampropoulou, 1999) concludes that the degree of hearing loss affects the level of social acceptance even though it does not determine social inclusion. The lack of effective communication between individuals with hearing loss and their hearing classmates is detrimental to the substantial interaction between them in mainstream schools. The factor of age at the time of hearing loss also affects the development of speech and the communication skills, and indirectly determines academic and social inclusion, as shown in other studies (Foster et. al, 2003, Hyde & Power, 2004, Lampropoulou, 1999, Scheetz, 1993).

It seems that academic inclusion of D/HH students is better achieved under the competitive environment that is created in mainstream classes. Furthermore,

academic inclusion is easier achieved through a specialized teacher providing parallel support. The aforementioned results are in agreement with those of similar studies, as Holt (1994). Concerning social inclusion, the results of other studies are confirmed (Stinson & Whitmire, 1991). Students who attend mainstream, not only self-contained classes, have an advantage in their acceptance by their hearing classmates and in their participation in school activities. However, in terms of developing friendships with hearing students no positive outcome has been observed from other research (Foster et. al, 2003, Hyde & Power, 2004).

The data of this study reveals that lack of communication skills, leading to low academic performance. However, the development of such skills does not necessarily secure the improvement of academic performance. The present study in the relation between communication skills and academic inclusion agree with the results of similar studies (Antia et. al, 2010, Stinson, et. al, 1996). Regarding the correlation of communication and social inclusion, it became apparent that communication skills determine to an important degree social inclusion, as concluded by Angelides & Aravi (2007), Scheetz (1993) and Stinson, Whitmire & Kluwin (1996).

In general, as noted by other studies (Hadjikakou, Petridou, & Stylianou, 2008, Stinson, Whitmire, & Kluwin, 1996), this study concludes that the successful social inclusion of D/HH students that attend mainstream schools is significantly reinforcing academic inclusion and vice versa.

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