FACILITATING DEAF STUDENTS ACCESS TO ACADEMIC SERVICES

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Over the last twenty years, a significant increase of deaf students (DS) applying for higher education has been noted. The purpose of this research was to record the needs of deaf university students in Greece for special adjustments and services, and to study the relevant provisions offered by International, European and Greek academic institutions for these students. Data was obtained through: i) the study of 80 international and 58 European universities interlinked with the European Agency for Special Needs Education documents, ii) 323 questionnaires completed by the Greek Universities and Technological Institutions and iii) interviewing 30 deaf college students. Qualitative and quantitative methods were used to analyze the data. The results indicated that to achieve full participation of the deaf students in lectures requires special academic facilities and adaptations such as: sign language interpreters, tutoring, and training, especially in ICT, adapted teaching techniques, fully qualified and trained staff, adapted course material, evaluation alternatives, English language teaching, mentoring, fieldwork, distance learning courses and liaison with international studies. The findings were used to develop a proposal of adjustments that could be adopted by academic institutions in order to meet the deaf students' academic needs. The suggested provisions will be based on cultural community characteristics, available resources, educational priorities and communication between the academic and deaf community.

INTRODUCTION

The attendance of students with disabilities (SENS) at higher education Institutions has increased over the past twenty years (HESA, 2002; 2010, 2012/2013[1] PEQIS 2002). This is due to many reasons, the change of societal attitudes, improvements in educational services and opportunities, and provision of services in higher education, to name a few. A large number of reports in the literature refer to the adjustments "adapted infrastructures and services" that are required to ensure deaf students' full participation in academic life. Lang (2002) observed increased enrollment rates of Deaf Students (DS) in the United States (US) higher education. Quite on the contrary, Brelje (1999) found significantly low rates of attendance in countries such as Egypt, Lebanon, El Salvador, India, Japan, China, Puerto Rico, Saudi Arabia and Thailand. These low rates were attributed to the common belief in such countries that "deaf people are not able to successfully complete their studies in higher education."

A report published by the US National Centre for Education Statistics in 1994 (PEQIS 94394, 1994) estimates that the number of students with

[1] First year UK domiciled HE students by level of study, sex, mode of study and disability 2012/13, from: https://www.hesa.ac.uk/stats

disabilities (DS) in tertiary education is 258.197, but only a mere 8% identify themselves as a person with hearing loss. According to this survey, the Deaf and Hard-of-Hearing Students (HOHS) chose the postsecondary institution after they had asked to be informed about: 1. the existence of sound amplification devices (66%), 2. federal legislation (61%), 3. the availability of trained people in sign language and oral interpretation (21 %), (Parasnis, Samar, & Fischer, 2005). Additionally 23% of the prospective students requested to evaluate the quality of services provided.

Foster, Long, and Snell (1999) observed low participation and academic performance levels in students that are deaf or hard-of-hearing which was attributed to the following: 1. shortcomings in the preparation for the attendance at higher education, 2. lack of motivation, 3. excessive dependency on support systems, 4. deaf students inability to receive comprehensive information due to the lack of interpreters, note-takers and indirect support services for learning and communication, 5. poor levels of English language proficiency, and 6. beliefs that integration is not politically correct and practically feasible in the daily university life. For more effective information the DS suggested: 1. well classified newsletters (45%), 2. research technical assistance centers (28%), 3. information-support disability offices (21%), and 4. e- announcements' tables (6%). In the same report, and in agreement with other studies, a considerable percentage of DS and HOHS indicated that universities provided: 1. note-takers 75%, 2. interpreters 67%, (Seal, 1998; Winston, 1995), 3. tutors 65%, and 4. assistive hearing devices 33%. According to Hadjikakou (2000) the needs of DS in regards to the infrastructure are summarized as follows: 1. assistive technology (FM Units Technical resources), 2. sound amplification devices, 3. Radio frequency modulation, 5. PCs for continued printing of oral speech, 5. real time captioning of lectures on the screen (Real Time Graphic Display, RTGD).

For consideration, and equally important, the following added benefits would also ensure DS success: 1. teaching and evaluation procedures adapted to Deaf Students (Dalheim, 1994; Foster, Long, Marron, Rasmussen & Sour 2005), 2. counseling, advocacy and mentoring, 3. registration assistance, 4. spatial arrangements for example, where the hearing-impaired students will sit, 5. lectures taping, and 6. effective communication with the teachers, (Quinsland & Long, 1989; Cremmer, 1991; Cawthon, Nichols & Collier, 2009).

In Greece, according to a survey conducted by Sarinopoulou (2003) in which 45 deaf students from the University of Athens, and the Technological Institute of Athens participated, the following priority needs were identified: Greek Sign Language interpretation provisions, timely provision of books and notes, establishment of information and support centers. In another study (Gkouvatzi, 2011), DS also stated that they were not given equal opportunities with their hearing peers within any level of education, for example special education teachers, adapted textbooks, and professional orientation.

In summary, according to the literature, the main problems faced by DS can be summarized as following: 1. lack of information, communication problems with professors, administrative staff, and peer students during lectures and exams (Lang, Dowaliby & Anderson, 1994), 2. lack of assistive technology and appropriate services for communication (interpreters, suitable

phone equipment (FAX) and organized e-network for communication and distance learning courses (Richardson, Long & Foster, 2004; Tullent-Runnels, Thoms, Lan, Cooper, Ahern & Shaw, 2006; Slike, Berman, Kline, Rebilas & Bosch, 2008), 2.serious difficulties in understanding the spoken and written Greek language and lack of knowledge of English which was attributed to the low level of basic education that the deaf students have received as compared to that of the hearing students, 4. problems caused by the attitude lack of awareness and training of academic and administrative staff regarding deafness and DS, and 5. small participation, i.e., 10% participation in university social life, however most deaf students were active participants of the Deaf Community.

As a result of the many obstacles faced by a deaf student in higher education, a high rate of DS' dropping out has been recorded in several studies. Stinson and Walter (1997) as well as Walter, Foster and Elliot (1987) documented high rates of dropout, with only 25% of students completing their studies. Stinson and Walter (1997) point out the correlation between such high rates and the satisfaction of DS as regards to teaching and academic achievement and social satisfaction by persistence or withdrawal of studies. Lang (2002) attributes this dropout to the lack of development of personal and social skills of DS in previous educational levels. Walter, Clarcq and Thompson (2002), found that DS who never complete their studies have far fewer social, psychological and economic benefits than those who do not even pursue a higher education. On the contrary, the benefits of obtaining a University qualification are far more important for a deaf person than a hearing one.

The *aim* of the present study was to document the needs of Deaf and Hard-of-Hearing university students in Greece for special adjustments and services, and to study them in relation to relevant provisions that should be offered by International, European and Greek academic institutions to ensure deaf and hard-of-hearing students have full access to academic services.

Method

A) *Assessment of needs of deaf and hard-of-hearing students in higher education:* In order to assess the needs for special provisions and support for Deaf and Hard of Hearing students in higher education, data was collected through interviewing 30 deaf or hard-of-hearing students from seven Greek Universities and four Technological Educational Institutions, throughout Greece. Ages ranged from 22-32 years, and at the time of interviewing, they were at least in their 3rd semester of study. Semi structured interviews were used with open questions (Willig, 2001). The flexibility would allow a systematic description, prediction and interpretation of statements that were formulated by Deaf Students (Cohen & Manion, 1997). The content of the interview was formed based on a synthesis of information drawn from the literature research, as well as, from pilot interviews conducted with two deaf university alumni that are now employees. The questions were related to the provision, availability and the need for specific infrastructure and services, also in addition to specialized adjustments that would facilitate DS' participation in the university social life, sports and recreation.

B) Studying the provisions in Greek higher Institutions: Questionnaires were used to collect data from 323 departments and faculties of Greek Universities and Technological Institutes regarding the support services they provide to DS. The questionnaires were contracted from data collected through the literature research that described the institutional frameworks, the legal provisions and the service models for DS of 80 International and 58 European higher education institutions interlinked with the European Agency for Special Needs Education.

Qualitative and quantitative methods were used to analyze the data. The qualitative data analysis method combining the social environmental elements with the findings recorded by needs assessment survey was used. In particular, the Grounded Theory [GD] which is widely accepted in social surveys was used, because it is a reliable diagnostic tool when researchers are confronted with material coming from open-ended questions (Corbin & Strauss, 1990; Mostyn, 1985). For the processing of quantitative data and needs assessment, an EXCEL database was designed.

Results

After the data processing of the questionnaires and indexing of the interviews the provisions and needs were classified as follows:

Table 1: *Categories of adjustments and provisions relating to the areas of infrastructure and services*

INFRASTUCTURES	SERVICES
*e-accessibility & assistive technology	*Academic
*Well-designed web pages	*Administrative
	*Welfare, social policy & healthcare
	*Culture
	*Sport

Questionnaires were sent to 323 secretariats at the faculties and departments of all Greek Universities (GU) and Technical Institutes (GTI), but only 25 questionnaires were returned. The special provisions extracted are summarized in tables 2 and 3. More specifically, 14 out of the 25 tertiary education faculties and departments talked about provisions for ensuring electronic communication/accessibility, 8 referred to the facilitation of access to e-libraries, 4 regarding flashing-light fire alarms and only 1 mentioned special voice recording devices for taping the lectures.

Table 2: *Provisions for adjustments in infrastructure*

	GU	GTI[2]
E-accessibility/communication	10	4
Facilities for access to e-collections/e-library	6	2
Flashing-light fire alarms	2	2

[2] In columns 3 and 4 in tables 2 and 3, we present the results as they were extracted from the completed questionnaires and that concern provisions for adjustments in the infrastructure and academic services in the Greek faculties

Voice recording devices	-	1
Specialized PCs	-	-
Visual communication net for DS	-	-

Regarding the provisions offered in the field of academic services: 10 faculties offer interpretation services for the Greek Sign Language (GSL); 8 alternative evaluation procedures; 8 lending libraries network; 7 online communication system with the secretary for DS affairs; 7 adapted study material that includes specialized content and teaching methods; 5 offer information and support for participation in the Erasmus projects; 5 free of charge copy services; 3 special tutoring support; and 2 GTI training for ICT familiarization. There are however, no provisions concerning distance learning, note taking or state-of-the-art teaching and study facilities in general (table 3).

Table 3 : *Provisions for adjustments in special academic services*

Academic accommodations	GU	GTI
Sign language interpreters	7	3
Alternative evaluation procedures	5	3
Lending libraries network	4	4
Online communication system with a secretary for DS affairs	4	3
Adapted study material (content-methodology)	1	6
Information and support for participation in Erasmus projects	2	3
Copy services	2	3
Tutoring	1	2
Training in the use of assistive technology	-	2
Distance learning provisions	-	-
Note takers	-	-
State-of-the-art teaching and study facilities	-	-

The indexing of the interviews revealed provisions and needs which were classified as follows:

A) Infrastructures

In the category of infrastructure the need for e-communication with faculty was expressed by 19 out of 30 deaf students, and with the administrative staff was 13 out of 30 i.e. "*I believe that it would be very helpful if I could communicate with the professors and secretariat by mail, (HI 11[3])".* Also, 4 out of 30 students state that they do not understand the content of the pages due to their complexity, "*We need better designed pages; these are quite difficult especially when what I'm looking for is in English, (HI 3)".*

In addition, there was no mention concerning assistive technology as it arose from the literature study for Real Time Captioning (RTC), hearings aids, e-library, etc.

[3] HI11:Indicates deaf students identity

B) *Services*

The category of services revealed five sub-categories and these were: 1. academic, 2. administrative, 3. welfare, social policy and healthcare, 4. Cultural, and 5. sport services (table 1). In particular, the subcategory of academic services produced seven more sub-categories: learning and e-learning, evaluation, academic teachers, tutoring, fieldwork, distance learning and international studies/European Projects.

Table 4: *Needs Categories and sub-categories for deaf students' academic services*

	Category	Subcategories		No
SERVICES	**ACADEMIC SERVICES**	**Learning & e-learning**	*Greek Sign Language interpreters	30
			*Special provisions	25
			*English language courses	17
			*Academic books & reading material (timely)	9
			*Special programs, methods & practices	8
			*taping	3
			*note takers	2
		Evaluation	*Alternative process evaluation	18
			*Equal evaluation	6
			*E-evaluation	4
		Academic teachers	*Effectiveness	27
			*Support – counseling - guidance	16
			*Communication	15
			*Updating - awareness	5
		Tutoring	*Adapted tutoring	22
			*Familiarization with the use of ICTs & e-information	4
			*Familiarization with the use of AT	3
		Fieldwork	*Fieldwork connected with subject matter	16
			*Organized fieldwork	14
		Distance Learning		3
		International Studies European Projects	* Participation in European mobility programs for eg ERASMUS	18
			* Well-organized information and exchange programs	12
			*Deaf students' attendance at international universities	2

Concerning the subcategory of *learning and e-learning* all interviewed DS (30 of the 30) strongly agree that the presence of an interpreter during the lecture is imperative, as is in the evaluation and communication with secretariats (table 4). Seventeen out of the 30 deaf students requested English language courses, 9 would like a timely provision of academic books, reading material and notes, and 8 felt special programs, methods and practices would be beneficial. The presence of note-takers and lecture recording devices (HI 2; 17; 21), stating: *"I prefer to have the lecture recorded as this would greatly facilitate me during the exam period together with the*

interpreter's special support", and *"I sometimes don't attend the lectures so I 'd like to be able to have them taped".*

The *evaluation* alternatives greatly concern the DS as 18 out of 30 request alternative evaluation procedures as scientific work, multiple choice, or oral examination with the presence of an interpreter (table 4). However, 6 of them proposed not preferential but rather equal treatment, while 4 proposed e-evaluation "*I would like to have the option to choose the evaluation procedure that best suits me".*

In addition, 27 out of 30 DS talked about *teaching staff effectiveness*. From the 30 interviewed 16 requested special support such as counseling and guidance, *"The teachers did not show any interest ....They teach and then leave immediately….. maybe they don't know that there are deaf people among the students (HI 3;8;9;23;28;29;…)".* Fifteen students advocate for effective communication and cooperation with the professors, and 5 mentioned a need for the teaching staff to attend information and awareness courses. Fifteen out of 30 DS requested collaboration between students, professors and interpreters in order to develop a Greek Sign Language dictionary concerning the specific terminology of each scientific field, *"It was very difficult to understand the content of the course although I had an interpreter.... (HI 3)", "I began to understand and participate more often in the lectures after we had started producing our GSL dictionary at the department of physiotherapy…. There were many difficulties … I wanted to give up... (HI 4)".*

Out of the 30 students 22 believe that they should be given free-of-charge *tutorial lessons* to assist with academic difficulties and the English language, while 4 claim that they need to familiarize themselves with ICT, *"I need help to overcome the difficulties in understanding the Greek language, I need someone to explain to me the meaning of words and make corrections to my texts (HI, 3; 18; 22; 29…)", "If I had been taught English and participated in ICT courses, it would have been much easier for me to have access e-information (HI 2; 11; 21…)".*

Regarding the fifth sub category of *fieldwork***,** 16 out of 30 deaf students believe the fieldwork must be tied with the subject matter and 14 DS the need for the fieldwork to be well-organized, "*…they send us for fieldwork anywhere without any lesson plan and leave us to our own devices… (HI 16), "…the colleagues have no idea what to do….., what it means to be deaf….., how to communicate with us… (HI 6; 19; 20; 25…..)".* Deaf students are favor of *distance learning*, "*I know that in the US DS participate in Distance Learning courses…. That would be even more helpful with an interpreter along for guidance since it would give more time for preparation… (HI 19; 22)".*

Eighteen of the 30 interviewed deaf students expressed interest in *International Studies*, especially in ERASMUS programs, 12 asked for well-organized exchange programs, *"I'd love to travel and attend foreign universities… (HI 1;3;6;11.), "I have heard that in the US Deaf Students receive support through grants and counseling **...** (HI 23; 24; 26….).* Nevertheless, only two students expressed a wish to study abroad, "*I'd love to study abroad but it's unlikely since I don't know English, (HI 15), " in both*

elementary and high school we received lower level education compared to our hearing classmates…No provisions were made for us…. (HI 3)".

Discussion

The purpose of this study was to assess and document the needs (in Greece) for special adjustments and services and study them in relation to relevant provisions that are offered by International, European and Greek academic institutions for Deaf and Hard-of-Hearing students in higher education .

Taking into consideration the needs for adjustments as expressed by Deaf Students and the quantitative data extracted from the completed questionnaires, though these are small in number (30 interviewed), we have found a significant deficit in the current support services for DS in Greek Universities and Technological Institutes (table 2, 3, 4).

The findings are partly consistent with previous findings (Kersting, 1999; Cawthon, Nichols, & Collier, 2009; Lang, 2002) regarding the factors that encourage or discourage the integration of DS and HOH students in academic life. Everyone agrees that the interpreter's presence is necessary for their participation in the lectures (Cawthon, et al, 2009), as well as for their communication with the academic and administrative staff. A claim that the absence of an interpreter is one of the main reasons (19 out of 30) why their participation is gradually restricted and why they often drop out of their studies (9 of the 30), a finding that is in accordance with Foster et al. (1999), PEQIS (1994), and Parasnis et al. (2005) research results. What is surprising is that very few consider the presence of note takers necessary (2 of the 30), a finding which contradicts the research (Peqis, 1994; Winston, 1994; Seal, 1999). Three out of 30 DS suggested lecture taping in order to take full advantage of the recorded material during the exam period, with an interpreter (Gkouvatzi, 2011).

Moreover, the students expressed frustration regarding the lack of effective communication with their professors. Comments indicated relations with the academic and administrative staff are poor due to communication barriers (Kersting, 1999) and due to the lack of awareness and sensitivity on the part of the academic community. The majority of Deaf Students feel forgotten and left out, a finding that is in agreement with Quinsland et al. (1989) research results. These results have revealed that professors think that the adjustments are a waste of time since the participation of DS is gradually declining.

Two other important aspects of class participation that emerged from this study are the importance that DS place on, 1. having adapted academic books, comprehensive reading material fact which mentioned from 14 of the 30, and on 2. receiving learning material (books and notes) and syllabi on time (8 of the 30). Aspects of international research doesn't focus on tutoring and other services for students with different national or linguistic background (Drezner, 2008).

One of the interesting and new findings from this study is the believe that the high dropout level and limited access to teaching content are due to the low quality education received in previous education levels (Crassas, 2006; Lang, 2002; Foster, 1999). The deaf students interviewed noted that the lack of knowledge of English (17of the 30) and the lack of familiarization with

internet navigation (22 out of 30) is a direct result of the lack of systematic training in these areas. Therefore, they propose again the expansion of curriculum in secondary and tertiary education with adapted tutoring in the areas of English language teaching and the use of ICTs.

The aspects of fieldwork as described by some of the students in this study do not coincide with previous findings that have shown that special adjustments are made for deaf college students. The Greek Deaf Students request professors to arrange well-established fieldwork that is also connected with the subject matter. A suggestion that additional needs should be accommodated such as communication, ice-breaking meetings and information-awareness. What was surprising is the low knowledge level in the distance learning procedure, (Tullent-Runnels, et al., 2009) a fact which could be attributed to the limited access to information due to the lack of command of the English language. Distance learning is an often proposed alternative but was mentioned by only two deaf students who at some point attended Gallaudet University.

Finally, many students express their desire to study abroad, though in general they are hesitant to do so as they do not know English, and do not have access to relevant materials. Students also underlined the inability of university services to inform about and organize ERASMUS exchange programs so as to meet the needs of DS**,** a problem that is above all attributed to the lack of command of English.

The results from this study lead to a *proposal*, in priority, a number of adjustments which the Greek universities should foresee in order to facilitate DS access in the classroom. The most important of the proposed adjustments in infrastructure and academic services are the following: state-of-the-art assistive technology, voice recording devices, Real Time Captioning (RTC), sign language interpreters, tutoring, training and especially training in ICTs, adapted teaching techniques, fully qualified and trained staff, adapted course material, evaluation alternatives, English language courses, fieldwork and liaison with international studies.

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