BORDÓN
Revista de Pedagogía

Volumen 68
Número, 3
2016

SOCIEDAD ESPAÑOLA DE PEDAGOGÍA

CURRICULAR ADAPTATIONS FOR DEAF AND HARD OF HEARING STUDENTS AT UNED UNIVERSITY

Las adaptaciones curriculares en los estudiantes con discapacidad auditiva de la UNED

MARIO PENA, JOSÉ M. SUÁREZ[1] Y ROBERTO BAELO[2]

[1]*Universidad Nacional de Educación a Distancia (UNED)*

[2] *Universidad de León*

DOI: 10.13042/Bordon.2016.68401

Fecha de recepción: 29/05/2015 • Fecha de aceptación: 01/08/2015

Autor de contacto / Corresponding Author: Mario Pena. Email: mpena@edu.uned.es

Fecha de publicación *online:* 19/02/2016

INTRODUCTION. This paper examines the degree of satisfaction with curricular adaptations shown by deaf and hard of hearing students enrolled at the Universidad Nacional de Educación a Distancia (UNED), as well as the resulting benefits they perceived in terms of their self-efficacy, reduction in pre-examination anxiety and social support for study. **METHOD.** A total of 133 students with hearing disabilities participated in this study. Out of these 133 students, 28 were accorded some kind of adaptation, which represented almost all (84.84%) of the students at UNED who have received an adaptation. Data collection was achieved via an online questionnaire designed specifically for this study. All analyses were performed using statistical software package SPSS for Windows, version 21.0. **RESULTS.** The results indicate a high level of perceived satisfaction among students who were accorded curricular adaptations, and a relationship was observed between the demand for adaptations and student satisfaction. The results also reveal that the greatest perceived benefit was obtained in relation to a reduction in anxiety in examination situations, followed, although moderately, by benefits in relation to self-efficacy and social support. **DISCUSSION.** It is necessary to continue conducting an in-depth exploration of how the request for adaptions and the concession of them can influence the academic life of students with disabilities. Here, the aim is to achieve full inclusion in university life and the acquisition of the competencies that will equip students with disabilities to enter the labour market with the same opportunities as other students.

Keywords: *Deaf and hard of hearing, University students, Part-time attendance education, Accessibility, Examination anxiety, Curricular adaptations.*

Introduction

Integration and equal opportunities policies for people with disabilities have been extended to all stages of education, including university education (Suárez, 2011). The introduction of free enrolment for all students with disabilities, in force in all Spanish universities since 2007, has prompted an increase in the number of students with disabilities entering higher education. According to the Guide to Disability Awareness at University (Fundación Universia, 2014), there were 21,942 students with disabilities enrolled at Spanish universities, during the academic year 2013-2014. This confirms an upward trend in recent years, were 98.3% are pursuing their studies at public universities, and 42.8% of the total have chosen to conduct their studies at distance universities (Fundación Universia, CERMI & PwC, 2013).

The increased presence of people with disabilities in university lecture halls has led to the development of a series of actions aiming to achieve educational inclusion. Thus, almost all Spanish universities have a support service for students with disabilities (Fundación Universia, 2014). These services have been meeting annually since 2011. In this year the Support Services for People with Disabilities at University (Spanish acronym SAPDU) Network was created, sponsored by the Conference of Vice-Chancellors of Spanish Universities (Spanish acronym CRUE) through the Deputy of Vice-Chancellors for Student Affairs (Spanish acronym RUNAE) section. Similarly, there has been an increase in the volume of scientific literature in this field, and several publications have appeared providing general guidelines for the university community (Alonso & Díez, 2008; Andreu, Pereira & Rodríguez, 2010; Díez *et al.,* 2011; Grupo de investigación suroeste, 2010; Guasch, Dotras, Álvarez & Guasch, 2012; Rodríguez, 2010a). Other publications with a more specific nature have been designed to enhance guidance and tutorial actions for students with functional diversity (Álvarez-Pérez, 2012; Álvarez-Pérez, Alegre-de-la-Rosa & López-Aguilar, 2012; Gairín & Muñoz, 2013; Morillas, Pérez & de Paz, 2008). Another important milestone was the first International Congress on University and Disability (Madrid, 2012). In this congress, a series of presentations were given on the research and the most pertinent academic experiences concerning people with disabilities.

In this context, UNED has played an important role in ensuring the educational inclusion of people with disabilities in higher education. According to data provided by the General Secretariat of Universities through the University Commission at the Forum for Educational Inclusion of Students with Disabilities (Secretaría General de Universidades, 2011). The number of students with disabilities enrolled at UNED in 2011 accounted for 39.44% of Spanish university students with disabilities. Up to 2014, this percentage has remained relatively stable were a total of 9,160 students with disabilities were enrolled at UNED (Fundación Universia, 2014), representing 41.74% of the total number of university students with disabilities.

UNED has become a benchmark for public and distance university for students with disabilities; consequently, it has adopted a series of measures to ensure equal opportunities and universal access to higher education studies. As Rodríguez (2010b) points out, some of the most noteworthy of these measures include: improving the physical accessibility of UNED services and facilities in all its centres and central headquarters; improving the accessibility of information and communication technologies; implementing adaptations in the teaching-learning process and the assessment of students with disabilities; the creation of UNED Disability and Voluntary Work Unit and the Care Centre for Students with Disabilities (UNIDIS); and the payment exemption of academic fees for students with an officially recognized degree of disability equal to or greater than 33%. Besides these measures, and in order to respond to the special or specific

educational needs of these students, UNED has implemented a series of modifications or adjustments to the educational programme, known as *adaptations* (Pereira, 2010). These adaptations are no longer focused exclusively on the examination or assessment procedures but have been extended to address the overall teaching-learning process.

In the academic year 2010-2011, 6,421 students enrolled at UNED declared a disability status. Among them, 488 were deaf or hard hearing, accounting for 7.5% of the total population number of students with disabilities enrolled. In the academic year 2013-2014, the number of deaf and hard of hearing students rose to 633, i.e. 7% of all students with disabilities. These students can apply for any of the 16 categories of adaptations that UNED offers (Pereira, 2010). Table 1 lists those adaptations, which are particularly relevant to deaf and hard of hearing students.

Table 1. Adaptations for deaf and hard of hearing students

Different location at examinations: being placed near to the examiners
Support or help from the examiners: addressing the student in an individual way
Adaptation of educational material: subtitling audio-visual materials
Support or help from the examiners: extending the duration of the examination by 30 minutes
Examination adapted to time constraints, prepared by the teaching team (only for examinations of two hours' duration)
Technical help and support resources for learning activities: loan of frequency modulation (FM) systems
Adaptation of essay examinations to multiple choice format
Adaptation of essay examinations to short question format
Sign language interpreter presents on examinations
Sign language interpreter in tutorials/courses/seminars

The literature indicates that numerous papers have been published, containing proposals for the inclusion of deaf and hard of hearing students (Andrews, Leigh & Weiner, 2004; Antia, Stinson & Gaustad, 2002; Marschark, Lang & Albertini, 2002; Marschark & Spencer, 2010; Moores & Martin, 2006). Those papers discuss the challenges posed for teachers by the presence of these students in the classroom (Garberoglio, Gobble & Cawthon, 2012; Johnson, 2004), whether in primary or secondary education (Karchmer & Mitchell, 2003; Mertens, 1989; Richardson, Marschark, Sarchet & Sapere, 2010). Nevertheless, few scientific studies have been conducted on deaf and hard of hearing university students. Those existing ones have focused on variables such as academic performance (Lang, 2002; Napier & Barker, 2004; Richardson, Barnes & Fleming, 2004; Richardson, Long & Foster, 2004; Richardson, MacLeod-Gallinger, McKee & Long, 2000). Furthermore, we were unable to identify scientific studies that had confirmed "the effectiveness of indicators of relevant actions and good practice concerning equality of opportunity in higher education for people with disability, that would enable progress in the formulation of standards for programmes and services aimed at university students with disability" (Alonso & Díez, 2008: 82). For this, one must add the shortcomings and limitations of the studies, which have been published as indicated by experts in this field (Luckner, Sebald, Cooney, Young & Muir, 2005).

Given this context, one of the objectives proposed for this research was to study the use of adaptations by deaf and hard of hearing students at UNED and determine the level of suitability and degree of satisfaction with the curricular adaptations offered by UNED's University Service for Students with Disabilities (UNIDIS) in meeting the needs of deaf and hard of hearing students. The study also analysed the educational benefits perceived by these students, attempting to identify the benefits that

students perceived as a result from these adaptations in terms of their degree of self-efficacy when coping with the learning process; the level to which pre-examination anxiety was reduced, and the social support network to help cope with studying.

Methodology

Procedure

Data collection was achieved via an online questionnaire designed specifically for this study, which students received by email. In an attempt to avoid response bias, great emphasis was placed in the questionnaire on respecting anonymity. In addition, the instructions stressed the importance of giving sincere responses, indicating that the information obtained would remain strictly confidential and that there were no right or wrong answers since the responses could only approximate what students felt was their actual experience. The data was codified and entered into a statistical program for further processing.

Participants

Non-probabilistic, opportunity sampling was employed, also known as *convenience sampling*. Sampling was based on students who voluntarily wished to participate in our study. The final sample of the present study consisted of 133 students, of whom 72 were male (54.1%) and 61 female (45.9%). Out of this, 28 were accorded some kind of adaptation, which represented almost all (84.84%) of the students at UNED who have received an adaptation.

56.3% of students in the sample were enrolled at four Faculties/Schools: Law (16.5%), Psychology (15%), Geography and History (12.8%) and the School of Industrial Engineering (12%) (table 2).

Table 2. Number and percent of students in each faculty/school (from highest to lowest)

	N	%
Faculty of Law	22	16.5
Faculty of Psychology	20	15
Faculty of Geography and History	17	12.8
School of Industrial Engineering	16	12
Faculty of Economics and Business Studies	13	9.8
Faculty of Political Science and Sociology	12	9
Faculty of Education	10	7.5
Faculty of Language and Literature	9	6.8
Faculty of Science	7	5.3
School of Computer Engineering	5	3.8
Faculty of Philosophy	2	1.5

In terms of the *degree of hearing loss* reported by the participants, eight of them reported mild impairment, 41 moderate impairment, 25 reported serious impairment and 59 severe impairment.

Regarding their *preferred method of communication*, the majority of them (n = 118) used oral language to communicate (88.7%), a small number who reported using sign language alone (n = 3) and 9% of respondents (n = 12) use both methods of communication. Consequently, few students (n = 14) reported having an adequate command of sign language (10.6%), whereas 91% reported having a high level of proficiency in the oral language (n = 126).

With respect to the *use of FM equipment*, most of the students (n = 122; 91.7%) did not use this system, compared with the *use of hearing aids*, where 45.1% (n = 60) used them for both ears and 22.6%

(n = 30) for only one ear. The remaining 32.3% (n = 43) reported never using them.

The use of *cochlear implants* was not a defining characteristic of deaf and hard of hearing students at UNED (table 3), with only 10 students in the sample reporting their use (7.5%).

Table 3. Number and percent of students who used a cochlear implant

	N	Valid %
Yes, in one ear	8	6
Yes, in both ears	2	1.5
Do not use	123	92.5
Total	133	100.0

Lastly, 82% of deaf and hard of hearing students at UNED (n = 109) reported having an *adequate level of literacy*.

Instruments and variables

On the one hand, the study aims to collect information about the number of adaptations requested by the students and conceded to them in our sample. On the other hand, the intent of the study is to determine the degree of satisfaction perceived by students with these adaptations. We define the variable satisfaction as the person's level of contentment after comparing the perceived performance of a product or service with their expectations.

Information on the study variables was collected using the *online* version of the *Questionnaire on perceived benefits resulting from adaptations* (PBA) (table 8), in which responses were scored using a seven-point scale (1 = *strongly disagree* to 7 = *completely agree*). The purpose of this instrument was to study the three variables that are strongly associated with cognitive and motivational aspects of learning and study (Suárez & Fernández, 2004): self-efficacy, reduction in examination anxiety and social support for the study.

Thus, we define self-efficacy as the judgements that people make about their own abilities to perform certain tasks or activities. Examination anxiety was considered as a set of emotional responses with cognitive, physiological and behavioural components that accompany and alter performance, consisting of concerns about possible negative consequences or failure in an assessment situation. Lastly, we understand social support as the relative presence or absence of psychological support resources provided by others in relation to academic tasks.

In addition in order to obtain the information about these variables, we sought to determine the number of adaptations that were requested and accorded to the students in our sample.

Exploratory factor analysis

Given the characteristics of the study and, in order to achieve the established objectives, we conducted a series of statistical analyses of the data. First proceeded to perform an analysis of the reliability and validity of the instrument used. We conducted an exploratory factor analysis of the *Questionnaire on perceived benefits resulting from adaptations* using a principal components analysis with varimax rotation.

This was followed by an analysis of reliability using the Cronbach's alpha coefficient for each of the obtained factors, as well as for the whole questionnaire. Subsequently, we conducted a series of descriptive analyses that enabled us to study the different sample variables. Last, we finish the analyses by studying the correlations between these variables. All these analyses were performed using the statistical software package SPSS for Windows, version 21.0.

Note that we used the technique of structural equation modelling to identify a model, which

could explain how the number of adaptations requested and accorded by students, affected self-perceptions of satisfaction, self-efficacy, anxiety and collaboration. In general, the application of structural equation modelling yields several advantages compared with other more traditional multivariate methods. For example, it makes it possible to conduct simultaneous tests of a number of interrelations between variables, and provides adjustment measures for the model as a whole, as well as pathway coefficients and multiples R. Thus, a theoretical model can be tested using a few given data.

Similarly, three strategies can be adopted with the structural equation modelling: confirmatory modelling, rival models and model development. To obtain the model described in this study and, in order to avoid a pure exploratory approach, we adopted the model development strategy. This strategy differs from the other two in that, despite the identification of a model, the goal is to improve it through modifications that lead to a new one. The estimation technique employed was a maximum likelihood, and the estimation process used was the direct estimation.

Results

Descriptive

Of all the 28 students who requested and were granted adaptations, the number of students who had requested and had received more than one type of adaptation was higher (tables 4 and 5). Thus, in the case of adaptations requested, the largest group of students was composed of those students who had requested two adaptations, representing 35.7% of cases, followed by the group of students who had requested six adaptations, accounting for 21.4% of cases. The smallest group was related to the students who had requested ten adaptations, i.e. the total number of adaptations available, which consisted of a single case and represented 3.6% of the total.

Table 4. Frequency and percent of students by number of adaptations requested

	N	Valid %	Cumulative %
1 adaptation	2	7.1	7.1
2 adaptations	10	35.7	42.9
3 adaptations	6	21.4	64.3
4 adaptations	2	7.1	71.4
5 adaptations	2	7.1	78.6
6 adaptations	2	7.1	85.7
7 adaptations	3	10.7	96.4
10 adaptations	1	3.6	100.0
Total	28	100.0	

For the adaptations accorded, the largest group of students consisted of those who had been conceded two adaptations, representing 42.9% of cases, whereas the smallest groups were those which had been accorded ten and five adaptations, with only one instance in each case, representing each of them 3.6% of cases.

Table 5. Frequency and percent of students by number of adaptations accorded

	N	Valid %	Cumulative %
1 adaptation	6	21.4	21.4
2 adaptations	12	42.9	64.3
3 adaptations	6	21.4	85.7
4 adaptations	2	7.1	92.9
5 adaptations	1	3.6	96.4
10 adaptations	1	3.6	100.0
Total	28	100.0	

Regarding the type of adaptation requested, the most demanded one, accounting for 79%

of students who had requested an adaptation, was the one concerning a different sitting location to the one they had been assigned in an examination. This was followed by the adaptation related to the support or help from the examiners, requested by 68% of the students (table 6). The type of adaptation requested least often was the one requiring a sign language interpreter for tutorials/courses/seminars, requested by 14% of the students, followed by the request for a sign language interpreter at examinations, and for examinations to be adapted to short questions format, both requested by 18% of the students.

With regard to the adaptations accorded, the most frequent one was once again the one requesting being placed in a different location when examinations, conceded to 20 of the 28 students, representing 71% of all cases. This was followed by the adaptation regarding support or help from the examiners, accorded to 18 of the 28 students and representing 64% of the cases (table 7). The adaptations least frequently conceded were the examination adaptations to short questions and multiple-choice test formats, each of them accorded to only two students and representing 7% of cases.

Table 6. Adaptations requested by students

	N	%
Different location when examinations: being placed near to the examiners	22	79
Support or help from the examiners: addressing the student in an individual way	19	68
Adaptation of educational material: subtitling audio-visual materials	13	46
Support or help from the examiners: extending the duration of the examination by 30 minutes	10	36
Examination adapted to time constraints, prepared by the teaching team (only for examinations of two hours' duration)	9	32
Technical help and support resources for learning activities: loan of FM systems	8	29
Adaptation of essay examinations to multiple-choice format	6	21
Adaptation of essay examinations to short questions format	5	18
Sign language interpreter present at examinations	5	18
Sign language interpreter in tutorials/courses/seminars	4	14

Table 7. Adaptations accorded

	N	%
Different location when examinations: being placed near to the examiners	20	71
Support or help from the examiners: addressing the student in an individual way	18	64
Examination adapted to time constraints, prepared by the teaching team (only for examinations of two hours' duration)	6	21
Support or help from the examiners: extending the duration of the examination by 30 minutes	6	21
Adaptation of educational material: subtitling audio-visual materials	5	18
Technical help and support resources for learning activities: loan of FM systems	4	14
Sign language interpreter in tutorials/courses/seminars	4	14
Sign language interpreter in on-site examinations	4	14
Adaptation of essay examinations to multiple-choice format	2	7
Adaptation of essay examinations to short questions format	2	7

Regarding user satisfaction with adaptations, the one showing the greatest satisfaction was the adaptation of examinations to short questions format (table 8). Furthermore, this adaptation also received the highest possible score in all cases, with a mean value of 7 points. This was followed by the adaptation requiring being set in a different location at examinations, with a mean value of 6.13. In contrast, the adaptations holding the least satisfaction among users were the adaptation of educational material: subtitling audio-visual materials, the adaptation of essay examinations to multiple-choice format (both with a mean value of 3). The overall satisfaction with adaptations was 5.20 out of 7.

Table 8. User satisfaction with adaptations (1 = none to 7 = a lot)

	Mean
Adaptation of examinations to short questions format	7.00
Different location when examinations: being placed near to the examiners	6.13
Support or help from the examiners: addressing the student in an individual way	5.56
Technical help and support resources for learning activities: loan of FM systems	5.25
Support or help from the examiners: extending the duration of the examination by 30 minutes	4.67
Sign language interpreter at examinations	4.00
Examination adapted to time constraints, prepared by the teaching team (only for examinations of two hours' duration)	3.80
Sign language interpreter in tutorials/courses/seminars	3.40
Adaptation of essay examinations to multiple-choice format	3.00
Adaptation of educational material: subtitling audio-visual materials	3.00
General	5.20

Table 9. Factorial structure, variance and reliability coefficients obtained from the Questionnaire on perceived benefits as a result of adaptations

Items	Components		
	Social support	Reduction in anxiety	Self-efficacy
Thanks to the accorded adaptations, I am able to exchange notes/ explanations with my classmates more often	.830		
Thanks to the accorded adaptations, I can ask my tutors/teachers to clarify concepts I do not understand well	.827		
Thanks to the accorded adaptations, I am able now to ask for help from another classmate when I do not understand some aspect of a certain subject	.815		
Thanks to the accorded adaptations, I am now calmer during examinations		.898	

Table 9. Factorial structure, variance and reliability coefficients obtained from the Questionnaire on perceived benefits as a result of adaptations (cont.)

Items	Components		
	Social support	Reduction in anxiety	Self-efficacy
Thanks to the accorded adaptations, I am now more relaxed before examinations		.816	
Thanks to the adaptations accorded me, I am now able to do the work and examinations in a better way		.508	.796
Thanks to the accorded adaptations, I am able now to learn in a better way the main material taught	.580		.691
Thanks to the accorded adaptations, I now believe that this academic year will be better for me	.505		.592
% of variance	35.432	28.875	26.506
% of cumulative variance	35.432	64.307	90.813
Cronbach's alpha for each factor	.924	.935	.907
Cronbach's alpha for the questionnaire			.947

Reliability and validity of the questionnaire

In relation to the *Questionnaire on perceived benefits resulting from adaptations* (PBA), we obtained a three-factor structure from the data factor analysis (table 9) related to self-efficacy, examination anxiety reduction and social support for the study. These factors were grouped eight items, explaining 90.81% of the total variance.

The reliability analysis yielded a relatively high Cronbach's alpha for both the questionnaire as a whole (.95) and for each of the factors: self-efficacy, .91; anxiety reduction, .94; and social support, .92.

Perceived benefits in self-efficacy, anxiety and social support

With regard to the benefits perceived by the users of adaptations, in general the greatest perceived benefit was related to the reduction of anxiety in examination situations (M = 4.46), followed by benefits in self-efficacy (M = 3.69) and, in third place, the benefit in social support for study (M = 3.14) (table 10).

Table 10. Perceived benefits in self-efficacy, anxiety and social support (1 = none to 7 = a lot)

	Self-efficacy	Anxiety	Social Support
Mean	3.69	4.46	3.14
SD	1.93	2.09	1.75

Correlations

Regarding the number of accorded adaptations, this was not related to the benefits perceived by adaptation users in terms of self-efficacy, anxiety or social support. However, we found a significant positive correlation between the number of adaptations requested and the overall satisfaction with the adaptations, as well as with the benefits perceived by users with respect to their anxiety in examination situations and social support.

In addition, we also observed a significant positive correlation between overall satisfaction with the adaptations and the benefits perceived by the users regarding their anxiety in examination situations and social support.

Lastly, we found a strong positive and significant correlation between the three variables of benefits perceived by adaptation users in terms of their self-efficacy, reduced anxiety in examination situations and social support.

Proposal for an explanatory model of the relationships between the number of adaptations requested and accorded, and satisfaction, self-efficacy, anxiety reduction and collaboration

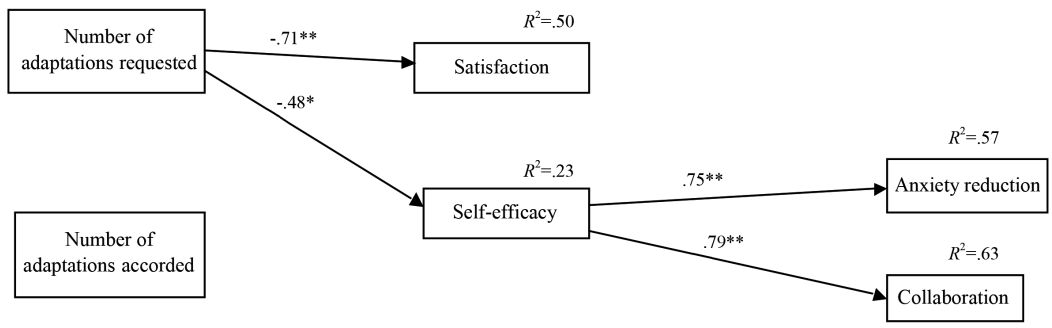
To test the relationship between the different types of studied variable, we specified a routes diagram in AMOS 19, which, as explained in the section on data analysis, were modified using the Modification Adjustment Indices provided by the program. The final results suggest are aligned with the premises stated in the previous data analysis section. The model in figure 1 showed an acceptable adjustment with the data ($\chi 2(11) = 13.59$, $p = .257$). With respect to the degree of adjustment of the model, the most demanding criterion is generally considered the level of statistical significance *p-value*, which in our case indicated that there were no statistically significant differences were obtained between the final model and the data. Other adjustment statistics that provided corroborative evidence were the CFI = .95, IFI = .96 and TLI = .94. However, it should be noted that we obtained a GFI = .84.

Furthermore, the adequacy of the data referring to the squared multiple correlations of the endogenous model variables was observed representing the proportion of variance explained by the predictors of each variable. These were high for satisfaction, anxiety reduction and collaboration, and slightly for self-efficacy.

The results obtained indicate significant and in general, strong relations. Interesting was the significant and negative relations between the number of adaptations requested, satisfaction and self-efficacy. In contrast, no relation was obtained between the number of accorded adaptations and the rest of the variables. Similarly, the results showed a significant and positive relation between self-efficacy, anxiety reduction and collaboration.

However, no indirect effect was observed, whether between the number of adaptations requested or the number of adaptations conceded.

Figure 1. Explanatory model of the relationships between the number of adaptations requested and accorded, and satisfaction, self-efficacy, anxiety reduction and collaboration. Only statistically significant (*p < .05, **p < .01) standardised regression coefficients are shown in the model



Conclusions and reflections

In order to assess the benefits perceived by student resulting from adaptations (PBA), we obtained high levels of reliability and validity for the developed instrument for the present study.

Regarding requests for adaptations, nearly all the students who participated in the study requested more than one adaptation. The most common case was to request two adaptations, representing 35.7% of the cases.

With respect to the adaptations conceded, these were fewer than those requested. Once again, the most common case was for a student to be accorded two adaptations, accounting for 42.9% of the cases. We also found that the type of adaptation most demanded and most frequently conceded was the one concerning being set in a different location for an examination, accorded in 79% of the cases, followed by support from the examiners, conceded in 68% of the cases.

In terms of the satisfaction of students who were conceded with adaptations, this was relatively high. Specifically, the greatest satisfaction was obtained in the case of adapting examinations to short questions format, followed by being set in a different location for examinations. We found that a greater demand for adaptations by students was associated with a greater satisfaction with the adaptations.

With respect to the perceived benefits, the greatest benefit perceived by the students was the reduction in anxiety in examination situations, followed, although moderately, by the benefits in self-efficacy and social support. These results are consistent with the purpose of the adaptations since the majority of them were designed to be used by deaf and hard of hearing students in examination situations.

Also, of interest were the adaptations and improvements proposed by the students themselves. These proposals focused on the use of technological devices such as a microphone in tutorials and examinations, the acoustic adequacy of rooms, reservation of seats in the front row for tutorials, the availability of a written text for videos, DVDs and CDs and the use of hearing induction loop systems. This data will enable informed, evidence-based implementation of new adaptation measures in future academic years which, together with those already in existence, should be subject to systematic evaluation.

Another important issue was the request for teachers and tutors to be aware of the characteristics and problems of deaf and hard of hearing people. The opinion of participants was that such information could facilitate a more appropriate attitude towards their needs.

It is remarkable that, when proposing possible new adaptations and improvements, many of the participants suggested "new" adaptations that were actually already available. This indicates that the level of information reaching students with disabilities, or, at least, deaf and hard of hearing students, is inadequate.

We also observed that a greater demand for adaptations from students was negatively associated with the perceptions of reduced anxiety in examination situations and support from others. However, this relation was not found with respect to the adaptations conceded. It seems that those students who requested a greater number of adaptations also presented more difficulty in obtaining or perceiving such benefits being this an aspect that should be addressed more detail in future research.

The model on the effects of the number of requests on satisfaction, self-efficacy, anxiety reduction and social support, generated interesting conclusions. On the one hand, we observed that an excessive demand of adaptations was negatively associated with the level of satisfaction and self-efficacy. The previous may result from the lack of accurate information about

each of the adaptations at the moment of requesting them or to the fear of not requesting an adaptation that might be useful later on. Therefore, the students requested far more adaptations than they really needed. On the other hand, it should be noted that those students who saw themselves as competent to perform an academic task (self-efficacy) presented higher levels of anxiety reduction than their peers.

Lastly, we should mention some of the limitations of this study. First, our study was not longitudinal, a factor which has prevented us from establishing causal relations between the variables studied. Another restrictive element was the method used for sample selection since we used convenience sampling rather than random sampling. Although almost all UNED deaf and hard of hearing students who requested adaptations (28 of 133 students) participated in this study the sample is not enough to generalize the results at the Spanish context. It is recommended to increase the sample as far as possible.

Despite these limitations, we believe it is necessary to continue conducting an in-depth exploration of how the request and concession of adaptations can influence the academic life of students with disabilities since the aim is to achieve full inclusion in university life and acquisition of the competencies that will equip students with disabilities to enter the labour market with the same opportunities as other students.

Acknowledgments

This research was supported by the Royal Board on Disability, an autonomous body affiliated to the Spanish Ministry of Health, Social Services and Equality.

References

Alonso, A., & Díez, E. (2008). Universidad y discapacidad: indicadores de buenas prácticas y estándares de actuación para programas y servicios [University and disability: pointers to good practice and performance standards for programs and services]. *Revista Española sobre Discapacidad Intelectual, 39 (2),* 82-98.

Álvarez-Pérez, P. (2012). *Tutoría universitaria inclusiva; guía de buenas prácticas para la orientación del alumnado con necesidades educativas específicas [Inclusive university tutoring; guide to good practice guidance for pupils with special educational needs]*. Madrid, Spain: Narcea.

Álvarez-Pérez, P. R., Alegre-de-la-Rosa, O. M., & López-Aguilar, D. (2012). Las dificultades de adaptación a la enseñanza universitaria de los estudiantes con discapacidad: un análisis desde un enfoque de orientación inclusiva [Difficulties in adapting to university education of students with disabilities: an analysis from the perspective of inclusive orientation]. *RELIEVE*, *18 (2)*. doi:10.7203/relieve.18.2.1986

Andreu, A. B., Pereira, A., & Rodríguez, V. M. (2010). *Guía de adaptaciones y recursos para estudiantes con discapacidad [Guide of adaptations and resources for students with disabilities]*. Madrid, Spain: UNED.

Andrews, J. F., Leigh, I., & Weiner, M. T. (2004). *Deaf people: Evolving perspectives from psychology, education and sociology*. Boston, MA: Pearson Education.

Antia, S. D., Stinson, M. S., & Gaustad, M. G. (2002). Developing membership in the education of deaf and hard-of-hearing students in inclusive settings. *Journal of Deaf Studies and Deaf Education*, *7 (3),* 214-229.

Díez, E., Alonso, A., Verdugo, M. Á., Campo, M., Sancho, I., Sánchez, S.… & Moral, E. (2011). *Espacio Europeo de Educación Superior: estándares e indicadores de buenas prácticas para la atención a estudiantes universitarios con discapacidad [European Higher Education: standards and indicators of good practice for the care of disabled students]*. Salamanca: Publicaciones del INICO.

Fundación Universia (2014). *Guía de atención a la discapacidad en la Universidad 2014 [Guide attention to disability in 2014 University]*. Madrid, Spain: Fundación Universia.

Fundación Universia, CERMI, & PwC (2013). *Universidad y discapacidad. Estudio sobre el grado de inclusión del sistema universitario español respecto de la realidad de la discapacidad [University and disability. Study about the degree of inclusión in the spanish university system to the reality of disability]*.Madrid, Spain: Fundación Universia.

Gairín, J., & Muñoz, J. L. (2013). La acción tutorial en los estudiantes universitarios con discapacidad [The tutorial action in college students with disabilities]. *Educación*, *22 (43),* 71-90.

Garberoglio, C. L., Gobble, M. E., & Cawthon, S. W. (2012). A national perspective on teachers' efficacy beliefs in deaf education. *Journal of Deaf Studies and Deaf Education*, *17 (3),* 367-383.

Grupo de Investigación Suroeste (2010). *Guía de apoyo a las necesidades educativas de estudiantes con discapacidad [Guide to support the educational needs of students with disabilities]*. Huelva, Spain: Vicerrectorado de Estudiantes y Participación Social de la Universidad de Huelva.

Guasch, D., Dotras, P., Álvarez, M. H., & Guasch, Y. (2012). *Guía para implementar el diseño Instruccional Universal en la Universidad [Guide for implementing the Universal Instructional Design at the University]*.Vilanova i la Geltrú, Spain: Observatorio Universidad y Discapacidad.

Johnson, H. A. (2004). US deaf education teacher preparation programs: A look at the present and a vision for the future. *American Annals of the Deaf*, *149 (2),* 75-91.

Karchmer, M. A., & Mitchell, R. E. (2003). Demographic and achievement characteristics of deaf and hard-of-hearing students. In M. Marschark & P. E. Spencer (eds.), *Oxford handbook of deaf studies, language, and education* (pp. 21-37). New York, NY: Oxford University Press.

Lang, H. G. (2002). Higher education for deaf students: Research priorities in the new millennium. *Journal of Deaf Studies and Deaf Education*, *7 (4),* 267-280.

Luckner, J. L., Sebald, A. M., Cooney, J., Young, J., & Muir, S. G. (2005). An examination of the evidence-based literacy research in deaf education. *American Annals of the Deaf*, *150 (5),* 443-456.

Marschark, M., Lang, H. G., & Albertini, J. A. (2002). *Educating deaf students: From research to practice*. New York, NY: Oxford University Press.

Marschark, M., & Spencer, P. E. (eds.). (2010). *The Oxford handbook of deaf studies, language, and education* (vol. 2). New York, NY: Oxford University Press.

Mertens, D. M. (1989). Social experiences of hearing-impaired high school youth. *American Annals of the Deaf*, *134 (1),* 15-19.

Moores, D., & Martin, D. (2006). *Deaf Learners: Developments in curriculum and instruction*. Washington, DC: Gallaudet University Press

Morillas, M. A., Pérez, P. R. A., & de Paz, J. F. C. (2008). Apoyo a la integración de estudiantes con discapacidad en la enseñanza universitaria: algunas medidas y propuestas de actuación orientadora [Support for the integration of students with disabilities in higher education: Some

measures and proposals for guiding action]. *Revista inter-universitaria de investigación sobre discapacidad e interculturalidad*, 2, 129-150.

Napier, J., & Barker, R. (2004). Accessing university education: Perceptions, preferences and expectations for interpreting by deaf students. *Journal of Deaf Studies and Deaf Education*, *9 (2),* 228-238.

Pereira, A. (2010). Adaptaciones en los procesos de aprendizaje y evaluación [Adaptations in the processes of learning and assessment]. In A. B. Andreu, A. Pereira & V. M. Rodríguez, *Guía de adaptaciones y recursos para estudiantes con discapacidad [Guide of adaptations and resources for students with disabilities]* (pp. 35-98). Madrid, Spain: UNED.

Richardson, J. T., Barnes, L., & Fleming, J. (2004). Approaches to studying and perceptions of academic quality in deaf and hearing students in higher education. *Deafness & Education International*, *6 (2),* 100-122.

Richardson, J. T., Long, G. L., & Foster, S. B. (2004). Academic engagement in students with a hearing loss in distance education. *Journal of Deaf Studies and Deaf Education*, *9 (1),* 68-85.

Richardson, J. T., MacLeod-Gallinger, J., McKee, B. G., & Long, G. L. (2000). Approaches to studying in deaf and hearing students in higher education. *Journal of Deaf Studies and Deaf Education*, *5 (2),* 156-173.

Richardson, J. T., Marschark, M., Sarchet, T., & Sapere, P. (2010). Deaf and hard-of-hearing students' experiences in mainstream and separate postsecondary education. *Journal of Deaf Studies and Deaf Education*, *15 (4),* 358-382.

Rodríguez, V. M. (2010a). *Atención a los estudiantes con discapacidad en la Universidad. Orientaciones para el profesorado [Care of disabled students at the university. Guidance for teacher]*. Madrid, Spain: UNED.

Rodríguez, V. M. (2010b). Los servicios de apoyo a estudiantes universitarios en España: situación actual y líneas de futuro [Support services to university students in Spain: present and future lines]. In AA. VV., *Actas del I Encuentro Iberoamericano sobre Universidad y discapacidad* (pp. 205-220). Madrid, Spain: UNED.

Secretaría General de Universidades (2011). *Las políticas sobre discapacidad en el sistema universitario español [Disability policies in the Spanish university system]*. Madrid, Spain: MEC.

Suárez, J. M. (2011). *Discapacidad y contextos de intervención [Disability and intervention contexts]*. Madrid, Spain: Sanz y Torres.

Suárez, J. M., & Fernández, A. P. (2004). *El Aprendizaje Autorregulado: Variables Estratégicas, Motivacionales, Evaluación e Intervención [Self-regulated learning: Strategic and motivational variables, assessment, and intervention]*. Madrid, Spain: UNED.

Resumen

Las adaptaciones curriculares en los estudiantes con discapacidad auditiva de la UNED (España)

INTRODUCCIÓN. Este trabajo examina el grado de satisfacción que manifiestan los estudiantes con discapacidad auditiva de la UNED, como resultado de las adaptaciones curriculares así como los beneficios percibidos en relación con su autoeficacia, la reducción de la ansiedad ante los exámenes y el apoyo social al estudio. MÉTODO. En esta investigación han participado 133 estudiantes con discapacidad auditiva, de los que 28 han recibido algún tipo de adaptación curricular (84.84% respecto del total).Para el desarrollo del estudio se ha utilizado un instrumento cuyas pruebas de validación y fiabilidad arrojan datos favorables en ambos aspectos. La recogida de datos se realizó

a través de un cuestionario *on-line*, diseñado específicamente para esta investigación y que los estudiantes recibieron a través de su correo electrónico. El tratamiento estadístico de los datos se realizó a través del programa estadístico SPSS para Windows, version 21.0. RESULTADOS. Los resultados obtenidos señalan un elevado nivel de satisfacción percibida por los estudiantes que reciben adaptaciones, a la par que se observa una relación entre la demanda de adaptaciones y la satisfacción por parte de los estudiantes. Asimismo, los resultados revelan que el mayor beneficio percibido se obtuvo en relación a la reducción de la ansiedad en situaciones de examen, seguido, aunque ya de forma moderada, de los beneficios en relación con la autoeficacia y en el apoyo social. DISCUSIÓN. Consideramos necesario seguir explorando en profundidad la forma en la que la solicitud y concesión de adaptaciones puede influir en la vida académica de los estudiantes con discapacidad, ya que el objetivo perseguido consiste en lograr la plena inclusión en la vida universitaria y la adquisición de las competencias que capaciten al alumnado con algún tipo de discapacidad para ingresar en el mundo laboral con las mismas oportunidades que el resto de estudiantes.

Palabras clave: *Discapacidad auditiva, Estudiantes universitarios, Educación semipresencial, Accesibilidad, Ansiedad ante los exámenes, Adaptaciones curriculares.*

Résumé

Adaptations du programme d'études pour les étudiants sourds ou malentendants à la UNED

INTRODUCTION. Dans cette étude on analyse le niveau de satisfaction que les étudiants ayant handicap auditif à la Universidad Nacional de Educación a Distancia (Université Nationale d'Éducation à Distance) (UNED) montrent à propos des adaptations du programme d'études, mais aussi on analyse les bénéfices aperçus en relation avec leur autoefficacité, la réduction de l'anxiété et le soutien social aux études. MÉTHODE. Dans cette recherche ont participé 133 étudiants souffrant d'un handicap auditif, parmi lesquels 28 ont reçu un certain type d'adaptation du programme d'études (84.84% du total). Pour réaliser l'étude on a utilisé un outil dont les épreuves de validation et fiabilité montrent de données suffisantes dans tous les deux directions. La collecte des données a été ciblée au moyen d'un questionnaire on-line dessiné spécifiquement pour cette recherche et qui ont reçu par mél les étudiants. Le traitement statistique des données a été fait au moyen d'un logiciel statistique SPSS pour Windows, version 21.0. RÉSULTATS. Les résultats obtenus montrent un niveau élevé de satisfaction de la part des étudiants qui reçoivent des adaptations. D'ailleurs, on peut signaler qu'il est possible d'établir une relation étroite entre la demande des adaptations et la satisfaction que les étudiants montrent. En outre, les résultats révèlent que le majeur bénéfice aperçu a été obtenu par rapport à la réduction de l'anxiété dans les situations qui entourent les examens qui est suivi, bien que d'une manière plus modérée, des bénéfices liés à l'autoefficacité et le soutien social. DISCUSSION. On considère qu'il est nécessaire de continuer la recherche en analysant la forme dans la quelle la demande d'adaptation et son octroi peuvent avoir une influence active sur la vie académique des étudiants ayant un handicap auditif donc l'objectif principal est d'obtenir l'inclusion totale de ces étudiants à la vie universitaire et de leur faciliter l'acquisition des compétences qui leur habilitent pour entrer au monde du travail avec les mêmes opportunités d'autres étudiants.

Mots clés: *Handicap auditif, Étudiants universitaires, Enseignement semi-présentiel, accessibilité, anxiété liée aux examens, adaptations du programme d'études.*

Perfil profesional de los autores

Mario Pena (autor de contacto)

Mario Pena Garrido is Associate Professor of Department Educational research and Diagnosis in Education of UNED and has been head of the Care Center for Students with Disabilities of the UNED (UNIDIS). His current research focused on training and guidance in social-emotional skills of adolescent students and teacher, as well as the diagnosis and counseling of people with special educational needs.
Correo electrónico de contacto: mpena@edu.uned.es
Dirección para la correspondencia: Faculty of Education. Office 2.64. 14, Juan del Rosal Street. 28040 Madrid (Spain).

José M. Suárez-Riveiro

José Manuel Suárez Riveiro is Associate Professor of Department Educational research and Diagnosis in Education of UNED. His current research focused on academic motivation, motivational self-regulation strategies and self-regulated learning. Moreover, the works in fields like diagnosis, counseling and disability.
Correo electrónico de contacto: jmsuarez@edu.uned.es

Roberto Baelo

Roberto Baelo Álvarez is Associate Professor in the area of Didactics and School Management in the Department of General and Specifics Didactics and Theory of the Education at the University of Leon. His expertise is in the field of the integration of Information and Communication Technologies in educational contexts. He has been widely trained in the research field, reflected in his works on methodological innovation, counselling, guidance, quality and equity in education and diversity attention. He leads Edutools, an interuniversity research group.
Correo electrónico de contacto: roberto.baelo@unileon.es