

Article

Toward Inclusive Higher Education in a Global Context

Ana María Ortiz Colón * , Miriam Agreda Montoro  and María Jesús Colmenero Ruiz

Campus Las Lagunillas, Universidad de Jaen, 23071 Jaen, Spain; magreda@ujaen.es (M.A.M.); mjruiz@ujaen.es (M.J.C.R.)

* Correspondence: aortiz@ujaen.es; Tel.: +34-953211812

Received: 12 June 2018; Accepted: 27 July 2018; Published: 30 July 2018



Abstract: The aim of this study was to analyse the perception of teaching staff at the University of Jaen regarding the integration of students with a disability, and to describe the interventions they use to respond to the specific needs of these students, to examine the differences that exist in teachers' interventions for students with a disability based on their faculty. To this end, a descriptive methodology was used ($n = 300$ teachers), and the data were gathered using a Tutoring and Attention to Special Needs in the Classroom Questionnaire (TASN-Q). The results were organised in terms of the tool's different dimensions and, in general, revealed that the teaching staff do not consider themselves sufficiently prepared to provide an educational response to students with a disability. The best-prepared teaching staff belonged to the Faculties of Social and Legal Sciences and Health Sciences. This study confirms the need for training in special needs processes to enable university teaching staff to participate in an inclusive model.

Keywords: inclusion; higher education; teacher training

1. Introduction

The presence of students with different types of educational needs at university is an undeniable reality. Access to education in Spain for people with disabilities is regulated by the different laws enacted at different levels of compulsory or non-compulsory education. Rights involving no discrimination and equal opportunities are underlined; these rights are accepted by the United Nations through the World Programme of Action Concerning Disabled Persons [1] and the Standard Rules on the Equalization of Opportunities for Persons with Disabilities [2]. Attention to students in higher education with a disability must follow the same guidelines as in all other levels of education; likewise, an institutional dimension is required to involve all members of the university community.

Thus, universities should encourage interventions that favour the existence of means, support, and resources that guarantee equality for people with a disability in relation to all other students; assure the universal design of buildings, learning environments, virtual environments, services, procedures, information, and study plans in such a way so as to guarantee that no one's right to enrol, move around, remain, communicate, study, or obtain information is affected.

We believe that a university is inclusive when it assumes an inclusive culture that consolidates a common language among the teaching staff, which considers differences among students as an opportunity to enrich knowledge. An inclusive university should avoid standardisation systems when it thoroughly analyses the obstacles that limit or condition students' participation, and when resources are effectively used to support students' learning. In short, university inclusivity occurs when conditions are created to stimulate the inclusive process that allow all students' needs to be satisfied [3]. Inclusive education is a global concept, considering access and the inclusion of students in the education system as a human right [4].

The inclusive education model appears to be the only valid model in a democratic society which, in principle, accepts differences and not only values them, but considers them so that people within a certain group who are singled out for their particular characteristics have the same opportunities as everyone else for education, training, and development [5].

Throughout this inclusive process, university teaching staff play a decisive role given that, apart from the services and support that universities have to respond to the needs this type of student presents, it is the teacher that must adapt their teaching process to the student's characteristics, interests, and difficulties. On numerous occasions, according to Fernández [3], the teaching staff present a real obstacle for these students.

For attention to special needs, the preparation of future teachers is considered relevant; training in which teachers acquire a series of teaching strategies to guarantee successful inclusion is essential [6–8]. The professional competencies teachers need in any educational process must be related, mainly, to the assessment and monitoring of educational needs, the organisation of systems, resources, and support mechanisms in all forms, and the design and development of curricular adaptations. These competencies are essential for providing support and advisory functions that tend to facilitate access and progress in special needs students' learning throughout the schooling period; competencies that should be present in all attention to special needs students units [9].

Notably, a positive attitude on the part of both students and teachers is essential to create favourable inclusive environments and generate a change in mentality toward people with educational needs [10].

An examination of the literature available allowed us to analyse research that has aimed to identify the relationship between certain variables in the university context and the object of study of this current research on inclusive models in university contexts.

Along these lines, Rodríguez-Martín and Álvarez-Arregui [11] studied the access of disabled students to higher education with a sample of 91 disabled students, examining the importance of undertaking reasoned curricular adaptations, adjusting teacher training, improving accessibility, and involving the whole university community. Gairín and Muñoz [12] presented the tutorial interventions developed in 45 Spanish universities in relation to promotion, reception, permanence, and graduation. The results of the descriptive study advanced the need for an inclusive university based on tutorial intervention, providing a guide for assisting university students with a disability.

A Dominican Republic study analysed and identified training needs for teachers of the Pedro Henríquez Ureña National University (UNPHU) for special needs students. From the results highlighted that the university community of UNPHU is not discriminatory but accepts and recognises the equal right to receive the teaching-learning process with equal conditions and resources. However, the results also showed that no training was received with respect to special needs, and teachers admitted that, with the academic training they have had, they were not prepared to work with the educational needs of their students. Thus, in order to respond to these needs, they prepare resources, support, and extension activities to ensure they are able to work with all students [13].

In Cyprus, Hadjidakou and Hartas [14] researched with different agents (students with a disability, teachers, and head teachers) in 10 higher education institutions. To respond the students' needs, the teaching staff had to introduce adaptations in exams and in teaching strategies, and modifications in infrastructure, as well as in advice on services and university support. Suriá et al. [15] analysed if the teaching staff have concerns about having disabled students in their classrooms. The research, which was performed at the University of Alicante with 56 teachers from different educational stages, concluded that the higher the educational stage, the greater the degree of concern shown by teachers. Along these lines, different authors [16–19] stressed that the higher the educational stage, the greater the discomfort and stress. A possible explanation for this finding could be the lack of specific preparation of teachers who do not work in infant or primary school education [20–23].

In line with the objectives of our research, we found the descriptive, exploratory study undertaken by Álvarez-Pérez and López-Aguilar [24], who determined that teachers are not sufficiently prepared to

provide an educational response to special needs and, therefore, be in a position to provide personalised attention to all students.

2. Materials and Methods

2.1. Objective

The aim of this study was to analyse the perception of the teaching staff at the university regarding the integration of students with a disability, as well as the interventions they apply to respond to these students' specific needs, in order to have a better understanding about the differences that exist among teachers of disabled students in terms of their faculty.

2.2. Research Design

A quantitative methodology was used in this study with a non-experimental, correlational, and descriptive design, according to Bisquerra [25], García [26], and Martínez [27].

2.3. Participants

The population object of the study included a total of 910 teachers from the university during the academic year 2016–2017, taking into account all faculties and courses in which classes are provided. To determinate the sample size required for an accurate representation of the overall population using a formula for finite known population sample, a confidence level of 95% and 5% precision range was established [28], resulting in $n = 271$. The real sample was $n = 300$; these data confirmed the representativeness of the study sample (Table 1).

Table 1. Detailed description of the sample.

Total Population	Invited Sample	Real Sample	% with Regard to Population
910	910	300	32.97

The sample was characterised by sex, age, professional category, years of professional experience, and the faculty to which they belonged (Table 2).

Table 2. Characterisation of the sample.

Sex	Women	56.1%
	Men	43.9%
Age (years)	20–29	5.2%
	30–39	15.5%
	40–49	41%
	50–59	33.9%
	60–69	4.4%
Years of professional experience	1–5	8.9%
	6–10	11.8%
	11–15	15.5%
	16–20	20.7%
	21–25	26.9%
	26–30	12.9%
	31–36	1.8%
	>36	1.5%
Professional category	Permanent lecturers	51.7%
	Tenured PhDs	12.9%
	Assistants	7.7%
	Temporary lecturers	7%
	University school lecturers	4.8%

Table 2. Cont.

	Assistant doctors	3.7%
	University professors	5.4%
	Associated professor	3.3%
	Temporary tenured PhDs	3.3%
	University school professors	0.7%
	Associated Health Sciences professors	1.1%
Faculty	Humanities and Educational Sciences	23.6%
	Jaen Advanced Technical College	22.6%
	Linares Advanced Technical College	2.6%
	Experimental Sciences	12.2%
	Health Sciences	11.1%
	Social Work	10.7%
	Social and Legal Sciences	17.7%

2.4. Instruments and Procedure

The questionnaire was completed between the months of September and November in 2016. The questionnaire was sent in the form of a Google form link via email to the entire population ($n = 910$). To avoid possible biases in the investigation, such as failures in the reception of the email or transfers to the spam folder, a second shipment was completed in October. Finally, in the month of November, the questionnaire was closed with a total of 300 participating academic staff. The Tutoring and Attention to Special Needs in the Classroom Questionnaire (TASN-Q) [24] was used to gather the research data. This questionnaire has five dimensions. The first refers to all the variables corresponding to identification data; the second refers to information, training, and resources for working with special needs; the third dimension concerns disabled students and their specific difficulties. The fourth variable addresses interventions in the classroom and assesses the action taken by teachers and; lastly, tutoring interventions. The tool includes 53 items divided in to general were obtained using dichotomous questions (yes/no), and a Likert-type scale ranging from 1 to 10 (from not at all prepared to very prepared) was used to code the diverse deficiencies teachers have come across (motor or physical, visual, hearing, psychological) or by who and when the teacher was informed about the presence of disabled students in their class. The reliability obtained by the authors [24] using the Statistical Package for the Social Sciences (SPSS. IBM, New York, NY, USA), provided a value of $\alpha = 0.873$, indicating the tool's good level of reliability [29]. Specifically, in this study, the reliability value was $\alpha = 0.85$.

The statistical analysis was performed using SPSS version 24 for Mac (Amonk, New York, United States), which we considered to be a suitable tool for this study. At the outset, a descriptive analysis was provided for the items comprising the tool's dimensions. Likewise, in order to adjust for the objective of this research, an analysis of variance (ANOVA) was performed to establish the statistically significant differences ($p < 0.05$) between tutorial interventions and teachers' attention to special needs divided by faculty. We accepted equal variances using the Sheffé post hoc test given that the groups were not balanced and, if equal variances were not accepted ($p < 0.05$), the Games-Howell post hoc test was used.

3. Results

3.1. Disability Information, Training, and Resources

The participating academic staff considered themselves moderately prepared to work with students with a disability on a general level ($\bar{x} = 4.99$, $s = 2.40$), whereas on a more personal level, they considered themselves to be adequately prepared to work with students with some kind of disability ($\bar{x} = 5.71$, $s = 2.66$). For the question of whether the academic staff considered it necessary for university teaching staff to be trained to deal with these students, they only considered training necessary for special needs teachers ($\bar{x} = 1.44$, $s = 1.17$). Regarding the availability of university

programs to support disabled students ($\bar{x} = 1.99$, $s = 0.97$), taking into account the three possible responses to this item (yes, no, and do not know), we observed a dichotomy between those who do not know if these programs exist and those who confirm they do. However, with respect to knowledge about the organisation of training activities for teachers to help prepare them for dealing with disabled students, a clear tendency toward 'no' was observed ($\bar{x} = 2.42$, $s = 0.694$). When their participation in training activities on a personal level increased in relation to the previous affirmation revealed that a great majority of the participants have never participated in this type of activity ($\bar{x} = 2.75$, $s = 0.559$). Finally, with reference to the type of training requested by university teachers, there was a high demand for training in design and adaptation of materials ($\bar{x} = 7.68$, $s = 2.58$) and training in the use of specific means and resources ($\bar{x} = 7.70$, $s = 2.54$) (Table 3).

Table 3. Descriptive statistics for information, training, and resources for disability (B).

	Mean \bar{x}	Standard Deviation (s)
In general, do you consider university teachers to be prepared to attend students with a disability? (B.1)	4.99	2.401
Personally, do you consider yourself prepared to attend to students with a disability? (B.2)	5.71	2.662
Do you think university teachers should be trained to attend to students with a disability (B.3)	1.44 *	1.169
Does your university have any specific service or program to support teachers who have students with a disability? (B.4)	1.99	0.968
Does your university organise training activities to prepare teachers to teach students with a disability? (Courses, workshops, etc.) (B.5)	2.42	0.694
Have you participated in any training activities about handling students with a disability? (B.6)	2.75	0.559
What type of training would you as a teacher request in order to improve the way you manage students with a disability? (B.7)		
Theoretical Training (B.7.1)	5.60	3.070
Practical training in methodology and teaching strategies (B.7.2)	7.65	2.557
Training in design and adaptation of materials (B.7.3)	7.68	2.583
Training in the use of specific means and resources (B.7.4)	7.70	2.538
Training in the understanding of alternative communication systems (B.7.5)	7.20	2.757
Training in the application of personalised attention strategies (B.7.6)	7.39	2.631

Items were assessed with a Likert scale of 1 (not ready) to 10 (fully prepared). * Polychotomous questions (1: yes, all teachers; 2: yes, but only special needs teachers; 3: yes, only tutors in the Orientation and Tutorial Action Plan).

ANOVA revealed the existence of statistically significant differences between various items that constitute the dimension on information, training, and resources for disability in terms of the faculty. Statistically significant differences were found regarding the question of whether the university teachers considered themselves prepared, in general terms, to deal with students with a disability (B.1) ($F = 5.260$, $p < 0.05$, $\alpha = 0.000$); whether they consider themselves prepared, on a personal level, to work with students with a disability (B.2) ($F = 7.763$, $p < 0.05$, $\alpha = 0.000$); whether the university they work in provides any services or specific support program for teachers who have disabled students (B.4) ($F = 7.380$, $p < 0.05$, $\alpha = 0.000$); and whether the university organises training activities for teachers with reference to the topic in question (B.5) ($F = 3.709$, $p < 0.05$, $\alpha = 0.001$). Lastly, regarding the type of training requested, although we obtained differences in all the sub-items, we can highlight theoretical training (B.7.1) ($F = 12.817$, $p < 0.05$, $\alpha = 0.000$), training in knowledge of alternative communication systems (B.7.5) ($F = 10.484$, $p < 0.05$, $\alpha = 0.000$), and training in design and adaptation of materials (B.7.4) ($F = 9.020$, $p < 0.05$, $\alpha = 0.000$).

Nevertheless, after completed the Scheffé and Games Howell post hoc tests, we observed the differences that exist among teaching staff belonging to different faculties. The majority of teachers considered university teaching staff to be relatively well prepared to teach students with a disability, particularly the academic staff belonging to the Faculties of Health Sciences and Social and Legal Sciences, as opposed to those belonging to the Faculty of Experimental Sciences, who presented a more negative perception (B.7.5). Regarding their perception of their own preparation to deal with students with a disability (B.7.6), the academic staff belonging to the Faculty of Experimental Sciences were the ones who maintained a more positive opinion, considering themselves to be adequately prepared together with the teaching staff from the Faculty of Social Work, who also considered themselves to be prepared, as do the academic staff from Faculty of Social and Legal Sciences.

As far as the availability of services or academic staff support programs for dealing with disabled students is concerned, teachers from the Faculty of Humanities and Educational Sciences were more aware, together with teachers from the Faculties of Social Work and Social and Legal Sciences. The teachers from the other faculties did not seem to be aware of the availability of these resources.

Lastly, in terms of academic staff demand for theoretical training in special needs attention processes, we can highlight the teaching staff from the Faculty of Health Sciences, whereas the teachers from Experimental Sciences were those who least demanded this type of training. Regarding practical training in methodology and teaching strategies, teachers from the Faculties of Health Sciences and Social and Legal Sciences most requested this type of training, whereas teachers from the Faculty of Experimental Sciences did not consider it to be relevant for their teaching practice. As far as the design and adaptation of materials is concerned, teachers from the Faculties of Health Sciences and Social Work presented a high demand for this type of training activity. Regarding training in the use of specific means and resources, the teaching staff from the Faculties of Experimental Sciences, Health Sciences, and Social Work expressed a greater concern for this type of training, as opposed to the teaching staff in the Linares Advanced Technical College (Table 4).

Table 4. Analysis of variance (ANOVA) divided by teacher faculty teachers in terms of information, training, and resources for disability.

	1	2	3	4	5	6	7	ANOVA	Post hoc Tests ^(a,b)
	\bar{x}								
B.1	5.27	4.57	5.29	3.3	4.97	5.48	6	0.000	1-4; 4-6; 4-7 (* a)
B.2	5.75	5.28	6	3.85	5.10	7.66	6.63	0.000	2-6; 4-6; 4-7; 5-6 (* a)
B.4	1.50	2.50	2.14	2.24	2.20	1.83	1.71	0.000	1-2; 1-4; 2-7 (* b)
B.5	2.13	2.60	2.14	2.48	2.30	2.55	2.66	0.001	1-2 (* a)
B.7.1	5.59	4.50	2.86	5.67	9.07	6.66	4.52	0.000	1-5; 2-5; 3-5; 4-5; 5-7; 6-2; 6-5; 6-7 (* b)
B.7.2	7.56	7.10	4.57	7.64	9.60	8.55	7.13	0.000	1-5; 2-5; 4-5; 6-5; 6-7 (* b)
B.7.3	7.83	6.43	5.71	7.55	9.47	9.34	7.27	0.000	1-5; 1-6; 2-5; 2-6; 4-5; 4-6; 5-7; 6-7 (* b)
B.7.4	7.39	6.62	8.14	7.82	9.47	9.34	7.23	0.000	1-5; 1-6; 2-5; 2-6; 4-5; 4-6; 5-7; 6-7 (* b)
B.7.5	6.84	7.20	3.43	6.97	9.40	8.79	6.02	0.000	1-5; 1-6; 2-5; 2-6; 4-5; 4-6; 5-7; 6-7 (* b)
B.7.6	6.64	7.03	7.86	6.88	9.67	7.72	7.48	0.000	1-5; 2-5; 4-5; 5-6; 5-7 (* b)

1 = Humanities and Educational Sciences; 2 = Jaen Advanced Technical College; 3 = Linares Advanced Technical College; 4 = Experimental Sciences; 5 = Health Sciences; 6 = Social Work; and 7 = Social and Legal Sciences.
 * Statistically significant differences between groups ($p < 0.05$). ^a Scheffé Test; ^b Games Howell Test.

3.2. Disabled Students

The European Space of Higher Education aims to implement reforms in higher education based on common key values. Through this process, the members of the European Union adapt their higher education systems, where the main objective is to increase staff and student mobility and to facilitate employability. Therefore, the teachers included in this study confirmed that they have had disabled students in class since the European Space of Higher Education was introduced ($\bar{x} = 1.16$, $s = 0.369$). As such, 41% of the participants confirmed they have worked with students with a motor or physical disability, followed by 24.7% who have had students with hearing difficulties in class, almost 20% have worked with students with a mental or visual disability and, lastly, 14% stated that they have never had any students with a disability.

In terms of when the university teaching staff became aware of the existence of disabled students in their classes, 44% stated that it was before teaching began, 20.3% claimed it coincided with when teaching started, 14.4% became aware of the situation as the course progressed, and 2.2% and 18.8% claimed it happened at the end of the course or not at all, respectively.

As far as who told them about the disabled student(s), 53.5% were informed by specific services at the university, 16.6% were informed by the students themselves, 15.1% stated that the cases were

apparent and they were not informed by anyone, and 14.8% have not had any students with a disability (Table 5).

Table 5. Frequency and percentage of disability types: how and when the information was provided and by whom.

Disability Type of the Students in Your Class (C.2)			Mean	Standard Deviation
			2.76	0.369
	Frequency	Percentage		
Motor or physical disability	111	41.0		
Visual disability	26	9.6		
Mental disability (bipolar disorder, schizophrenia...)	28	10.3		
Hearing disability	68	25.1		
None	38	14.0		
When Did You Become Aware That You Had Disabled Students in Your Class? (C.3)			Mean	Standard Deviation
			2.47	1.815
	Frequency	Percentage		
Before classes began	120	44.3		
When classes began	55	20.3		
During the course	39	14.4		
At the end of the course	6	2.2		
Never	51	18.8		
Who Informed You about the Existence of Disabled Students in Your Class (C.4)			Mean	Standard Deviation
			4.08	1.748
	Frequency	Percentage		
Nobody, it was evident	41	15.1		
The student themselves	45	16.6		
Specific University services	145	53.5		
There were no students with a disability	40	14.8		

In reference to whether the information allowed them to adapt their educational response to the disabled students (Table 6), 11% of the teaching staff stated “relatively so”, and 11.4% responded with “very little”. As opposed to the 10.7% who emphasised that the information helped them to an acceptable degree, 11.1% confirmed that it was of hardly any help at all, and 11% of the participants agreed that this information allowed them to adjust their educational response quite well, and 7% confirmed that it allowed them to adjust their response to a great extent.

In terms of having had students with a disability, 25.5% of the teachers claimed it to have been a satisfactory experience and 18.8% very satisfactory, whereas 12.9% and 11.1% considered it to be moderately and acceptably satisfactory, respectively; and 5.2% of the sample considered the experience between not at all satisfactory, not very satisfactory, or slightly satisfactory. Finally, 15.5% had not had to adapt their educational response and 11.1% had not had any students with a disability.

Table 6. Adaptation and satisfaction with the attention to students with a disability.

To What Extent Did the Information Available Allow You to Adapt Your Educational Response to the Needs of the Students with a Disability? (C.5)			Mean	Standard Deviation
			6.34	3.123
	Frequency	Percentage		
Not at all	8	3.0		
Hardly at all	30	11.1		
Very little	31	11.4		
A little	16	5.9		
Acceptable	29	10.7		
More or less	31	11.4		
Moderately	24	8.9		
Quite a lot	27	10.0		
Substantially	14	5.2		
A lot	19	7.0		
I haven't had to adapt anything	42	15.5		
If You Have Had Students with a Disability in Class, How Would You Rate the Experience? (C.6)			Mean	Standard Deviation
			7.89	2.209
	Frequency	Percentage		
Not at all satisfactory	4	1.5		
Quite unsatisfactory	9	3.3		
Slightly satisfactory	1	0.4		
Acceptably satisfactory	30	11.1		
More or less satisfactory	21	7.7		
Moderately satisfactory	35	12.9		
Satisfactory	69	25.5		
Quite satisfactory	21	7.7		
Very satisfactory	51	18.8		
I haven't had students with a disability	30	11.1		
Total	271	100.0		

After applying ANOVA and the post hoc tests (Scheffé and Games Howell), statistically significant differences between and within the groups were not found.

3.3. Classroom Interventions

The demand for the presentation of materials before the subject began tended to be very low ($\bar{x} = 3.53$, $s = 3.45$), whereas requests to adapt subject assessment were moderate ($\bar{x} = 5.60$, $s = 3.49$). Regarding the demand on teachers to adapt their methodology, we observed that the requests made by the students were low ($\bar{x} = 3.89$, $s = 2.94$), as was the request for non-obligatory class attendance ($\bar{x} = 2.44$, $s = 2.27$) and the possibility of entering and leaving the classroom during classes ($\bar{x} = 3.47$, $s = 2.97$). In terms of the adaptation of materials ($\bar{x} = 4.67$, $s = 3.61$) and the possibility of using technological devices to follow the explanations ($\bar{x} = 4.22$, $s = 3.64$), the results were low ($\bar{x} = 2.75$, $s = 0.559$). Finally, based on the type of training demanded by academic staff, we highlight the high demand for training in the design and adaptation of materials ($\bar{x} = 7.68$, $s = 2.58$) and training in the use of specific means and resources ($\bar{x} = 7.70$, $s = 2.54$). A greater demand was reported for accessible spaces and furnishings, for which teachers had received a moderate number of requests ($\bar{x} = 5.16$, $s = 3.67$) (Table 7). The academic staff affirmed providing adaptations for mental and visual disabilities is harder in class ($\bar{x} = 2.97$, $s = 1.33$), whereas the majority affirmed that they have not had to adapt for students with disabilities ($\bar{x} = 1.72$, $s = 0.448$).

Table 7. Descriptive statistics for the classroom interventions (D).

	Mean	Standard Deviation
What kind of demands have students with a disability generated? (D.1)		
Present subject materials beforehand (D.1.1)	3.53	3.453
Adapt assessment (D.1.2)	5.6	3.491
Adapt teaching methodology (D.1.3)	3.89	2.939
Making class attendance non-obligatory (D.1.4)	2.44	2.279
Allowing students to enter and leave the classroom during classes (D.1.5)	3.47	2.97
Adapting materials (size of print, spacing, including voice) (D.1.6)	4.67	3.606
Making available specific technological resources to be able to follow explanations (magnifying glass, recorder, Braille translator) (D.1.7)	4.22	3.642
Accessible classroom and furnishings (D.1.8)	5.16	3.676
Alternative communication systems (interpreter, bimodal language, Braille) (D.1.9)	3.89	3.536
To what extent have you had difficulties in having students with a disability? (D.2)		
Difficulties in making curricular adaptations (D.2.1)	2.86	2.581
Lack of adequate space for teaching (D.2.2)	1	0
Lack of special materials and programs (D.2.3)	2.51	2.596
Difficulties for students to attend class (D.2.4)	2.74	2.566
Difficulties in designing teaching support materials (D.2.5)	2.26	2.39
Lack of knowledge in handling technological resources (D.2.6)	3.04	2.869
Lack of knowledge of alternative communication systems (D.2.7)	2.99	3.002
Difficulties in adapting assessment to students (D.2.8)	3.95	3.538
For what type of disability do you think it is most difficult to adapt a class? (D.3)	2.97 *	1.323
Have you made any curricular adaptations for students with a disability? (D.4)	1.72 **	0.448

Items have a Likert scale of 1 (nothing ready) to 10 (fully prepared). *: Polychotomous questions (1: Physical or motor disability; 2: Visual disability; 3: Mental disability; and 4: Hearing disability). **: Dichotomous questions (1: Yes; 2: No).

ANOVA revealed the existence of statistically significant differences among various items that comprise the dimension on classroom interventions with disabled students in terms of the faculty of the teaching staff. Statistically significant differences were found regarding whether university teachers have received requests by students to alter the presentation of subject materials (D.1.1) ($F = 3.929$, $p < 0.05$, $\alpha = 0.001$); whether students requested an adaptation in the teaching methodology (D.1.3) ($F = 2.341$, $p < 0.05$, $\alpha = 0.032$); whether students with a disability were allowed to enter and leave the classroom during class (D.1.5) ($F = 4.537$, $p < 0.05$, $\alpha = 0.000$); and whether the adaptation of subject materials was requested (D.1.6) ($F = 3.905$, $p < 0.05$, $\alpha = 0.001$). Finally, the availability of technological resources (D.1.7) ($F = 3.479$, $p < 0.05$, $\alpha = 0.003$), accessible classes and furnishing ($F = 4.611$, $p < 0.05$, $\alpha = 0.000$), and the demand for alternative systems of communication (D.1.9) ($F = 14.256$, $p < 0.05$, $\alpha = 0.000$) were examined.

Moreover, after having completed the Scheffé and Games and Howell post hoc tests, we observed differences that have arisen between teachers from different faculties. Regarding the request to alter the presentation of subject materials, the teachers from the Faculties of Social Work, Experimental Sciences, and the Linares Advanced Technical College have received less requests compared to the rest. In the request for material adaptations, we observed some differences. The academic staff from the Faculties of Social and Legal Sciences, Health Sciences, and Linares Advanced Technical College received fewer requests compared to the academic staff from the Faculties of Social and Legal Sciences, Experimental Sciences, and the Linares Advanced Technical College. In terms of requests to be able to enter and leave the classroom during classes, the demand was moderate according to the teachers from the Linares Advanced Technical College and the Faculty of Social and Legal Sciences, with a moderate to high level of requests. In terms of adapting the materials, the teaching staff from the Linares Advanced Technical College stated that they have received many requests, followed by the teachers from the Faculties of Experimental Sciences and Health Sciences.

Regarding the demand for the use of technological resources by the students with a disability (D.1.7), differences existed among the teaching staff from the Faculty of Experimental Sciences ($\bar{x} = 6.27$) and those from the Linares Advanced Technical College ($\bar{x} = 1.17$); the former receiving more requests than the latter, who did not receive any at all. The same results were obtained for the requests

for alternative communication systems (D.1.9). Although the academic staff from the Faculty of Humanities and Educational Sciences hardly received any requests, the teachers at the Faculty of Experimental Sciences and the Linares Advanced Technical College received the most requests.

With respect to the difficulties teachers have encountered in working with students with a disability in their classes (D.1.6), we highlight that the teaching staff who have had most problems belong to the Faculty of Health Sciences ($\bar{x} = 5.83$), whereas those from the Faculty of Humanities and Educational Sciences ($\bar{x} = 3.73$) have had the least. As far as knowledge of alternative systems of communication (D.1.5), providing these systems has been more difficult for the Faculty of Humanities and Educational Sciences ($\bar{x} = 1.70$) than for the teachers from the Faculty of Experimental Sciences ($\bar{x} = 7.15$), the Jaen Advanced Technical College ($\bar{x} = 5.35$), and the Faculty of Health Sciences ($\bar{x} = 3.93$) (Table 8).

Table 8. ANOVA of the teacher faculty in terms of classroom interventions.

	1	2	3	4	5	6	7	ANOVA	Post hoc Tests (a,b)
	\bar{x}								
D.1.1	4.72	2.68	1.68	1.86	3.91	1.87	3.24	0.001	1-2; 1-5; 4-5; 5-7 (* b)
D.1.3	3.89	2.98	4.86	5.24	3.80	4.10	3.90	0.032	2-4 (* b)
D.1.5	3.13	2.63	5.71	4.30	2.53	3.21	4.81	0.000	2-7 (* a)
D.1.6	3.73	3.97	8.57	5.82	5.83	4.24	4.98	0.001	1-3; 1-4; 2-3; 3-4; 3-5; 3-6; 3-7 (* b)
D.1.7	3.94	3.47	1.14	6.27	3.97	4.10	4.79	0.003	1-2; 1-3; 2-3; 2-4; 3-4; 3-5; 3-6; 3-7 (* b)
D.1.8	4.83	3.82	6.43	5.7	3.93	6.62	6.63	0.000	2-6; 2-7; 5-6; 5-7 (* b)
D.1.9	1.70	5.35	3.00	7.15	3.93	3.00	3.38	0.000	1-2; 1-4; 1-7; 2-6; 4-5; 4-6; 4-7 (* b)
D.2.3	1.56	1.95	3.71	2.70	3.13	2.28	3.94	0.000	1-2; 1-5; 1-7; 2-5; 4-5; 6-5 (* b)
D.2.4	1.63	2.78	2.00	2.18	5.40	2.24	3.31	0.000	1-4; 2-3; 3-4; 3-5; 4-6 (* b)
D.2.5	1.61	2.38	1.14	3.55	3.07	1.62	2.13	0.001	2-6; 7-6 (* b)
D.2.7	1.78	2.47	1.14	3.42	5.67	4.86	2.44	0.000	1-3; 2-3; 3-4; 3-5; 3-6; 3-7; 5-6; 5-7 (* b)
D.2.8	3.22	4.70	1.29	4.30	5.50	4.62	2.75	0.001	1-2; 1-4; 4-6 (* b)

Items have a Likert scale of 1 (none) to 10 (a lot). 1 = Humanities and Educational Sciences; 2 = Polytechnic School in Jaén; 3 = Polytechnic School in Linares; 4 = Experimental Sciences; 5 = Health Sciences; 6 = Social Work; and 7 = Social and Legal Sciences. * Statistically significant differences between groups ($p < 0.05$). ^a Scheffé Test; ^b Games Howell Test.

4. Discussion

This study allowed us to determine how the teachers at the University perceive the integration of students with a disability, and what interventions they use to respond to their specific needs.

Based on the results obtained, participant subjects responded that they are not sufficiently prepared to work with disabled students. Academic staff belonging to the Faculties from Health Sciences, to Social and Legal Sciences, and Linares Advanced Technical College considered themselves to be more prepared than those belonging to the Faculty of Experimental Sciences, whose perception was lower. The results obtained coincide with the studies developed by Rodríguez-Martínez and Álvarez-Arregui [11], Sosa [13], Castellana and Sala [30], and Álvarez-Pérez and López-Aguilar [24], who concluded that university teachers need more preparation to be able to work with disabled students [31]. Nevertheless, teachers had a positive perception regarding the inclusion of students with disabilities in university classrooms [32–34]. However, university teachers do not train or attend training activities related to special needs.

Based on the type of training requested by university to improve their attention to students with a disability, we found a high demand for training in the design and adaptation of materials and training in the use of specific means and resources, which were demands also found in the studies undertaken by Hadjidakou and Hartas [14] and Álvarez-Pérez and López-Aguilar [24].

Regarding whether the university has support services or programs for the teaching staff for working with students with special needs, the teachers from the Faculty Health Sciences were more informed about their availability, together with the teachers from the Faculties of Social Work and Social and Legal Sciences. The other faculties tended to not know what resources were available.

Finally, teachers wanted theoretical training in attention processes, particularly those belonging to the Faculty of Health Sciences, whereas teachers from the Faculty Experimental Sciences had a lower

demand for this type of training, perhaps due to the fact that it is the faculty with the lowest number of disabled students. Regarding training in methodology and teaching strategies, teachers from the Faculties of Health Sciences and Social and Legal Sciences had a higher demand compared with the teachers from the Faculty Experimental Sciences who did not consider this type of training relevant to their teaching practices. In terms of design and adaptation of materials, the teachers from the Faculties of Health Sciences and Social Work had a high demand for this type of training activity. Teachers from the Faculties of Experimental Sciences, Health Sciences, and Social Work were most concerned about receiving training in the use of specific means and resources, as opposed to the teachers from the Linares Advanced Technical College. We believe that the differences in the perception of the academic staff regarding their preparation to attend students with disabilities may be due to several factors. Firstly, the number of students with disabilities who access university studies and its prevalence in each of the faculties may affect this perception, as observed in the Linares Advanced Technical College. The academic staff of the Faculties of Social and Legal Sciences, Health Sciences, Humanities, and Education Sciences confirmed having students with mostly motor or visual disabilities, so the type of disability in a faculty may affect the perception. Furthermore, it may be due to the basic training of the academic staff, who, depending on their specialty, have acquired knowledge and skills that allow them to be more prepared in these situations, such as the academic staff in Health Sciences, Social and Legal Sciences, and Social Work.

This study highlights the need for appropriate training for special needs processes to enable university teachers to become involved in the inclusive model defended by Stainback and Stainback [35], Ainscow [36], and Loreman et al. [37].

Author Contributions: All authors participated in data collection. A.M.O.C., M.A.M., and M.J.C.R. analysed the data. All authors contributed to data interpretation of statistical analysis. M.J.C.R. and A.M.O.C., wrote the paper with significant input from M.A.M. All authors read and approved the final manuscript.

Funding: This study was financed by PID18_201617 in the call for the Plan for Innovation and Incentives for Good Teaching Practices at the University of Jaen 2016–2019. This project was endorsed by the Andalusian Agency of Knowledge.

Conflicts of Interest: The authors declare no conflict of interest.

References

1. United Nations (UN). *Programa de Acción Mundial para las Personas con Discapacidad*; Aprobado por la Asamblea General de las Naciones Unidas en Resolución 37/52, en Diciembre de 1982; United Nations: New York, NY, USA, 1983.
2. United Nations (UN). *Normas Uniformes Sobre la Igualdad de Oportunidades para las Personas con Discapacidad*; Resolución Aprobada por la Asamblea General, el 20 de Diciembre de 1993; United Nations: New York, NY, USA, 1993.
3. Fernández, J.M. Formación en el ámbito de la diversidad: Capacidades y competencias docentes para la inclusión del alumnado en la educación superior. In *Nuevas Perspectivas de la Intervención Social y Educativa con Grupos Vulnerables*; Ortiz, L., Coords, L.A., Eds.; CNAE Editorial: Almería, Spain, 2014; pp. 225–239. ISBN 978-84-16123-52-0.
4. Boyle, C.; Sharma, U. Inclusive education—Worldly views? *Support Learn.* **2015**, *30*, 2–3. [CrossRef]
5. Casanova Rodríguez, M.A. *Educación Inclusiva: Un Modelo de Futuro*; Wolters Kluwer: Madrid, Spain, 2011; ISBN 9788499870304.
6. Ahmmed, M.; Sharma, U.; Deppeler, J. Variables affecting teachers' attitudes towards inclusive education in Bangladesh. *J. Res. Spec. Educ. Needs* **2012**, *12*, 132–140. [CrossRef]
7. Chiner, E. Las Percepciones y Actitudes del Profesorado Hacia la Inclusión del Alumnado con Necesidades Educativas Especiales Como Indicadores del Uso de Prácticas EDUCATIVAS Inclusivas en el Aula. Ph.D. Thesis, University of Alicante, Alicante, Spain, 2011. Available online: <http://hdl.handle.net/10045/19467> (accessed on 13 October 2017).
8. Swain, K.D.; Nordness, P.D.; Leader-Janssen, E.M. Changes in preservice teacher attitudes toward inclusion. *Prev. Sch. Fail. Altern. Educ. Child. Youth* **2012**, *56*, 75–81. [CrossRef]

9. Duk, C.; Murillo, J. Claves de la formación de profesores para escuelas inclusivas. *Rev. Latinoam. Educ. Incl.* **2010**, *4*, 11–12. Available online: http://www.rinace.net/rlei/numeros/vol4-num2/Revista_Inclusiva_Vol4_N4_circ2.pdf#page=11 (accessed on 2 September 2017).
10. Clore, G.L.; Jeffery, K.M. Emotional role playing, attitude change, and attraction toward a disabled person. *J. Pers. Soc. Psychol.* **1972**, *23*, 105–111. [CrossRef] [PubMed]
11. Rodríguez Martín, A.; Álvarez Arregui, E. Estudiantes con discapacidad en la universidad. Un estudio sobre su inclusión. *Rev. Comput. Educ.* **2014**, *25*, 457–479. [CrossRef]
12. Gairín, J.; Muñoz, J.L. La acción tutorial en los estudiantes universitarios con discapacidad. *Educación* **2013**, *21*, 71–90. Available online: <http://riberdis.cedd.net/handle/11181/4812> (accessed on 20 October 2017).
13. Sosa, L.A. Necesidades Formativas del Profesorado Universitario de la UNPHU, en Relación con la Atención a la Diversidad. Ph.D. Thesis, University of Sevilla, Sevilla, Spain, 2015. Available online: <https://idus.us.es/xmlui/bitstream/handle/11441/36595/TESIS%20LESBIA.pdf?sequence=1&isAllowed=y> (accessed on 5 October 2017).
14. Hadjikakou, K.; Hartas, D. Higher education provision for students with disabilities in Cyprus. *High. Educ.* **2008**, *55*, 103–119. [CrossRef]
15. Suriá, R.; Villegas, E.; Rosser, A.M. Discapacidad e integración en el ámbito universitario. In *Investigación e Innovación Educativa en Docencia Universitaria. Retos, Propuestas y Acciones*; Universidad de Alicante: Alicante, Spain, 2016; pp. 1034–1044. ISBN 978-84-617-5129-7.
16. Luque, D.J.; Rodríguez, G. Alumnado universitario con discapacidad: Elementos para la reflexión psicopedagógica. *REOP* **2008**, *19*, 270–281. Available online: <http://www.redalyc.org/html/3382/338230780002/> (accessed on 5 April 2018).
17. Moriana, J.A.; Herruzo, J. Estrés y burnout en profesores. *Int. J. Clin. Health Psychol.* **2004**, *3*, 597–621. Available online: <http://www.redalyc.org/html/337/33740309/> (accessed on 13 December 2017).
18. Rillotta, F.; Nettelbeck, T. Effects of an awareness program on attitudes of students without an intellectual disability towards persons with an intellectual disability. *J. Intellect. Dev. Dis.* **2007**, *32*, 19–27. [CrossRef] [PubMed]
19. Salanova, M.; Peiró, J.M.; Schaufeli, W.B. Self-efficacy specificity and burnout among information technology workers: An extension of the job demand-control model. *Eur. J. Work Organ. Psychol.* **2002**, *11*, 1–25. [CrossRef]
20. Damm, X. Representaciones y actitudes del profesorado frente a la integración de Niños/as con Necesidades Educativas Especiales al aula común. Representations and Attitudes of teachers in front of Integration of children with Special Needs. *Rev. Latinoam. Educ. Incl.* **2009**, *3*, 25–35. Available online: http://sid.usal.es/idocs/F8/ART11920/representaciones_y_actitudes.pdf (accessed on 2 September 2017).
21. Dendra, M.R.; Durán, B.R.; Verdugo, M.A. Estudios de las variables que afectan a las actitudes de los maestros hacia la integración escolar de niños con necesidades educativas especiales. In *Anuario Español e Iberoamericano de Investigación en Educación Especial*; CEPE: Madrid, Spain, 1991.
22. Durán, M.A.; Extremera, N.; Rey, L. Burnout en profesionales de la enseñanza: Un Estudio en educación primaria, secundaria y superior. *Rev. Psicol. Trab. Organ.* **2001**, *17*, 45–62. Available online: https://www.researchgate.net/publication/253234568_Burnout_en_profesionales_de_la_ensenanza_un_estudio_en_Educacion_primaria_secundaria_y_superior (accessed on 22 February 2017).
23. García Lara, G.A.; Hernández Ortiz, S. Actitudes hacia la discapacidad de jóvenes y adultos de Chiapas. *Univ. Psychol.* **2011**, *10*, 817–827. Available online: <http://revistas.javeriana.edu.co/index.php/revPsycho/article/viewFile/594/1174> (accessed on 10 January 2018).
24. Álvarez-Pérez, P.R.; López-Aguilar, D. Atención del profesorado universitario a estudiantes con necesidades educativas específicas. *Educ. Educ.* **2015**, *18*, 193–208. [CrossRef]
25. Bisquerra, R. *Métodos de Investigación Educativa: Guía Práctica*; Consular Electronic Application Center (CEAC): Barcelona, Spain, 2004; ISBN 84-329-9240-2.
26. García, J.L. *Métodos de Investigación en Educación. Investigación Cualitativa y Evaluativa*, 1st ed.; Universidad Nacional de Educación a Distancia (UNED): Madrid, Spain, 2003; ISBN 978-84-362-4926-2.
27. Martínez, R.A. *La investigación en la Práctica Educativa: Guía Metodológica de Investigación para el Diagnóstico y Evaluación en los Centros Docentes*; Centro de Investigación y Documentación Educativa (CIDE)/Ministerio de Educación (MEC): Madrid, Spain, 2007; ISBN 9788436944402.
28. Murray, R.S. *Estadística*; McGraw-Hill: Santa Fe, México, 1991; ISBN 84-7615-562-X.

29. Prieto, G.; Delgado, A.R. Fiabilidad y validez. *Papeles Psicólogo* **2010**, *31*, 67–74. Available online: <http://www.redalyc.org/pdf/778/77812441007.pdf> (accessed on 5 October 2017).
30. Castellana, M.; Sala, I.S. La inclusión de los estudiantes con discapacidad en la universidad: Un reto para la universidad española en el nuevo espacio europeo de la educación superior. *Aloma* **2006**, *18*, 209–227. Available online: <http://www.raco.cat/index.php/Aloma/article/view/100812/154531> (accessed on 10 September 2017).
31. Paz, E.J. La formación del profesorado universitario para la atención a la diversidad en la educación superior. *IE Rev. Investig. Educ. REDIECH* **2018**, *9*, 67–82. Available online: http://www.rediech.org/ojs/2017/index.php/ie_rie_rediech/article/view/108/154 (accessed on 30 April 2018).
32. Gelbar, N.; Madaus, J.; Lombardi, A.; Faggella-Luby, M.; Dukes, L. College Students with Physical Disabilities: Common on Campus, Uncommon in the Literature. *Phys. Disabil. Educ. Relat. Serv.* **2015**, *34*, 14–31. [[CrossRef](#)]
33. Martins, M.; Borges, M.L.; Gonçalves, T. Attitudes towards inclusion in higher education in a Portuguese university. *Int. J. Incl. Educ.* **2018**, *22*, 527–542. [[CrossRef](#)]
34. Moriña, A.; Carballo, R. University teaching staff and inclusive education: Responding to their training needs. *Psicol. Esc. Educ.* **2018**, *22*, 87–95. [[CrossRef](#)]
35. Stainback, S.; Stainback, W. *Aulas Inclusivas: Un Nuevo Modo de Enfocar y Vivir el Currículo*; Narcea Ediciones: Madrid, Spain, 1999; ISBN 84-277-1247-2.
36. Ainscow, M. *Desarrollo de Escuelas Inclusivas*; Narcea: Madrid, Spain, 2014; ISBN 84-277-1323-1.
37. Loreman, T.; McGhie-Richmond, D.; Kolupayeva, A.; Taranchenko, O.; Mazin, D.; Crocker, C.; Petryshyn, R. A Canada-Ukraine collaborative initiative for introducing inclusive education for children with disabilities in Ukraine: Participant perspectives. *Sch. Eff. Sch. Improv.* **2016**, *27*, 24–44. [[CrossRef](#)]



© 2018 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<http://creativecommons.org/licenses/by/4.0/>).