

# **Inclusive pedagogy in Health Sciences Spanish faculties: educational resources and methodologies for all students**

## **Abstract**

This article presents the educational practices carried out by Spanish faculty members of Health Sciences to attend to student diversity. A total of 19 faculty members of this area of knowledge suggested by their students with disabilities participated in the study. Following a qualitative methodology, individual semi-structured interviews were used for the gathering of data. The collected data were analysed through an inductive system of categories and codes. The results show the learning resources that the participants employed to allow all students to make use of them, as well as the teaching methods and strategies that they applied to achieve the active participation and learning of every student. Moreover, the participants commented on the reasonable adjustments that they made when they had a student with disabilities in their classrooms. Finally, the results were compared to those of other analogous studies, highlighting the keys that could help other faculties members to develop more inclusive practices.

## **What is known about this topic and what this paper adds?**

### **What is known**

- Students with disabilities encounter many difficulties related to the faculty members at the university
- Inclusive educational practices are characteristic of Education faculties, with a lack of inclusive methods and resources in Health faculties
- Many studies point to the need to use flexible and varied methods and resources based on universal learning design to meet the needs of all learners

## **What this paper adds**

- This study shows evidence that there are Health Sciences faculty members who develop inclusive pedagogy
- This study shows that the development of an inclusive pedagogy does not depend on the area of knowledge, but on the interest of faculty members in the learning of all students
- This study offers a series of practices and teaching methods and resources that can serve as examples for other teachers who want to develop a more inclusive practice

**Keywords:** Inclusive Pedagogy; faculty members; Health Sciences; students with disabilities; educational strategies.

## **Introduction**

All persons with disabilities have the right to an inclusive Higher Education (HE) based on equal opportunities (United Nations, 2006). Recognising this as a fundamental principle, the number of students with disabilities in Spanish universities has increased in recent years, as well as in many other countries (Universia Foundation, 2018). Specifically, this foundation shows that, in the area of Health Sciences, 21.7% of Spanish students with disabilities are undergraduate, 15.8% study post-graduate or master's degrees and 21.9% are PhD students.

Many of these students with disabilities face multiple barriers in their university life due to the lack of support, resources and adjustments to respond to their needs in the classrooms (Butler, Holloway, Marriott, & Goncu, 2017; O'Byrne, Jagoe, & Lawler, 2019). In fact, some of them drop out of university in the first year, and others manage

to obtain their degrees, although with little success (Weis, Dean, & Osborne, 2016). In view of this situation, institutions must implement the necessary adjustments to protect the right of these people to quality education (Alzate, 2018; Vlachou & Papananou, 2018).

Nevertheless, the most relevant difficulties that students with disabilities encounter in the university context include those found in the classrooms (Madaus, Scott, & McGuire, 2003). The lack of adjustments in teaching methodologies, educational resources and the evaluation systems is a barrier that hinders, to a great extent, the learning of students with disabilities (Butcher, Sedgwick, Lazard, & Hey, 2010). Despite the fact that a large number of universities contemplate these adjustments in their regulations as mandatory (Savvidou, 2011), in reality these actions usually depend on the good will and personal concern of faculty members (Gunersel & Etienne, 2014; Stes & Van Petegem, 2015). In fact, faculty members represent one of the most important barriers to these students (Moriña, Cortés-Vega, & Molina, 2015).

There are different factors underlying the choice of faculty members to refuse to make the reasonable adjustments that the students need. One of these elements is the lack of specific training to respond to the needs derived from disability (Kaur, Noman, & Nordin, 2017; Weis et al., 2016). Moreover, faculty members admit to lack the sufficient knowledge about inclusive practices to attend to students with disabilities (Black, Weinberg, & Brodwin, 2014; Langørgen, Kermit, & Magnus, 2018). However, the attitude of faculty members and their willingness to help their students, as well as the use of inclusive methodologies, are critical factors that help students achieve their academic success (Becker & Palladino, 2016; Collins, Azmat, & Rentschler, 2018).

In some cases, faculty members consider that modifying the curriculum or the way of teaching to facilitate the learning and inclusion of these students in the education

system is not their responsibility (Elbeheri, Everatt, Theofanides, Mahfoudhi, & Al Muhareb, 2018). Fortunately, a many faculty members develop inclusive teaching strategies that promote and allow the participation of all students (Kumar & Wideman, 2014). They offer different evaluation and participation options, and make adjustments to the educational materials when a student requires it (Jansen, Petry, Ceulemans, Noens, & Baeyens, 2017; Yvonne, 2020).

It is necessary to carry out exhaustive studies on educational strategies to shift toward inclusion, following the principles of inclusive pedagogy and Universal Design for Learning (UDL) (Schelly, Davies, & Spooner, 2011). Inclusive pedagogy emerges as an educational approach that recognizes the differences of all students, avoiding the categorization of those with disabilities as different. It is based on the active participation of all students, who have an active role and voice in choosing how, when, where and whom they want to work with (Florian & Black-Hawkins, 2011). Similarly, the UDL is based on the flexibility of the curriculum, offering everyone what they need through different options for information representation, participation and motivation, taking into account the differences of all students (CAST, 2018; Kumar & Wideman, 2014).

Usually, inclusive pedagogical actions, as well as understanding attitudes toward students with disabilities, are associated with faculty members in the field of Education (Vasek 2005). However, the literature shows that faculty members of other fields of knowledge are equally inclusive (Carballo, Cotan, & Spinola, 2019; Savvidou, 2011).

The area of interest to the present work, that is, Health Sciences, has often been considered to be the one which poses the greatest difficulties to students with disabilities, along with other areas, such as technical studies (Horkey, 2019; Frank, McLinden, & Douglas, 2019). These attitudes of Health Sciences faculty members are

frequently influenced by their perspective based on the medical model of disability (Anderson, Smith, & Thorpe, 2010; Oliver, 1988), rather than on the social model (Ashcroft & Lutfiyya, 2008). Moreover, the participation of faculty members of these research areas in studies about disability or in diversity training programs is lower (Carballo & Moriña, 2017).

There are few studies about the inclusion experiences of university students with disabilities in degrees of Health Sciences. Wilson et al. (2014) conducted a research with students with disabilities during their first weeks in the university, showing the difficulties they encountered in their access to resources, their relationships with their classmates and the evaluation standards. Nevertheless, Williams, Demery, Davies and Harding (2019) explained the reasonable adjustments for clinical examinations. Moodley and Mchunu (2019) showed the difficulties in the curriculum of the Nursing degree and in the making of reasonable adjustments by the faculty members. Moreover, Ashcroft et al. (2008) provide a series of recommendations to improve the access of students with disabilities and to attend to their needs. Other authors, such as Aaberg (2010) and Ashcroft and Lutfiyya (2013), explored the attitudes of faculty members in this area toward people with disabilities.

In this article, we present the partial results of a research project whose objective was to know the inclusive educational practices that faculty members carried out to achieve the participation and academic success of all their students, including those who have a disability. Three research questions guided this analysis:

1. What teaching methods and strategies do faculty members use to carry out an inclusive pedagogy?
2. What are the teaching resources that faculty members use to respond to student diversity?

3. Do faculty members make reasonable adjustments to their methods and materials to attend to the needs of their students with disabilities? What kind of adjustments?

## **Method**

The aim of the research project entitled “*Inclusive pedagogy in the university: faculty members’ narratives*” (EDU2016-76587-R, IP. Anabel Moriña, 2016-2020) was to explore the different dimensions of inclusive pedagogy in Spanish faculty members. On the one hand, we analyzed the beliefs and knowledge of faculty members about people with disabilities and inclusion processes in the university context, and, on the other hand, the educational designs and actions that they carried out in the classroom to ensure the participation of all their students (Florian, 2014; Gale & Mills, 2013).

Specifically, this article presents the results related to the educational actions that health sciences faculty members carried out to respond to student diversity.

## ***Participants***

The sample recruitment was carried out in two phases. In phase I, we contacted the Student Disability Services of the 10 participating Spanish universities. These services acted as intermediaries and emailed all the students with disabilities registered in each university to give them information related to the project and to ask for their collaboration. Separately, the snowball technique was employed (Dusek, Yurova, & Ruppel, 2015). Through this method, different members of the university community sent this information to other students with disabilities so that they could collaborate.

The students were asked to propose faculty members that they considered as ‘inclusive faculty members’ who helped them to overcome barriers. They were given a list of characteristics of the profile of a faculty member who develop an inclusive pedagogy, based on studies such as that of Moriña et al. (2015), where students with

disabilities indicated the characteristics of the ideal faculty. Some of these characteristics were the following: he/she believes in the possibilities of all students; uses methods that promote activity and participation; shows concern for the learning of the students; is flexible and willing to help; motivates the students; establishes a close relationship; makes the students feel like they are part of the class. In this way, students of the 10 participating universities provided information about faculty members who had positively marked their academic experience, stating the reasons for their choice. They also provided the e-mails of the proposed faculty members.

In phase II, the research team contacted these faculty members via email and/or phone call to ask for their participation in the study. The research team explained to the proposed faculty members the purposes of the research, how and why they had been selected by their students with disabilities, and asked them to participate in the study. A total of 119 faculty members from 10 Spanish universities and all areas of knowledge participated in the study (Arts and Humanities, Science and Engineering, Health Sciences, Social and Legal Sciences and Education).

With respect to Health Sciences, 27 faculty members of this knowledge area were proposed by the students. Eight of them rejected the proposal, stating that they either had no spare time or were not available. Finally, 19 faculty members of this area from four different universities accepted the invitation and participated in the study. They belonged to Nursing, Medicine, Pharmacy and Physiotherapy specialities. Table 1 shows the profile of the participants.

Table 1.

*Participant profile (n=19).*

Participants		n	%
Age	30-40	4	21.1%
	41-50	5	26.3%
	51-60	9	47.3%
	+61	1	5.3%
Years of teaching experience	0-10	3	15.8%
	11-20	7	36.8%
	21-30	6	31.6%
	31-40	3	15.8%
Professional position	Associate Lecturer	3	15.8%
	Assistant Honorary Professor	1	5.3%
	Assistant Professor	2	10.5%
	Lecturer	4	21.1%
	Senior Lecturer	4	21.1%
	Professor	5	26.3%
Faculty	Nursing	8	42.1%
	Medicine	7	36.8%
	Pharmacy	2	10.5%
	Physiotherapy	2	10.5%

### ***Data gathering instruments***

The instrument used for the data gathering was the individual semi-structured interview. Such instrument was based on 4 analytical dimensions of inclusive



pedagogy: knowledge, beliefs, designs and actions (Florian, 2014; Gale & Mills, 2013).

In this article, we present the results obtained about designs and actions, specifically showing information relative to training methods and educational resources. Some of the questions that guided the interview were the following: Do you use different resources to teach the contents? Why? How do you provide the students with the resources to be used in the classroom? Do you use virtual teaching tools and/or other technological resources? What teaching methodology do you employ? What methods do you consider to be most effective for all students to learn, and why? And for students with disabilities? Do you make any modifications to the subject when you have a student with a disability? What kind of adjustments have you made?

The interviews were carried out individually, each guided by one member of the research team. Twelve of the interviews were conducted face-to-face, 3 via Skype and 4 via phone call. All the interviews were recorded in audio and later transcribed for the data analysis.

### ***Data analysis***

A structural analysis of all the information gathered in the interviews was conducted through an inductive system of categories and codes (Miles & Huberman, 1994). The research team was organized in pairs to perform the analysis. Then, the entire team performed a further analysis to categorize those verbatims of doubtful classification. The second analysis was conducted using MaxQDA12 software, which allowed organizing and relating the gathered data. For the analysis of the information presented in this article, three categories were selected: educational resources, methodological strategies and reasonable adjustments for students with disabilities. In a third analysis of these categories, carried out by the authors of this article, new codes were generated to analyse the information more thoroughly. Table 2 shows those

categories and codes used for the analysis of the information provided by Health Sciences faculty members.

Table 2.

*Categories and codes system for the data analysis*

Category	Code
Resources	Sharing moment
	Variety
	Type/Format
	Technological resources
Methodologies and strategies	Variety
	Active methods
	Team work/cooperative learning
	Theory-practice combination
	Evaluation
	Continuous feedback
	Format modifications
Reasonable adjustments for students with disabilities	Spaces
	Use of technological tools
	Communication strategies
	Modifications to the evaluation
	Tutorials

***Ethical considerations***

The participants received information about the objectives and main elements of the study. An informed consent document guaranteed the right to anonymity and clarified that participation was totally voluntary. In this document the participants were given the right to revise all the reports of the results and modify or remove any piece of information. Ethical approval was obtained from the Spanish Ministry of Economy and Competitiveness.

**Results**

The results were organized in two sections. Firstly, we present the educational resources that the participants used in their teaching and the type of adjustments they made when a student required it. Secondly, we presented the teaching methods carried out by the faculty members to improve the participation and learning of all their students, and the reasonable adjustments they made to the methodologies.

***Multiple teaching resources: educational opportunities for all***

The type of teaching resources used in the classroom was an essential element to the participants. Most of them facilitated the didactic material in advance to the lectures to allow their students to work on it and know what they were going to study at any given time.

*It is beneficial for students to have their notes and materials in advance, because many students bring them in print and take notes in the presentation itself.*

*(Faculty 9, Medicine).*

However, others stated that they only provided the students with those theoretical materials that did not reveal the future practical activities, with the aim of preventing discouragement toward the lecture dynamics. Specifically, they aimed at surprising their students and maintaining their motivation with the use of original and entertaining resources.

*For example, I create crosswords about the functions of the nervous system. If I provide it in advance, I would take that part of motivation and curiosity from the students (Faculty 8, Physiotherapy).*

All the participants used written materials, such as texts, books, manuals, articles and PowerPoint presentations. Moreover, they considered it important to complement those materials with other more attractive resources that facilitated the reception of information through different ways. They frequently used current videos and news from

the media. They stated that these resources made the lectures more attractive and, in turn, helped the students to link the contents of the subject to reality.

*The students need to see that what they are studying will be useful and that it is present in the world they live in. They need to see that what they are learning will be useful in the professional practice (Faculty 7, Physiotherapy).*

Another key aspect corresponded to physical and manipulative resources that served as real examples of what the students learned in the theoretical lectures. In this way, through experimentation and touch, they managed to get all their students, with and without disabilities, to properly understand the contents of the subject matter. In the case of students with a visual disability, this type of resources turned out to be fundamental for their understanding of the subject matter.

*When I teach them molecular geometry, I bring my molecular kit in the pocket of my lab coat. I bring it assembled and I give it to the students in the first row so they can examine it and pass it around to the other students. There are many students with problems regarding spatial vision, which is so important in chemistry. (Faculty 2, Pharmacy).*

Lastly, they highlighted the use of technological tools, such as the virtual platform and discussion forums. The participants used the virtual platform as a tool for sharing the contents in different formats. In this way, any type of material was available both in the digital format in the platform and printed in the copy center of the faculty.

*Everything is available to them in the platform. However, since I know there are students who have difficulties using the platform, I also leave the material in the copy center (Faculty 8, Physiotherapy).*

Discussion forums were used by the participants as a resource to keep the communication between them and the students and to work cooperatively outside of the

classroom. They used the forums at the end of the blocks of contents to guarantee that all students faced the exams with confidence through a forum of questions and discussion among them.

*I have a discussion forum about general topics, and also a forum for each block and sub-topic. Thus, when I finish a thematic block, or even before the exam, they ask me from that thematic block and they all revise those answers (Faculty 10, Medicine).*

### ***Different resources for students with disabilities?***

The faculty members stated that the resources for students with disabilities were not different, although in some cases certain resources required some adjustments. For instance, they provided the material of the subject in different formats (printed texts, digital materials, subtitled videos, images...).

Regarding the digital materials, the participants also provided them in different formats: Word, pdf, PowerPoint, etc. Thus, they allowed each student to choose the one that best suited them, thereby making the text compatible with assistive technology (e.g., screen readers), or to edit it based on their needs (for instance, changing colours or font size).

*I did not have to adjust the slides for a person with visual impairment. She simply asked for a different format, and then, instead of providing the material to her in PDF, I gave it to her in PowerPoint via email, and she increased the font size as much as she needed (Faculty 1, Pharmacy).*

The faculty members also highlighted the importance of New Technologies. To facilitate the teaching-learning process, they informed the students about the existence of different accessible resources, such as the virtual assistant of smartphones, voice recognition systems and screen readers.

*The ones who really benefit from TICs are the students who have some kind of disability. When I do not have enough time to read, I tell my iPhone to read the website to me. The students need to know that this possibility is available to them and we have to use this kind of resources (Faculty 4, Nursing).*

### ***Methods and strategies for a real participation***

One of the methods that these faculty members used was the master lecture. To increase participation, in some cases they proposed some topics to be presented by the students themselves. Their master lectures were always complemented with other more participatory methodologies (debates, resolution of clinical cases, problem-based learning, presentations, practical activities, group assignments, games...). Although the participants did not entirely agree with traditional methods, they considered that these were necessary to explain certain contents of the subject.

*I try to make the theoretical part as entertaining as possible, and once the topic has been covered, I pose problems related to it. I think that both the application of theory and the resolution of problems are fundamental and complementary (Faculty 1, Pharmacy).*

Faculty members emphasized that discussions allowed the participation of all the students and promoted the development of their reflective capacity about a theme. The discussion activities were carried out from texts provided by the faculty member, which helped to elaborate the different points of view about a topic.

*They discuss in pairs one-on-one, or by groups. Initially, they do not know what perspective they have to defend. They have to study the literature and the arguments for the different alternatives, and I do not tell them the views they have to defend until the last moment. (Faculty 16, Nursing).*

Another strategy used by faculty members was to get students to give presentations in the classroom. These activities allowed the students to realize whether they knew enough about a topic to be able to present it to others. In order to prevent students from feeling threatened when they gave their presentations before all their classmates, it was fundamental to downplay the presentation itself and make them feel comfortable so that they became more confident.

*During the presentations, I try to change the situation so that it becomes more pleasant and as little threatening as possible by combining it with a sense of humour. They need to see that you are there to help them, not to make them have a hard time (Faculty 17, Medicine).*

Other faculty member used play-based methodologies. They used quizzes with the aim of getting the students to reflect, as a group, on the contents of the subject. The students were shown the importance of their participation rather than the correct answers.

*In my class, nobody remains quiet, because I always tell them that they have to get involved and make mistakes. So, when I ask a question, I use green cards for correct answers and red cards for wrong answers. This way I force them all a little bit to reflect and think (Faculty 3, Nursing).*

Cooperative learning was another strategy used by the participants. The groups were usually small and had a leader that managed the organization of the assignments and made sure that all the objectives posed in each lecture were met.

*In small groups they work, talk, visualize and identify the bones..., etc. I always like having someone leading each table, someone who makes sure that the team meets the objectives posed and takes care of the climate of the group (Faculty 7, Physiotherapy)*

The clinical case was another complementary strategy to the master lectures. Despite its fictional character, through these cases they analyzed and reasoned about a specific pathology and established the steps to follow in order to obtain a diagnosis or decided how to treat a disease.

*With the clinical cases they remember the theory and what they have seen in the lectures. Moreover, they think about how they would act in a real case (Faculty 11, Medicine).*

Hospital practices constituted another necessary methodological approach. Through these, the students clearly understood the applicability of the theoretical contents tackled in the lectures in a real case. At the same time, they developed the abilities and skills they would have to apply in the future.

*When we go to a hospital, I explain to them in five minutes what I would tell them in one hour in the lecture room, and they learn it immediately (Faculty 11, Medicine).*

Some faculty members also used activities that helped to self-evaluate the learning of the students. They considered that these helped the students to better assimilate the knowledge learned, since such activities forced them to reason and to establish a clinical judgement through them.

*The most effective activities are those that allow a self-assessment, because I use an image which is accompanied by questions. Thus, the students must answer, and they learn to see and diagnose (Faculty 10, Medicine).*

### ***Adjustments to the methods for students with disabilities***

The adjustments the participants made for students with disabilities were minimal, such as letting students with visual impairment to record the lectures in audio, talking slower, or standing in front of the students to let them read their lips or receive



the information more easily.

Regarding evaluation, the participants highlighted that the contents to be evaluated were always similar for all the students, although they made adjustments when it was necessary. Such adjustments consisted in prolonging the time to carry out the evaluation activities and tests, and changes to the exam format (written, online, oral, test, larger font size, etc.).

*It is the same for all students; what changes is the adaptation I need to make in each case. The exam is the same; what changes is the fact that I may need to provide it in a digital form, with a larger font size or through an oral exam (Faculty 6, Nursing).*

Lastly, the participants highlighted tutorials as a support for students with disabilities. For example, in the subjects in which images were used as key elements, the faculty members stated that students with disabilities had some difficulties and they used the tutorials to solve them. This attention was not considered by any of the participants as a special treatment toward some students, since the faculty members were willing to make all the necessary changes for any student who required it.

*I usually talk to them and ask them to come to a tutorial. I see what needs they have, but I have never done this directly; I always try to get that information indirectly from them, so that they do not think I am doing something special for them (Faculty 2, Pharmacy).*

In short, the educational practices and resources used by these faculty members were characterized by being flexible and open to change to allow for the participation of all students, following principles of inclusive education and UDL, and in contrast to the traditional practice of working with reasonable adjustments.

## **Conclusions and discussion**

With the aim of offering new knowledge to this field of research, this article presents the inclusive educational practices that faculty members carry out to attend to student diversity. Although similar studies have been conducted in earlier stages of education (Florian & Black-Hawkins, 2011), there is little evidence in HE. Moreover, this type of practices is usually associated with faculty members of education sciences (Vasek, 2005). In this article, we show that faculty members of other areas, e.g., Health Sciences, also have the suitable characteristics to attend to disability, even in an educational stage such as the university. Our results are in line with those of Ashcroft and Lutfiyya (2013), who found that faculty members had positive attitudes, in their case, toward nursing students with disabilities.

First of all, we can conclude that these faculty members use different resources and materials, providing a variety of formats in order for all students to receive and understand the information in the way that best suits their characteristics. Coinciding with one of the principles of UDL (CAST, 2018), offering different options for the representation of information allows each student to choose their favourite, based on their capacities, preferences and learning styles. For this reason, the same content is presented in different ways: with written texts, audio-visual materials, manipulative objects or technological resources, among others (Schelly et al., 2011).

Furthermore, a large number of faculty members provide the material in advance, at the beginning of the subject, to allow their students to know what they are going to work on and how they will do it. Having the material in advance is of great help to students with disabilities. For them, it is very important to have a previous planning and the chance to edit and analyze the materials before their use in the classroom (Madaus et al., 2003). The lack of accessibility in the resources is one of the main problems that students with disabilities encounter throughout their studies. If they

are not accessible or sufficiently flexible to be modified, these students cannot assimilate the information of that specific material (Butler et al., 2017; O'Byrne et al., 2019; Wiltson et al., 2014). Therefore, the use of technology and different editable formats that are compatible with assistive technology will allow each student to choose the option that best suits his/her needs (Moriña et al., 2015; Perera & Moriña, 2019).

Secondly, the teaching methods used are especially relevant. University students, not only those with disabilities, usually point out that the traditional methods, such as the master lecture, do not manage to keep the motivation or a significant learning (Collins et al., 2018; Moriña et al., 2015). The participants of our study, although they made use of oral explanations, were aware that these methods had to be complemented with other methods in which the students played an active role, such as cooperative work, clinical cases, simulates, debates or cooperative learning (Meeks et al., 2017; Scanlon et al., 2018). This type of strategies, which promote group learning, favor and improve student interaction, which is something that students with disabilities often require (Wilson et al., 2016).

Similarly, we conclude that the adjustments to the teaching and evaluation methods are fundamental for faculty members to carry out inclusive practices. They recognize that, in some cases, without these adjustments, some students cannot learn and pass the subject successfully, as has been stated by students themselves in numerous occasions (Butcher et al., 2010; Wilson et al., 2014). Adjustments to the ways of communicating or allowing students to record the lectures contribute to a better understanding of the information by some students with disabilities (Moriña et al., 2015). Nevertheless, faculty members state that the use of a variety of methods that allow the participation of all the students reduces the need to make individual adjustments (Collins et al., 2018). What is clearly documented in the scientific literature

is the need to adapt the evaluation tests (Butcher et al., 2010; Jansen et al., 2017).

Adjustments such as changing the format of the exam or giving more time to finish it are highly valued by students with disabilities (Weis et al., 2016).

In short, the results of the present study allow generating a series of recommendations for faculty members to carry out teaching strategies that do not exclude any student due to individual characteristics. Coinciding with authors such as Terri et al. (2008), who approached this topic in the field of Nursing, we recommend that such training must be based on the following aspects: university legislation and policy and the duties of faculty members; design and implementation of accommodations; teaching strategies for students with disabilities; adjustments in the clinical environments; evaluation methods that suit disability; and tackling attitudes and prejudice toward disability. Furthermore, training in UDL and the introduction of its guidelines in university teaching will allow implementing all the measures that are presented in this work (Lombardi & Murray, 2011), as it will offer multiple ways of representation, expression and involvement (Kumar & Wideman 2014; Schelly et al., 2011).

### **Limitations and future research**

We would have liked to have had more participants from Health Sciences to learn more about experiences and ways of teaching in this area, which is less known in terms of teaching students with disabilities. Moreover, as this is a national project, it would be interesting to explore and contrast the information with participants from international contexts in order to have a broader view of how to carry out inclusive pedagogy in Health Sciences faculties.

In order to continue this line of research, the information provided by faculty members could be complemented with the voices of professionals of support services,

students with disabilities, and tutors from the centres and hospitals where the professional practices take place. Listening to all these voices could help to better know the experiences of students with disabilities in faculties of Health Sciences. Despite these limitations, we hope that the testimonies of the participants in this study will serve as examples and evidence that teaching in Health Sciences degrees can also be inclusive.

## References

- Aaberg, V. A. (2010). *Implicit attitudes of nursing faculty toward individuals with disabilities*. PhD diss: Washington State University United States.
- Alzate, J. I. C. (2018). Learning assesment in the educational justice context for the population with disability in higher education. *Revista Brasileira de Educação Especial*, 24(1), 89–102. doi: 10.1590/s1413-65382418000100008
- Anderson, E.S., Smith, R., & Thorpe, L.N. (2010). Learning from lives together: medical and social work students' experiences of learning from people with disabilities in the community. *Health & Social Care in the Community*, 18(3), 229-240. doi:10.1111/j.1365-2524.2010.00921
- Ashcroft, T. J., Chernomas, W. M., Davis, P. L., Dean, R. A., Seguire, M., Shapiro, C. R., & Swiderski, L. M. (2008). Nursing students with disabilities: One faculty's journey. *International Journal of Nursing Education Scholarship*, 5(1), 1-15. doi: 10.2202/1548-923X.1424
- Ashcroft, T. J., & Lutfiyya, Z. M. (2013). Nursing educators' perspectives of students with disabilities: A grounded theory study. *Nurse Education Today*, 33(11), 1316-13219. doi: 10.1016/j.nedt.2013.02.018
- Becker, S., & Palladino J. (2016). Assessing faculty perspectives about teaching and working with students with disabilities. *Journal of Postsecondary Education and*

- Disability*, 29(1), 65–82. Retrieved from  
<https://www.ahead.org/publications/jped>
- Black, R. D., Weinberg, L. A., & Brodwin, M. G. (2014). Universal design for instruction and learning: a pilot study of faculty instructional methods and attitudes related to students with disabilities in higher education. *Exceptionality Education International*, 24(1), 48–64. Retrieved from  
<https://ir.lib.uwo.ca/eei/vol24/iss1/5/>
- Butcher, J., Sedgwick, P., Lazard, L., & Hey, J. (2010). How might inclusive approaches to assessment enhance student learning in HE? *Enhancing the Learner Experience in Higher Education*, 2(1), 25-40. Retrieved from  
<http://journals.northampton.ac.uk/index.php/elehe/article/view/14>
- Butler, M., Holloway, L., Marriott, K., & Goncu, C. (2017). Understanding the graphical challenges faced by vision-impaired students in Australian universities. *Higher Education Research & Development*, 36, 59–72.  
doi:10.1080/07294360.2016.1177001
- Carballo, R., Cotan, A., & Spinola, Y. (2019). An inclusive pedagogy in Arts and Humanities university classrooms: What faculty members do. *Arts and Humanities in Higher Education*, 1-21. doi: 10.1177/1474022219884281
- Carballo, R., & Moriña, A. (2017). The impact of a faculty training program on inclusive education and disability. *Evaluation and program planning*, 65, 77-83.  
doi: 10.1016/j.evalprogplan.2017.06.004
- CAST. (2018). *Universal design for learning guidelines version 2.2*. Wakefield: MA
- Collins, A., Azmat, F., & Rentschler, R. (2018). Bringing everyone on the same journey: revisiting inclusion in higher education. *Studies in Higher Education* 44(8), 1475-1487. doi:10.1080/03075079.2018.1450852

- Dusek, G.A., Yurova, Y.V., & Ruppel, C.P. (2015). Using social media and targeted snowball sampling to survey a hard-to-reach population: A case study. *International Journal of Doctoral Studies*, 10, 279-299. doi: 10.28945/2296
- Elbeheri, G., Everatt, J., Theofanides, F., Mahfoudhi, A., & Al Muhareb, K. (2018). Attitudes of academics to special needs accommodations in Kuwait. *International Journal of Inclusive Education*. doi: 10.1080/13603116.2018.1508517
- Florian, L. (2014). What counts as evidence of inclusive education? *European Journal of Special Needs Education*, 29(3), 286-294. doi: 10.1080/08856257.2014.933551
- Florian L., & Black-Hawkins, K. (2011). Exploring inclusive pedagogy. *British Educational Research Journal*, 37(5): 813-828. doi: 10.1080/01411926.2010.50109
- Frank, H., McLinden, M., & Douglas, G. (2019). Accessing the curriculum, university based learning experiences of visually impaired physiotherapy students. *Nurse Education in Practice*, 42, 1-8. doi: 10.1016/j.nepr.2019.102620
- Gale T., & Mills C. (2013). Creating spaces in higher education for marginalised Australians: Principles for socially inclusive pedagogies. *Enhancing Learning in the Social Sciences*, 5(2), 7-19. doi: 10.11120/elss.2013.00008
- Gunersel, A. B., & Etienne, M. (2014). The impact of a faculty training program on teaching conceptions and strategies. *International Journal of Teaching and Learning in Higher Education*, 26(3), 404-413. Retrieved from <https://eric.ed.gov/?id=EJ1061039>
- Horkey, E. (2019). Reasonable Academic Accommodation Implementation in Clinical Nursing Education: A Scoping Review. *Nursing Education Perspectives*, 40(4),

205-209. doi: 10.1097/01.NEP.0000000000000469

- Jansen, D., Petry, K., Ceulemans, E., Noens, I., & Baeyens, B. (2017). Functioning and participation problems of students with ASD in higher education: which reasonable accommodations are effective? *European Journal of Special Needs Education, 32*(1), 71-88. doi: 10.1080/08856257.2016.1254962
- Kaur, A., Noman, M., & Nordin, H. (2017). Inclusive assessment for linguistically diverse learners in higher education. *Assessment & Evaluation in Higher Education, 42*(5), 756-771. doi: 10.1080/02602938.2016.1187250
- Kumar, K. L., & Wideman, M. (2014). Accessible by design: Applying UDL principles in a first-year undergraduate course. *The Canadian Journal of Higher Education, 44*(1), 125-147. Retrieved from <http://journals.sfu.ca/cjhe/index.php/cjhe/article/view/183704>
- Langørgen, E., Kermit, P., & Magnus, E. (2018). Gatekeeping in professional higher education in Norway: ambivalence among academic staff and placement supervisors towards students with disabilities. *International Journal of Inclusive Education, 1*-15. doi: 10.1080/13603116.2018.1476599
- Lombardi, A., & Murray, C. (2011). Measuring university faculty attitudes toward disability: Willingness to accommodate and adopt Universal Design principles. *Journal of Vocational Rehabilitation, 34*, 43-56. doi: 10.3233/JVR-2010-0533
- Madaus, J. W., Scott, S., & McGuire, J. (2003). *Barriers and bridges to learning as perceived by postsecondary students with learning disabilities* (Universal Design for Instruction Project Technical Report No. 01). Connecticut: Center on Postsecondary Education and Disability: University of Connecticut.
- Meeks, L., Richards, A., Chang, A., & Van Schaik, S. (2017). Working with students with disabilities: simulation-based faculty development. *Medical Education, 51*



(11), 1181-1182. doi:10.1111/medu.13423

- Miles, H., & Huberman, A.M. (1994). *Qualitative data analysis: an expanded sourcebook*. Newbury Park: Sage.
- Moodley, S., & Mchunu, G. (2019). Current access and recruitment practices in nursing education institutions in KwaZulu-Natal: A case study of student nurses with disabilities. *African Journal of Disability*, 8, 1–9. doi:/10.4102/ajod.v8i0.429
- Moriña, A., Cortés-Vega, M.D., & Molina, V.M. (2015). What if we could imagine the ideal professor? Proposals for improvement by university students with disabilities. *Teaching and Teacher Education*, 52, 91–98.  
doi:10.1016/j.tate.2015. 09.008.
- O’Byrne, C., Jagoe, C., & Lawler, M. (2019). Experiences of dyslexia and the transition to university: a case study of five students at different stages of study. *Higher Education Research and Development*, 0(0), 1–15. doi:  
10.1080/07294360.2019.1602595
- Oliver, M. (1988). The social and political context of educational policy: The case of special needs. In L. Barton (Coord.), *The politics of special educational needs* (pp.13–31). London: Falmer Press.
- Perera, V., & Moriña, A. (2019). Technological challenges and students with disabilities in higher education. *Exceptionality*, 27(1), 65-76.  
doi:10.1080/09362835.2017.1409117
- Savvidou, C. (2011). Exploring teachers' narratives of inclusive practice in higher education. *Teacher Development*, 15(1), 53-67. doi:  
10.1080/13664530.2011.555224
- Scanlon, E., Schreffler, J., James, W., Vasquez, E., & Chini, J.J. (2018). Postsecondary physics curricula and Universal Design for Learning: Planning for diverse

- learners. *Physical Review Physics Education Research*, 14(2), 1-19. doi: 10.1103/PhysRevPhysEducRes.14.020101
- Schelly, C. L., Davies, P. L., & Spooner, C. L. (2011). Student perceptions of faculty implementation of Universal Design for Learning. *Journal of Postsecondary Education and Disability*, 24(1), 17-30. Retrieved from <https://files.eric.ed.gov/fulltext/EJ941729.pdf>
- Stes, A., & Van Petegem, P. (2015). Impact of faculty training [Impacto de la formación del profesorado universitario], *Educar*, 51(1):13-36. doi: 10.5565/rev/educar.642
- United Nations. (2006). *Convention on the Rights of Persons with Disabilities*. New York: United Nation. Retrieved from <https://www.un.org/development/desa/disabilities/convention-on-the-rights-of-persons-with-disabilities.html>
- Universia Foundation. (2018). University and Disability. IV Study on the level of inclusion of the Spanish university system with respect to the reality of disability. [*Universidad y Discapacidad. IV Estudio sobre el grado de inclusión del sistema universitario español respecto de la realidad de la discapacidad*]. Madrid: CERMI. Retrieved from <http://xurl.es/31170>
- Vasek, D. (2005). Assessing the Knowledge Base of Faculty at a Private, Four-Year Institution. *College Student Journal*, 39(2), 307–315. Retrieved from <https://www.questia.com/library/journal/1G1-133606101/assessing-the-knowledge-base-of-faculty-at-a-private>
- Vlachou, A., and Papananou, I. (2018). Experiences and Perspectives of Greek Higher Education Students with Disabilities.” *Educational Research*, 60(2). 206–221. doi: 10.1080/00131881.2018.1453752

- Weis, R., Dean, E. L., & Osborne, K. J. (2016). Accommodation Decision Making for Postsecondary Students with Learning Disabilities: Individually Tailored or One Size Fits All? *Journal of Learning Disabilities, 49*(5), 484–498. doi: 10.1177/0022219414559648
- Wilson, K. L., Murphy, K. A., Pearson, A. G., Wallace, B. M., Reher, V. G., & Buys, N. (2016). Understanding the early transition needs of diverse commencing university students in a health faculty: informing effective intervention practices. *Studies in Higher Education, 41*(6), 1023-1040. doi: 10.1080/03075079.2014.966070
- Williams, R., Demery, R., Davies, R., & Harding, J. (2019). Reasonable adjustments for clinical examinations: process and solutions. *Medical Education, 53*(11), 1148-1149. doi:10.1111/medu.13979
- Yvonne Bulk, L., Tikhonova, J., Gagnon M, J., Battalova, A., Mayer, Y., Krupa, T. ...Jarus, T. (2020). Disabled healthcare professionals' diverse, embodied, and socially embedded experiences. *Advances in Health Sciences Education, 25*, 111–129. doi:10.1007/s10459-019-09912-6