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# Giving a voice to the best faculty members: benefits of digital resources for the inclusion of all students in Arts and Humanities

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## ABSTRACT

This article presents the testimonies of 24 faculty members of Arts and Humanities from five Spanish universities on the use of digital technology resources and their benefits for learning and educational inclusion of students with disabilities. They were selected by their own students with disabilities for their inclusive practices. Using a qualitative methodology, two semi-structured individual interviews were conducted with each participant to analyse different areas of inclusive pedagogy: beliefs, knowledge, designs and actions. The data were progressively analysed through a system of categories and inductive codes. The results show the digital resources that faculty members put into practice, as well as the different uses they make of them. In addition, the participants highlighted a number of benefits that digital technology has for the learning of all students, including those with disabilities. Finally, these results are discussed with those of previous studies, offering recommendations for the university to move toward a more inclusive education.

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Inclusive pedagogy; faculty members; educational technologies; Higher Education; Arts and Humanities

## 1. Introduction

Global policies against discrimination and exclusion, such as the Universal Declaration of Human Rights (United Nations General Assembly 1948), the Salamanca Declaration (UNESCO 1994) and the Europe 2020 Strategy for Smart, Sustainable and Inclusive Growth (European Commission 2010), have successfully contributed to improving access to Higher Education (HE) institutions for students with disabilities. In the 2020–2021 academic course, there were a total of 23.851 university students with disabilities in Spain (Fundación Universia 2021), which represents 1.4% of the student body and the highest figure since 2008, which continues to grow.

As proposed by the H2020 Strategy of the European Commission (2010), in view of this reality, it is necessary to offer a service that allows all students to achieve academic success by eliminating any type of obstacle. To this end, universities must integrate the

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principles of inclusive education into their agendas and policies, an essential element for the good development of educational practices (Claiborne et al. 2011).

Significant legislative progress and policy reforms have been made to achieve a model of inclusive education at the university level. However, there is still a long way to go to achieve the development and implementation of effective educational practices (Gale, Mills, and Cross 2017), since it is in the classrooms where more in-depth work is needed. Numerous studies reflect the reality of some universities that could be considered exclusive (Langørgen and Magnus 2018; Love et al. 2014). The lack of faculty training in disability, along with rigid curricula, inaccessible materials and non-inclusive methodologies and evaluations hinder the academic success of students with disabilities (Kendall 2016; Newman et al. 2020). These are obstacles that, in many cases, lead them to abandon their studies (Taneja-Johansson 2021).

### ***1.1. The role of the faculty in the educational inclusion process***

The faculty is a key part of the university experience for all students. Many studies reflect that their lack of training (Love et al. 2014), their negative attitudes towards disability (Van Jaarsveldt and Ndeya-Ndereya 2015) and the absence of reasonable accommodations in their teaching (Langørgen and Magnus 2018) make it difficult for students with disabilities to be included and participate in university spaces. Although there are many studies that analyse this situation from the students' own voices (Kendall 2016), it is also important to give faculty members a voice to know the main barriers and obstacles they face in their classrooms in order to develop inclusive practices.

According to the literature, the main barriers that faculty members encounter are: little experience with students with disabilities and little training in dealing with diversity (Black, Weinberg, and Brodwin 2014). However, most of them show two important predictors of success toward inclusion: good willingness to make reasonable adjustments and interest in receiving training (Becker and Palladino 2016).

Regarding the pedagogical training of faculty members, in Spain, as in other countries, it is not compulsory. This means that many faculty members do not have the necessary knowledge to carry out an adequate teaching activity. In addition, the offer of training courses in disability and inclusion is not very frequent, despite the fact that there are experiences of faculty training in this area which have shown multiple benefits for both faculty members and students: the ability to make the curriculum more flexible, to put inclusive teaching methods into practice, to use accessible materials, to improve faculty member attitudes and to raise awareness of disability (Moriña and Carballo 2017; Sowers and Smith 2004; Taneja-Johansson 2021).

Despite the fact that the lack of training and the negative attitudes of faculty members toward disability are widespread realities, there are studies in which students with disabilities have expressed a high degree of satisfaction with their faculty members (Majoko 2018). When students show a high degree of satisfaction with their faculty members, or when they claim which faculty members they would like to have, they point out practices such as active and participatory methods, making adjustments to educational materials (Moriña and Orozco 2021), the variety of evaluation methods and, as is discussed below, the use of technological resources (Van Jaarsveldt and Ndeya-Ndereya 2015).

## 1.2 Digital resources, Higher Education and students with disabilities

The use of digital resources in education can play a decisive role in the academic success of students with disabilities and improve learning for everyone (Perera et al. 2021). These resources can remove barriers and create new opportunities for learning and access to knowledge and facilitate the personalisation of teaching (Pearson and Koppi 2006; Seale 2014; Bong and Chen 2021). Furthermore, these resources can ensure the participation of all students on an equal basis and achieve quality learning. In this sense, an increasing number of universities are combining face-to-face and virtual teaching through online teaching platforms (Edwards 2019; Perera and Moriña 2019).

For the development of student-centred educational practices, faculty members must make the necessary adjustments based on the needs of the students, in order to adapt the process to the characteristics of everyone. Claiborne et al. (2011) stated that university students may encounter difficulties related to the accessibility of online resources, tools and activities. Therefore, accessibility must be considered an essential aspect in the learning process (Burgstahler 2009; Seale 2014).

For a correct use of technologies from a didactic perspective, universities must ensure that the university community has the necessary resources. In Spain, as in other countries, all universities have incorporated virtual teaching platforms and technological resources in their centres. However, providing institutions with technical resources is not enough; it is also necessary to provide other factors such as faculty training (Seale 2014; Bong and Chen 2021). Not all faculty members are trained to incorporate technology into their teaching from a didactic perspective. This is due to the lack of pedagogical training of faculty members, as was mentioned above. This type of training comprises the use of technology and the attention to students with disabilities (Moriña and Carballo 2017; Van Jaarsveldt and Ndeya-Ndereya 2015).

Furthermore, there is a close relationship between the use of technology in teaching and the academic success of students with disabilities. Many of these students have characteristics that make them need technological devices to study (reading, writing, communication ...). Therefore, faculty members are challenged to use ICT as an element of attention to diversity, using digital materials accessible to all students, especially those with physical, sensory and/or learning disabilities (Pearson and Koppi 2006).

In order to contribute to the field of study of inclusive pedagogy and the use of emerging technologies in HE institutions, this article analyses, from the voice of Arts and Humanities faculty members, the benefits that technology has for the learning of all students, including those with disabilities.

## 2. Research methodology

The results of this article are part of a study funded by the Spanish Ministry of Economy and Competitiveness entitled 'Inclusive pedagogy in the university: faculty members' narratives' (EDU2016-76587-R, IP. Anabel Moriña, 2016-2021). Developed by a multidisciplinary research team, the main objective of the project was to analyse the knowledge, beliefs, designs and actions of faculty members who carry out inclusive practices in the classroom. More specifically, this article presents the educational actions related

to the use of digital resources by Arts and Humanities faculty members to facilitate the participation of all students.

### 2.1. Participants

Faculty members from all areas of knowledge participated in the project. Regarding Arts and Humanities, 24 faculty members from five Spanish public universities participated in the study. The main objective was to analyse the knowledge and beliefs of inclusive faculty members about disability, and how they design and develop their teaching practice. The participants had to be excellent faculty members who promote the inclusion of students. Therefore, these participants had to meet only one criterion: they had to be recommended by their own students with disabilities.

In order to contact the students of the different participating universities, we requested the collaboration of the disability support services of all of these institutions. The colleagues from these services spread the information of the project to all the students with disabilities and asked them to e-mail their proposals of faculty members to the research team. To select the faculty members, we provided the students with a series of characteristics that they could meet: they believe in the possibilities of all their students; facilitate the learning processes; use active and participatory methods; are interested in the learning of all their students; are flexible, with a predisposition to help; are motivating; establish good relations with the students; and make students feel that they are important in the class.

Additionally, the snowball technique was used (Voicu and Babonea 2011). We requested the collaboration of students with disabilities who had collaborated with the team in previous projects, asking them to recommend faculty members who had positively marked their academic experience. Simultaneously, this information was also disseminated among students and faculty members from other universities so that it could reach other students with disabilities who could collaborate. Finally, we had the collaboration of students with different types of disabilities: sensory disabilities (visual and hearing impairments), physical, mental, organic, and learning difficulties.

Once the students from all universities sent their proposals, we contacted the faculty members by email and/or phone call. We told them how and why they had been recommended to participate and, once they knew the characteristics of the study, we invited them to participate in it. From the area of Arts and Humanities, the students recommended a total of 37 faculty members. Although all of them were contacted, 13 finally decided not to participate due to lack of time or availability at that time.

Regarding the profile of the participants, most of the faculty members taught Fine Arts (12 faculty members), five taught Philology and Translation, and four taught Geography and History. The areas of Sociology and Philosophy were less represented, with one and two faculty members, respectively. Fourteen of the participants were men and ten were women. In terms of age, four faculty members were between 31 and 39 years old, seven were between 40 and 48 years old, six were between 51 and 56 years old and three were between 60 and 67 years old. Four of the faculty members chose not to indicate their age. The sample was also varied in terms of years of teaching experience. Only three of them had more than 30 years of experience, whereas four

faculty members had between 21 and 30 years of experience, and another 10 had between 11 and 20 years of teaching experience. The experience of the remaining seven was less than 10 years.

## **2.2. Research instruments**

The study followed a qualitative methodology. The semi-structured individual interview was used as a data collection instrument, conducting two interviews with each participant. One of them was focused on analysing the beliefs and knowledge that the faculty members had about people with disabilities and the processes of educational inclusion in the university. The second interview analysed how they designed their programmes and the educational actions they put into practice to achieve the participation and success of all their students.

This paper presents the results obtained in the second interview, specifically on the categories of the use of technological resources. Some of the questions asked were: Do you use digital media for the development of the subject? Why? What kind of digital resources do you use? What are the ways in which students can access the materials? When and how do you facilitate access to these materials? What influence and benefits do digital resources have on student learning and, in particular, on students with disabilities?

The interviews were guided by the team's individual researchers and lasted approximately 90 min each. Most of them were conducted face-to-face. Only three of the faculty members were interviewed via Skype and two via phone call, due to large geographical distances or time incompatibilities. All of them were recorded in audio and transcribed verbatim.

## **2.3 Data analysis**

The data were processed through a structural analysis based on a system of categories and codes designed in an inductive way (Miles and Huberman 1994). The MaxQDA12 software was used to support the process of qualitative data analysis. First, an analysis was carried out by teams of two researchers, and then another analysis was carried out by the whole team. This second analysis was used to categorise information that created doubts about how and where to include it. The descriptive analysis of the data is complemented by a frequency analysis, with the aim of finding out how many participants expressed each idea and used each of the practices and resources. [Table 1](#) shows the categories and codes that were used for the analysis of the information on which this article is focused.

## **2.4 Ethical issues**

An informed consent report was used to ensure confidentiality in the processing of the data. In this document, the team committed to provide a copy of the final report with the obtained results to the participants, as well as to give them the opportunity to edit or delete any information. In addition, we assured them that they could leave the study at any time. In this case, their data would be destroyed and excluded from the research report.

**Table 1.** System of categories and codes for the data analysis.

| Categories                          | Codes  |
|-------------------------------------|--|
| Types of digital resources          | Digital documents<br>Video<br>Specific software programs<br>Communication tools<br>Internet<br>E-learning platforms  |
| Uses of digital resources           | Content sharing<br>Exemplification/ contact with reality<br>Simulations<br>Learning activities/ pedagogic use<br>Communication<br>Tutorials<br>Sharing of information  |
| Benefits of Technology for Learning | Course scheduling/ planning<br>Absences to class<br>Tutorials/ virtual monitoring<br>Asynchronous communication<br>Optimization of class time/ active work in the classroom<br>Increase of motivation<br>Diversity of resources<br>Reduction of difficulties related to disability |

### 3. Results

The results presented in this article are focused on three fundamental aspects: firstly, we present the different digital tools that the participants used and the uses they made of them; secondly, we show the different benefits that the educational use of technology has for the learning of all students, including those with a disability; and finally, we present some limitations of technology pointed out by the participants.

#### 3.1 Use of digital resources in university classrooms

The vast majority of the participants (91,7%) considered technology to be a key element in their teaching practice. Only a few of them (8%) used exclusively traditional written materials. In cases such as arts education, traditional resources were needed for drawing and sculpture. However, they had incorporated modern technology-based techniques for teaching these subjects.

In the drawing department we use very old and very poor, humble techniques, such as the use of charcoal and recycled paper. This, in contrast to the new technologies, with high resolution, with a computer, we connect the internet in the middle of the class ... In other words, it is a total integration in terms of resources. (faculty 4)

All participants recognised the pedagogical potential that digital tools represent both inside and outside the classroom. However, on a practical level, some faculty members only made instrumental use of them. Table 2 shows the resources that the participants used in their daily professional practice and for what purpose; and, in table 3, a contingency table shows the number of faculty members using each technique and digital resource.

**Table 2.** Digital resources used by faculty members.

| Resource/technique                 | Use  |
|------------------------------------|--|
| Digital presentation               | Content presentation   |
| Video/audio                        | Content presentation/ Exemplification/ Connection with practical and professional reality  |
| Images/maps/schemes                | Content presentation   |
| Digital press/Internet/web portals | Connection with practical and professional reality   |
| Digital documents                  | Content presentation   |
| Augmented reality programmes       | Implementation of activities/ Reality simulations/ Connection with practical and professional reality                                  |
| E-mail                             | Asynchronous communication/ sharing of documentation and resources   |
| Virtual teaching platform          | Asynchronous communication/ sharing of documentation and resources/ Conducting online activities/ discussion forums/ virtual tutorials |
| File sharing tools                 | Sharing large files (videos, documents, software, digital files)   |
| Blogs                              | Sharing links of interest on the subject/ Sharing real professional experiences  |
| WhatsApp                           | Asynchronous communication/ Group work/ Improvement of social relationships  |

Among the most used tools was the virtual teaching platform (91,7%), which all universities had. This platform was used to share material, documentation, bibliographic resources and audiovisual material, thus avoiding the need for students to get the materials in print. In addition, it was within everyone's reach, and resources such as audiovisual materials could not be made available to students without these digital tools.

I use the virtual teaching platform a lot and offer a large number of materials there. It is practically like our online meeting place. They have all the material on time, with bibliographical resources and Internet sites where we recommend that; if they have to see a tutorial or consult an artist, or any other source, it is accessible to them that platform. (faculty 9)

One of the participants (4.2%) of Arts opted for the use and application of Virtual Reality (VR) in the classroom. With the support of the necessary hardware and software, it brought students closer to real works and scenarios that they would otherwise not be able to observe in such detail. This didactic strategy boosted students' interest and involvement, encouraging them to play an active and participatory role. However, he indicated that for the development of VR-centred activities it was essential to: 1. respect the rhythm of learning; 2. train students in the technique, concept and use of VR; 3. plan the teaching and activities in detail and; 4. identify topics of learning interest to students.

I think that with VR the students get closer to an artistic scenario that they wouldn't be able to otherwise. They have a lot of fun and get involved. They are not looking at works on computers, a flat format, but, with them, it is as if they were in a museum, for example. In the case of students with disabilities, this is especially important, to be able to be in a context, but without having to be physically there. (faculty 17)

**Table 3.** Faculty members who used digital resources/techniques.

| Resource/<br>technique | Digital<br>presentation | Video/<br>audio | Images/<br>maps/<br>schemes | Digital<br>press/<br>Internet/<br>web<br>portals | Digital<br>documents | Augmented<br>reality | E-<br>mail | Virtual<br>teaching<br>platform | File<br>sharing<br>tools | Blogs | WhatsApp |
|------------------------|-------------------------|-----------------|-----------------------------|--|----------------------|----------------------|------------|---------------------------------|--------------------------|-------|----------|
|                        |                         |                 |                             |  |                      |                      |            |                                 |                          |       |          |
| Yes                    | 17                      | 22              | 19                          | 24   | 22                   | 1                    | 24         | 22                              | 9                        | 6     | 2        |
| No                     | 7                       | 2               | 5                           | 0  | 2                    | 23                   | 0          | 2                               | 15                       | 18    | 22       |



In addition, resources such as the virtual teaching platform, e-mail and WhatsApp provided a vehicle for continuous communication without the need to move, allowing contact with students at any time outside the classroom. Many participants (66,7%) even used these tools for virtual tutoring, thus avoiding the need for the student to go to the centre just to meet the faculty in a face-to-face tutorial.

I find it more convenient to contact everyone. It's a faster way, and if I have to communicate with them, it's better. That's why I like the platform. (Faculty 6)

However, these are the instrumental uses that the participants made of the technological tools, since they themselves differentiated between the instrumental use of technology and the pedagogical use. They commented that technological tools have great potential, but it is up to each educator to use them as a learning resource and not just as a way of communicating and sharing material.

We use it because it is what the university provides us with, and the university offers us training courses to get to know it because it has many tools. Therefore, you can use it only to upload PDFs, or you can use it by making use of all the tools and possibilities that it has, such as activities, questionnaires, etc. (faculty 24)

For some participants (37.5%), the use and application of technological tools in the teaching-learning processes allowed them to develop teaching methodologies based on Blended-Learning, such as the Flipped Classroom methodology. As a result, students were able to dedicate working hours to reading the subjects at home and, in this way, use class hours to study the subject in depth, debate, practice and reflect.

The virtual campus allows you to open up a lot of resources independently of the face-to-face class. The fact that there is this tool where you enter and have everything you can think of about the subject, makes the class freer too, doesn't it? The opportunity we have to be together in a classroom, then we can also dedicate it to other things. To work in groups, to debate, to practice ... To read materials you already have the virtual classroom. (faculty 20)

Within these uses, the faculty members performed activities and tasks with students outside the classroom. On the one hand, they encouraged the development of the students' critical capacity. Students could search, select and rate the material through internet searches and database management. According to the participants, the students thus acquired an active role and achieved significant learning based on constructivism.

... because what they are going to do next, which is what we all do, is work on the computer at home. I believe that this is how they will acquire guidelines to select quality information based on criteria, and to build arguments, which is what matters in the end. They learn to read this and not this for such reasons: 'because the author is good, because it is published in a very reliable source, because it is from a prestigious institution that does not publish just anything ...'. (faculty 20)

In terms of the type of activities, in addition to the work within the classroom, in 87.5% of cases, digital tools made it possible to provide students with activities such as case studies, tests, discussion forums and practical tasks.

In the Master's I generate activities, I do not only provide resources to the students. These subjects are not loaded with PDFs of book chapters; the students have a URL list that they

can use to search for information or articles. But the main thing in this virtual classroom is the activities and tasks that are generated to be done online. (faculty 24)

In addition to this type of activities, technological tools were even used for the development of subject evaluation. 54.2% of the participants commented that, with a large number of students, the formative evaluation became very complex. However, the digital platform and other resources made it much easier to carry out tasks on an on-going basis. Thus, the faculty members had the opportunity to monitor the students' learning and evaluate their work throughout the course on a continuous basis.

Doing evaluation work, evaluating through Moodle, through tasks. This, of course, makes the work much easier and helps students learn more and better. I actually do that. (faculty 18)

For other participants (12.5%), the use of electronic software applications for evaluation, such as Kahoot, was essential to evaluate the achievement and scope of student learning in a playful, motivating and participatory environment. Participants used it at the end of their lessons or the course to evaluate the degree of knowledge acquired. This not only allowed them to evaluate the students, but also helped them to reflect on their own learning.

I consider it essential to develop different evaluations. Not based on traditional methods. And technologies help us to do that. I usually use Kahoot in my classes because students have fun, enjoy themselves and participate. Moreover, they can see for themselves what they know and what they don't know and, from there, plan and organise their studies. (faculty 5)

### **3.2 Benefits of technology for the learning of all students**

The participants (83,3%) highlighted multiple benefits of ICT for student learning. An important idea that emerges from these results is that the benefits are common to all types of learners, although in the case of those with a disability, the contributions of ICT sometimes become crucial.

Work planning. One of the positive aspects of using digital resources in teaching was the opportunity they provided for course planning. All the participants pointed out how important it is for the students to know from the beginning of the course what they are going to do, as well as how and when. Thanks to the technological means, faculty members shared the schedule from the beginning of the subject, including reminders and key dates. Moreover, most of the participants (92%) made all the material available to the students through the teaching platform. In this way, they could consult the resources at any time.

It is true that also, in general, with these boys and girls I am always very organised with schedules, materials ... But with these people (students with disabilities), I take even more care, because I think they need more detailed information about what they have to do and, in that sense, I do not improvise, but I clearly specify what I expect from them and I clearly specify as well what materials they have to use to work with me. (faculty 19)

In the case of students with disabilities, 79,2% of the faculty members were aware that they required the material in advance and needed to plan ahead everything they were

going to do in case they were unable to attend the class at some point or needed to make adjustments to the material.

But yes, it is true that someone with a vision impairment or another condition may need this material a month earlier, either because they need to have it converted into Braille or because they need someone to read it to them, or because they need to work with it longer. (faculty 22)

Avoiding loss of information due to absences from class. The digital tools also provided a solution to the consequences that a student's lack of attendance in class can have. In addition to having the material available virtually at any time, a practice that some participants implemented consisted in recording all class sessions on video and then sharing the recordings in the virtual classroom. In this way, all students could see the class and did not lose information, even if they did not attend the class. This practice was carried out for all the students, taking into account all the circumstances: medical problems, time incompatibility, work ...

For someone who has a difficulty it is good because then he/she can visualise it as many times as he/she wants. But it can also help anyone else who, for example, has been absent-minded in class or at work and needs to see it at home. (faculty 5)

On the other hand, the participants (66,7%) made use of digital media for virtual tutoring, especially when a student was unable to attend class for some time, which was very common for students with disabilities. In this way, they could solve their doubts and receive explanations from the faculty.

This year I had a student with a crisis who could not come for a while. I am in the virtual tutoring system as well. The virtual tutoring system is very good for the students who need it. For those who do not need it we have face-to-face tutoring. (faculty 12)

Some faculty members (8,3%) even went beyond the teaching platform, using more dynamic and accessible resources such as mobile phones and WhatsApp, in order to maintain direct and fluid contact with the students so that no one left the subject.

In fact, they can still keep in touch with their colleagues. Lately we have been incorporating WhatsApp and, well, I know there are instructors who do not see it appropriate, but I think that, if we do not adapt, we will keep dwelling in the middle ages. (faculty 9)

Optimisation of face-to-face classes. The options of continuous communication, virtual tutoring and sharing of resources at any time and place allowed participants to use the time in the face-to-face sessions to work in a practical way. On the one hand, having multiple materials available at all times made it possible for students to focus their attention on the explanations, instead of taking notes, which used to hinder attention and involvement.

In the old days you had to be constantly taking notes in the classroom, because the teacher would say what was going to be on the exam. Now they are in a more relaxed context; they are doing their exercises and paying attention, and they are not with the pen and paper constantly copying what you say, since they know they have all the resources online and can access them whenever they want. The opportunity we have to be together in a classroom must also be dedicated to other things: to work in groups, to debate ... To read materials, you already have the virtual classroom. (faculty 13)

The participants (95,8%) saw ICT as an opportunity to optimise class work by performing other practical tasks and active methods, thus achieving a more meaningful learning.

Increased student motivation. Digital resources opened up a world of possibilities for presenting materials and performing tasks. The participants (91,7%) highlighted the dynamism that ICTs brought to their classrooms, resulting in increased motivation and involvement of students in their own learning. By using different supports, resources and stimulations, the sessions were not monotonous and could include multiple tasks.

Diversify the material, the presentations, many examples, all very visual, even with examples like visual spotlights, of coloured newspaper covers, which really is an ornament, but helps to focus the attention a little more. Apart from the videos, a certain dynamism using web pages ... That is to say, that everything is not very linear, very monotonous, but that there is a certain use of visual resources apart from the contents. (faculty 15)

In addition, the participants (79,2%) were aware that the profile of many of the students in their classrooms were digital natives, and anything that involves the use of technological devices increases their motivation. Therefore, they could not conceive teaching without the use of technology. They carried out activities and processes through the use of mobile phones, and with innovative tools (e.g. augmented reality systems). In this way, they also worked on digital competence, which is fundamental to the performance of practically any job in the twenty-first century.

Within all my subjects I am focused on the digital art part and, obviously, using these technologies is unquestionable. Moreover, I also try to include mobile applications, for example, which we did not have before and which is something that students love and are motivated by. Maybe motivation would be another big benefit. (faculty 9)

Improving the participation and learning of students with disabilities. In addition to the benefits presented above, ICTs posed an added value to the faculty members for the academic experience of students with disabilities. They commented that this had been expressed by their own students on many occasions, who thanked them for using these resources.

Firstly, the participants (54,2%) commented that ICTs made it possible to offer the same content through different resources, materials and formats. Following the principles of Universal Design for Learning (UDL), they tried to offer a wide variety of content formats so that each learner could use the one that best suited their characteristics, or simply the one they preferred. In doing so, the faculty members took into account the abilities, learning styles, tastes and interests of all students.

... that helps them also with their own learning, the different and diverse way of receiving information. There are different people and each of them learns in a different way. So, for those who are better off with one thing, they will get it better in one way, and those who are not, in another. It also helps to avoid monotonous classes and to make them more fun and, therefore, more motivated. (faculty 10)

Secondly, the participants (70,8%) highlighted the versatility of digital materials. Resources such as digital texts, presentations, videos, etc., were the most suitable for making the adjustments that students with disabilities require. They made adjustments to the materials, such as increasing the font size, modifying colours and formats,

subtitling videos, recording audio sessions, using screen reader compatible media, and even taking computer-based exams.

Perhaps the hardest part of adapting was when I had a blind translation and interpretation student, because I had to convert all my notes and PowerPoint into a format that she could read and work on well. But once I was shown how it worked, it did not take me long to prepare all the material that way. (faculty 18)

Finally, the participants (66,6%) stated that, without technology, studying would be very difficult for students with certain types of disabilities. They claimed that these technological means were a form of expression that overcomes the difficulties of disability in learning and participation. In addition to offering multiple ways of transmitting information, the faculty members (62,5%) offered possibilities for each student to work in the way they wanted. In the case of students with disabilities, the possibility of working through digital devices allowed them to develop their full potential and their learning to be effective.

For people who have a difficulty in their hands, holding a pencil and a tablet means that they have a much better chance of understanding and realizing more and better things than using the paint brush. With the traditional method you know that going back is complicated if you make a mistake ... There (in technological devices) there is simply a back button, copy again, etc. Therefore, fear disappears and creativity flourishes. (faculty 2)

### **3.3 Limitations of technology in teaching and communication**

Despite the great benefits of the use of technology in the classroom, especially for students with some kind of disability, we should mention the disadvantages encountered and the solutions given to avoid them. To this effect, one teacher (4.2%) commented on the risk that students might get used to not taking any notes at all (less attention in class or less attendance), trusting that all the information would be provided to them in full in digital format. Some participants (37.5%) solved this problem by applying various strategies, such as warning them in advance that they would not be given all the material, that the slides would not contain all the information presented in class in an exhaustive way, or that they would mark those slides that would not be given to them afterwards.

Also, I don't give everything. There is always one slide that I never give. Otherwise, they don't have all the material for the exam. I once used a strategy which was to put a green mark on the slide so that the students knew that they already had that slide, and if there was no mark on the slide, they had to take notes. (faculty 7)

Other participants (20.8%) pointed out that the use of ICTs in the classroom could affect the rhythm and processes of classroom interaction. The computer, according to them, was a type of technology that benefited non-communication, since, while the students were working on the computer, they could not look at the faculty and listen to his or her explanations.

And the computer is a problem because it benefits non-communication. So it is beyond your control if you are talking and the pupil doesn't look at you because he is looking at the computer. I try to create patterns where there are times to look at the computer and others where you don't look at the computer. It's like the rhythms of the class. (faculty 5)

Finally, some of the participants (54.2%) mentioned Internet connection problems as a drawback. Sometimes this was a real barrier to accessing the e-learning classroom. This meant that, due to uncomfortable disconnections or occasional failures, they did not make regular use of e-learning and the resources it offered. Instead, they opted to use other options, as faculty 23 commented.

There are times when the virtual classroom does not work well. In my relationship with them I use my e-mail. I don't trust the virtual classroom e-mail because it doesn't always work. And I also have a list of their personal e-mail addresses. And I also know that they have WhatsApp, so, for example, I go to three of them and these three quickly connect with everyone. (faculty 23)

#### 4. Discussion and conclusions

This article presents the testimonies of faculty members recommended by their own students with disabilities as good faculty member on their use of ICTs in teaching and their benefits for learning. As Seale (2014) points out, although university staff are aware of the importance of technology in university classrooms, sometimes they do not know how to use it in a pedagogical way. However, when these tools are used properly, they have many benefits that improve the learning of all students, as shown in this article.

An important lesson learned from this study is that the participants do not distinguish between two groups of students: those with and those without disabilities. In the opinion of this group of faculty members, those practices that are beneficial for students with disabilities are also beneficial for all other students. This idea has been corroborated on numerous occasions by other studies (Gale, Mills, and Cross 2017; Moriña 2020). Therefore, from the perspective of inclusive pedagogy, real inclusion does not distinguish between students, but aims to ensure the participation and learning of all, regardless of their individual characteristics.

The use and application of digital media is a fundamental issue for the design and development of inclusive practices (Van Jaarsveldt and Ndeya-Ndereya 2015) and, in many cases, becomes indispensable. Using digital tools facilitates good learning for all students. Similar ideas have been identified in studies such as those of Moriña and Orozco (2021) and Perera et al. (2021), in which these resources have been considered a very effective way of learning for all students, especially for those with disabilities (Seale 2014). Nevertheless, it should be clear that these tools are a complementary resource for teaching, as they need to be combined with other teaching strategies both at the classroom and virtual level (Edwards 2019). Although some of the participants used technological resources in an instrumental way, most recognise their pedagogical potential and use them with a clear didactic intention (Mavrou and Symeonidou 2014).

The previous planning of the course is a fundamental element that influences how the students face the subject from the beginning. In the case of students with disabilities, the initial knowledge of what, when and how is going to be done becomes even more important due to the need to spend more time on certain tasks or the absences from class that they sometimes have to take (Rose et al. 2006). The use of tools such as the virtual platform allows faculty members to share with students all the scheduling from the beginning of the course, as well as to include elements such as submission reminders and important

dates and to share all the subject material from the first day so that the students can use it, which is also a fundamental practice for students with disabilities (Madaus, Scott, and McGuire 2003).

Another benefit of ICTs is the ability to break down space and time constraints. Practices such as virtual tutorials, email contact and video recording of class sessions make it easy for a student who cannot attend face-to-face classes at some point to avoid losing information and disengaging from the process. This type of practice, as well as having the course material digitally available at all times, ensures that the student's learning and success does not depend on his or her ability to attend all classes physically, offering options for when this is not possible and avoiding the loss of information and space (Shaw 2009).

Moreover, all these possibilities of communicating and sharing materials outside the classroom make it possible for class time to be dedicated to practical work and the application of theory. Faculty members find in the classroom the perfect opportunity to develop practices that stimulate the participation, reflection and meaningful learning of the students (Perera and Moriña 2019) (the specific practices and teaching methods that this group of faculty members developed can be found in Carballo, Cotán, and Spinola-Elias 2021). The use of active and participatory methods has been highly demanded by university students (with and without disabilities). ICTs greatly facilitate the possibilities of working with this type of strategy, instead of using traditional presentation methods characteristic of university teaching (Love et al. 2014). The use of technological tools not only makes it easier to work with active methods, but also to design and develop formative evaluation methods to adequately monitor student learning (Mavrou and Symeonidou 2014), being a much more effective and fairer evaluation model than final tests (Kumar and Wideman 2014). Therefore, it is important for university staff to have a wide repertoire of strategies that address all the diversity present in the classrooms (Carballo, Cotán, and Spinola-Elias 2021; Moriña 2020).

Another important aspect that emerges from the discourse of the participants of this study is their intention to adapt to the characteristics of the students when they take into account that they are digital natives, habituated to the use of technology in a very common way. The intention of the participants to connect with them when introducing ICT in the classroom, in addition to the attractiveness of the variety of resources and strategies used, produces a significant increase in the motivation and involvement of the students in their own learning process (Hughes, Corcoran, and Slee 2016). Furthermore, in a world where the use of technology is increasingly widespread in the work environment, the training of digital competence in university students is an undisputed issue for faculty members (Gisbert and Esteve 2016).

Although the literature has widely pointed out the benefits that ICTs have for the learning of all students, when we talk about students with disabilities these tools become even more important (Lersilp 2016). Firstly, many students with disabilities use assistive technology as devices and programmes for processing digital material. Without the use of digital formats in materials, these students cannot access the content in the same way as their non-disabled peers (Pearson and Koppi 2006). The use of digital materials also allows students to edit, which reduces the need for faculty members to make reasonable adjustments to the materials.

Furthermore, using different formats to transmit the information complies with the principle of UDL, which aims to ensure that all students can access it in the most appropriate way, facilitating the personalisation of the teaching-learning process (Kumar and Wideman 2014). In this way, students have access to the content in different formats, in a flexible and equitable manner and through various channels (Burgstahler 2009). The use of technological resources opens up a world of possibilities for the design of flexible and varied materials that can be adapted to the interests, capacities and learning styles of all students.

## 5. Limitations, recommendations and future research

We should mention the limitations that appeared during the research process. These relate, on the one hand, to the impossibility of conducting face-to-face interviews with some participants. Either due to the lack of availability or the wide geographical separation of their location, they had to be interviewed by telephone or via Skype. The interviewer-interviewee relationship may have been affected in some way, as well as the climate or the non-perception of non-verbal language. On the other hand, another valued option was to differentiate between types of disability when analysing the information, organising the participants' actions according to each disability. However, we decided to follow a more inclusive perspective, covering the whole group of students, with and without disabilities, as most of the actions developed by the participants aimed to improve the learning of all their students without differentiation.

Although the use of ICT in university education is increasingly widespread, it is necessary to ensure that its use is guided by pedagogical principles known to the teaching staff. In this sense, universities still have to make a great effort to provide the necessary resources (technical and human) for the correct use of this type of tools (Edwards 2019), as well as to offer training opportunities for their staff, both for the pedagogical use of technology and for attention to diversity (Black, Weinberg, and Brodwin 2014; Kendall 2016). As evidenced by Moriña and Carballo (2017) and Sowers and Smith (2004), training in inclusive education and disability has a strong impact on faculty members in areas such as improving their attitudes toward disability and increasing their knowledge of inclusive teaching strategies and design of accessible resources and materials. These measures need to be taken by universities around the world to move toward the full inclusion of all students in higher education.

However, studies dedicated to the evaluation of faculty training in accessible digital materials do not present objective data on the results of the training, as stated by Bong and Chen (2021). In addition to staff training, other recommendations for faculty members from this study include: asking for support from university support services in charge of advising teachers on disability; considering diversity as an enriching element of the classroom, not as a difficulty; and being willing to improve by taking all necessary actions to ensure the success of their students, with and without disabilities. Taking into account that legislation does not regulate exactly the obligatory nature of developing specific actions for students with disabilities, and that pedagogical and technopedagogical training on this issue is not mandatory, the use of inclusive pedagogy depends on the goodwill of faculty members, so awareness-raising actions here become essential (De Bie et al. 2020).

Although studies on inclusive pedagogy in Higher Education are emerging, they are especially scarce in the field of Arts and Humanities, even more so when they focus



on the inclusive use of technological resources. For this reason, the content of this article aims to promote a line of research that helps to explore the typologies, possibilities and impact of these technologies in the application of an inclusive pedagogy that addresses diversity in the university, giving a voice to both staff and students. As lines of future research, it would be interesting to analyse the use of innovative teaching strategies based on technology in order to learn about their benefits, since, as we have observed, not all faculty members are currently taking full advantage of the potential of these tools. Furthermore, knowledge must continue to be created on the application of the principles of inclusive pedagogy and Universal Design for Learning in e-learning environments and ICT-mediated education.

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