

**UNIVERSITY SURROUNDINGS AND INFRASTRUCTURES THAT ARE  
ACCESSIBLE AND INCLUSIVE FOR ALL: LISTENING TO  
STUDENTS WITH DISABILITIES**

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**Abstract**

*Purpose:* The main topic of this article is the architectural barriers and infrastructures as identified by university students with disabilities. The data presented herein is part of a much wider research project titled “Barriers and aid that students with disabilities identify at the University,” sponsored by Spain’s Ministry of Economy and Competition. *Method:* A biographic-narrative methodology was used for this study. A variety of instruments were used to collect data: interviews, focus groups or life-lines. For the data analysis, a structural analysis based on a system of categories and codes

was used. *Results:* The results presented have been classified based on one of five barrier types: urban (barriers that are outside the actual university campus), transport (these refer to both public transport as well as the difficulties when using one's own vehicle), building (obstacles inside university buildings), environmental (those elements within the classroom, including furniture, excessive noise or inadequate temperatures) and communication (these are divided into signposting and barriers when accessing information). *Conclusions:* Lastly, a variety of questions are considered in the conclusions which indicate that universities still need a certain degree of adaptation and readjustment to really be accessible and inclusive, in keeping with the principles of universal design.

#### **Implications for rehabilitation:**

- The social disability model has been making headway by defending the need for educational contexts to be as inclusive as possible.
- Students with disabilities ran into barriers, not only outside the university campus, but they identified a number of obstacles within university walls.
- Architectural barriers made their student life more difficult, while placing them in a situation of discrimination and dependence upon their classmates.
- Universal design is a strategy to improve equal and inclusive access for people with disabilities.

#### **Key Words**

Higher education, students with disabilities, architectural barriers and infrastructures, universal design, biographical-narrative methodology

#### **Introduction**

The right to higher education dates back to 1948 (the Universal Declaration of Human Rights, art. 26.1, UN, 1948). This Convention was followed by other

international agreements establishing the need to guarantee that people with disabilities have discrimination free access to higher education. Among these, several are noteworthy, including the 2006 Convention for the Rights of Persons with Disabilities or the Disability Discrimination Acts in such countries as Australia (1992), the United States (1990) and the United Kingdom (1995, 2010).

In Spain, this right has also been recognized by the legislation. An example is Royal Decree 1/2013 covering the rights of people with disabilities and their social inclusion. When it comes to the university, Constitutional Law 4/2007 for universities specifically mentions the inclusion of people with disabilities, establishing guaranteed equal opportunity and no discrimination.

Nevertheless, the figures drawn from the report by the National Disability Observatory (2010), based on a survey regarding disability, personal autonomy and situations of dependency, revealed that only 5.4% of people with disabilities, aged 25 or over, have university studies or equivalent. Among those without disabilities the proportion reaches 18.7%.

In Spain, during the 2013-2014 academic year, 21,942 students with some type of disability were enrolled at university. Year after year, this number increases; it is a reality taking place at universities in Spain, as is the case in many other countries (Holloway, 2001; Konur, 2002, 2006; Hadjidakou and Hartas, 2008) where the number of disabled students has gradually increased.

Moreover, within the field of higher education, in recent years, an inclusive education model has been the model to follow. This proposal advocates that universities become institutions to which students can belong to and participate and learn in (Booth and Ainscow, 1998; Hardy and Woodcock, 2015; Messiou, 2012; Moliner, Sales, Ferrández and Traver, 2011; Parrilla, 2009; Slee, 2012).

Nevertheless, authors such as Oliver and Barnes (2010) have questioned the policies and practices of university systems, which, in many cases have inaccessible curriculum, negative attitudes and physical barriers. From the standpoint of these authors and many others including Ferni and Henning (2006), Gable (2014), Matthews (2009) and Ness and Stromstad (2003), it has been suggested that instead of the medical disability model, university environments should, when it comes to disability, position themselves within the social model (Oliver, 1990). This would mean changing the teaching environment by eliminating the barriers created by society making it as inclusive as possible.

In this sense and as conceptualized by the World Health Organization (2001), barriers could be defined as aspects in a person's environment—whether present or absent—that limit functions and generate disability. Such features include physical environments that are inaccessible, a lack of adequate technological assistance, negative attitudes regarding disabilities and also the services, systems and policies that are either inexistent or hinder the participation of those with a disability.

Within the scope of this article and the specific case of disability and university education research, since the 1990s and until now, a number of studies have concluded that although universities have taken major steps towards favouring the rights of disabled students and have responded to the needs of these students, there is still a long way to go. A series of barriers are still visible (attitudes, access to curriculum, architectural barriers, etc.) that hinder educational careers of university students with disabilities (for example, Adams and Holland, 2006; Borland and James, 1999; Boxall, Carson and Docherty, 2004; Moswela and Mukhopadhyay, 2011; Nielsen, 2001; Olney and Brockelman, 2003; Prowse, 2009; Riddell, Wilson and Tinklin, 2002; Shevlin, Kenny and McNeela, 2004; Tinklin and Hall, 1999).

Of all the barriers, the architectural barriers and infrastructures are analyzed in this article. Although at a glance these barriers might seem easy to change, it is also true that they continue to be found in many universities, as indicated in a number of studies (Borlan and James, 1999; Moswela and Mukhopadhyay, 2011; O'Connor and Robinson, 1999; Tinklin and Hall, 1999; Holloway, 2001; Fuller, Healey, Bradley and Hall, 2004).

In the specific case of Spain, the studies carried out by Castallena and Sala (2005), Díaz (2012), Luque, Rodríguez and Romero (2005), Alcantud, Ávila and Asensi (2000), Rodríguez, Suso, Vázquez and Velasco (2009) confirm this argument and describe barriers as the failure to adapt, together with inaccessibility to buildings and spaces. The aforementioned authors also include the inaccessibility to websites and virtual resources, commotion in the classroom (mainly affecting people with physical and visual disabilities), noise (generally linked to students with hearing problems), insufficient lifts, and lack of adapted classroom space or a lack of information posters in braille throughout the university as barriers.

According to Olivera (2006) who stated that *urban, architectural and transportation barriers* are found everywhere; this is also the case with *communication barriers* (public address system and road signs to mention a few), virtual platforms (web sites with small or difficult to see type, without acoustic communication, etc.). The authors of this work emphasize the need to adapt and eliminate both architectural barriers and infrastructures considered hindrances to make them accessible for everyone. As Juncà (2003) explained, facilitating an accessible environment translates into greater personal autonomy and allows students with disability to live independent lives and enjoy full citizenship. For these students, decreasing barriers automatically increases their level of wellbeing.

We agree with Barnes (2009), Olivera (2006) and Rodríguez et al. (2009) in the fact that, in order to eliminate these barriers, structural changes and strongly rooted cultural conceptions must be changed. As presented in the social model, accessibility barriers, from the architectural and spatial point of view, derive from a cultural concept in which spaces are neither contemplated nor built for people with a disability.

From this point, it is essential that policies conceive and design spaces and infrastructures that are accessible for everyone (Heylighen, 2014; Imrie & Luck, 2014; Iwarsson & Ståhl, 2003; Rodríguez et al., 2009). In this regard, legislation has been developed in Spain to identify the right to accessibility and a more universal design (for example, Royal Decree 1/2013), although the actual execution and everyday application of the law is still pending.

If a universal design is adopted, as proposed in the 1997 by Center for Universal Design at the University of North Carolina, we must design products and environments that are usable and accessible to all, without any need for adaptation or a specific design. This is applicable for buildings, streets, parks, equipment or signs (Connell et al., 1997; Mace, 1997; Preiser & Smith, 2011; The Center for Universal Design, 1997).

As Olivera (2006), Scott, Loewen, Funckes and Kroeger (2003) and Watchorn, Larkin, Ang and Hitch (2013) explained, spaces would also be inclusive if these do not segregate or exclude a person due to his or her disability, but rather, these environments become, in the words of Kitchin (2001) "*inclusive landscapes*." In keeping with Pliner and Johnson (2004) and Powell (2013), adopting this focus for Higher Education means that the seven principals of universal design would have to be followed: equitable use, flexibility of use, simple and intuitive design, perceptible information, low physical and technical effort and tolerance regarding errors or mistakes.

### **Methodological Design Of The Research**

This study is part of an extensive research project financed by Spain's Ministry of Economy and Competition, the title of which is "Barriers and aid that students with disabilities identify at the University" (ref. EDU 2010-16264). This four-year study (2010-2014), is being undertaken by a multi-disciplinary research team of professors from the University of Seville, from various fields of knowledge (Educational Sciences, Economics, Health Sciences and Experimental Sciences). The objective is to study the barriers and aid that university students with disabilities identify with regards to access, career and results at the university.

The multidisciplinary nature of our study was one of its main contributions with regard to other studies done to date (Claiborne et al. 2010; Hadjidakou and Hartas, 2008, etc.). The analysis of barriers and aids was done by field of knowledge, in the understanding that the reality of students with disabilities in Social Sciences might be different from those studying Health Sciences. Another novel feature that should be pointed out is that in collecting the data we made a macro analysis (of the university in general) and microanalysis (of university classrooms). Furthermore, as suggested elsewhere (Hanafin et al. 2007), international research on participation of individuals with disabilities in HE often concentrates on physical or sensory disabilities. In this study, students with all types of disabilities participated. Finally, we should point out that this is one of the few studies using a biographical-narrative methodology, ideal for making the voice of vulnerable groups, such as students with disabilities, heard. Hopkins (2011) also made use of this methodology, but the sample was limited to only six people.

The biographic-narrative methodology was used for this three-phase research project. In the first of these, a number of focus groups were organized (at least one for

each of the five knowledge areas<sup>1</sup>), as well as individual interviews (oral and written). Forty-four students participated in this initial phase. In the second phase, micro-life histories were carried out with sixteen university students who had participated in Phase 1. These themed micro-life histories focused on a topic and specific period of their lives—their university career. Three data collection instruments were used: life-lines (Lifelines are visual depictions of an individual's life events in chronological order), focus interviews (focus interviews focus on critical incidences in the life of a person) and self-reporting (this is a document in which the actual participant in the research narrates, in first person, those aspects that he/she considers most significant for the topic being studied: his/her university life story).

Phase 3 included eight of the sixteen students who had already drafted their micro-life histories; a biographical-narrative methodology was applied to provide in-depth life histories and polyphony of voices (Frank, 2011). To draft these histories, a number of data collection techniques were used, including in-depth interviews, photographs, interviews with other key people in the lives of each student, observations, etc.

This work focuses on all of the research phases, but the analysis focuses exclusively on architectural barriers and infrastructures. Prior projects by these authors studied the barriers and aid that students with disabilities identify in other matters, for example, regarding the lecturers (The Author et al., 2015), educational programmes (The Author et al. 2014), the university as an institution (The Author et al., at press) and university classrooms (The Author et al., 2010).

All participants were students with some type of disability and registered at the University for the 2009-2010 academic year. There were 445 students with a disability

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<sup>1</sup>The fields of knowledge contemplated at the University of Sevilla are: Health Sciences, Experimental Sciences, Social and Judicial Sciences, Engineering and Technology, and Humanities.

enrolled in this course, which represented 0.6% of the total student population (72,358) for that year at the University of Seville.

Regarding the characteristics of the participants, they ranged between 19 and 59 years of age, with the average being 30.5. Fifty percent were men and the other 50% were women. Concerning their academic progression, 25% were in their first year, 16% in the second, 25% in the third year, 14% in the fourth and 9% in their fifth year. The rest, approximately 11%, were post graduates taking official Master's courses. Sixty-three percent of the students had been at university for one to five years, while 37% had spent more than five years studying. It is important to note the 14% of the students had spent ten or more years at university. Finally, when it came to the actual disability and in keeping with the categories used by the University, 38% of the students had a physical disability, 15% psychological, 36% sensory disability and 11% had difficulties associated with some type of organic problem (asthma, degenerative diseases, etc.).

The analysis was performed from a double perspective. On the one hand, to draft each history, a narrative analysis was performed, as described by Goodley, Lawthom, Clough and Moore (2004). On the other hand, for the comparative analysis of all information collected with the techniques and participants, a structural analysis was performed (Riessman, 2008) using a system of categories and codes based on the proposal by Miles and Huberman (1994) and the MaxQDA10 analytical program.

## **Results**

To present the results of architectural barriers and infrastructures, we designed our own analysis system, based in part on the proposal by Luque et al. (2005), with the following classification:

1. Urban barriers: Streets and public spaces outside the University.
2. Transportation barriers: Public transportation, personal vehicle.

3. Building barriers: Inside University buildings and spaces.
4. Environmental barriers: Furniture, Environmental conditions (light, temperature).
5. Communication barriers: Signposting, Access to information (Public address system, bulletin boards, non-adapted computers, PowerPoint, visual surroundings).

The five dimensions included in the analysis system are five. The first type of barriers—urban—refers to barriers that are outside the actual university campus, but in the surrounding area (for example, streets and public spaces, sidewalks, inadequate urban furniture, etc.). When it comes to transport barriers, these refer to both public transport as well as the difficulties when using one's own vehicle. Building barriers have to do with the obstacles inside university buildings, spaces and classrooms (narrow corridors and entry halls, small or no lifts, undersized bathrooms, classrooms with stairs and no ramps, etc.). Environmental barriers include those elements within the classroom, including furniture, lack of order, limited lighting, excessive noise and inadequate temperatures. Lastly, communication barriers mainly affect students with hearing and visual disability; these are divided into signposting (stairs, doors, or spaces without signs) and barriers when accessing information (public address system, inaccessible PowerPoint, outdated blackboards, virtual environments with inaccessible documents, videos with no subtitles, etc.).

- *When public streets and spaces fail to facilitate universal access*

The participating students, especially those with a physical disability, pointed out a number of urban barriers they encountered when going to the faculty or to perform practical academic activities outside the university. These activities are essential to

attain their objectives and the competencies established in the curriculum for the degree they are preparing. Specifically, there were students who ran into obstacles on the streets accessing the faculty, such as rubbish skips, vehicles parked in the access to the educational centre, street lamps, etc.

*“RTE6<sup>2</sup>: The barriers when accessing the building, (rubbish skips on the sidewalk, parking spaces with cars right at the entrance...). As far as I’m concerned, the most frequent barriers have been when entering the university; on the main avenue there are so many parking places, the bus stops, there are so many street lamps and things on the sidewalk that it becomes a real adventure.”*

- *When moving around the city becomes a real obstacle course*

When it comes to transportation barriers, one aspect is public transport whilst another is the use of personal vehicles. In the first case—public transportation—city busses were aspect criticized by students with a visual disability. Sometimes, it is difficult to use them as there is no auditive signal to indicate each of the bus stops along the route. In many cases, the actual bus stop is not respected, in which case, it is impossible for a visually disabled student to know when he/she has reached the desired destination, as one must count the bus stops. Although this is the case, these same students admitted that of the various transportation options offered by the city, the underground is the most accessible.

*“RS8: The underground is the most accessible; the best because it lets you know, you know... Not like here, buses have a nasty custom—I don’t know, I haven’t run into it in other cities—when they reach the planned bus stop, if there are no passengers for that stop, they keep going, without stopping. In other cities, they always stop, whether or not there are possible passengers, and you are thinking that from here to where I’m going, there are five stops, you count them*

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<sup>2</sup>To safeguard the confidentiality of the participants in this research, we have used abbreviations to identify them. Therefore, RSC refers to Health Sciences, RSE to Social and Judicial Sciences, RSP to Social Sciences (Education), RTE to Engineering, Technology and Experimental Sciences and RH to Humanities. Each participant was given a number in addition to the corresponding abbreviations.

*and you get off. Here, you can't count (the stops) because the driver might or might not have skipped one."*

When it comes to commuting in their own vehicle, these students pointed out the difficulties they encountered when parking in the city. The parking spaces reserved for drivers with disabilities are, on more than desirable occasions, occupied by other users. The same holds true at certain faculties, such as Fine Arts,<sup>3</sup> which is located in the historic centre of Seville, where parking is a major hindrance.

*"RSP1: There aren't any spaces reserved for the handicapped. Then, the space reserved for the handicapped, well they won't let me park there because I have a crutch and I can more or less get around, so I don't have the disabled card; but in all truth, if I have to come every day with a heavy rucksack, park miles away and come walking, well, I can do it, but it ends up affecting my back really bad."*

However, many of the students participating in this study commented that they have not run into this specific difficulty at the University. In fact, it was just the opposite, as they have been provided with special permits to park their vehicles within the university complex:

*"RH7: The only recognized right that I see is that people here with disabilities are allowed to enter, and that gave me good vibes because it allowed me to come here by car; I live outside the city, and otherwise, ....there was no underground at the time, although there is now."*

- *When university buildings and spaces should be more accessible*

When it came to the actual building, and according to these same students, they encountered certain barriers that hindered their access to the centres as for the most part, there was a total lack or limited number of ramps.

*"RSP7: When I arrived, there was only one stone ramp in one wing of the building, and that is a rectangle, with four faculties all together and there was only one ramp on one of side of the*

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<sup>3</sup>This University currently has 26 teaching faculties located throughout the city.

*building.”*

Likewise, they pointed out that daily life as a student at some faculties, is much more difficult in terms of accessing certain common spaces, such as the library. In this case, they cannot use it because there is no lift. The same holds true for a number of classrooms and offices. They also commented that the doors are very narrow, which makes wheelchair access difficult. Another example is the extremely slippery floor material. These students ran into major difficulties when moving within the actual faculty due to the small dimensions of the common spaces, including corridors, restrooms, classrooms and even the lift.

*“RSP7: Because the lift, you either go in backwards to be able to push the buttons, or when you enter, you have to twist sideways. I would move sideways to somehow push the buttons. So, what happens? The lift has been having problems and it would always stop a step below floor level. One day one of my friends fell, because, of course, by going in backwards, he didn't see the step, and he fell.”*

Obstacles are also seen in the actual building structure and organization of spaces. For example, there are classes structured on steps, or in which the professor is on an elevated platform. For some students, this hinders access to the blackboard.

*“RS1: The elevated platform, for example, I can't get up there, so I can't reach the blackboard; I can't write on the blackboard. That classroom is prepared for people with no special needs.”*

- *When environmental conditions and classroom furniture are not adapted to student needs*

The results prove that university students with disabilities also run into barriers within the classrooms where they study. These barriers include inadequate furniture or furniture that is not adapted to their needs. For example, some students underline the existence of inadequate chairs or desks, which hampers their working under appropriate

conditions. Other students note the problem of moving round the classroom when the furniture is chaotic.

*“RSP9: That’s what happens in my classroom; the seating is not fixed, both chairs and desks are movable, so in most cases, my classmates agree to and leave a more or less passageway, but most of the time, there are chairs in the middle, and of course, I can’t see them, so I hit them.”*

These university students all talked about barriers linked to environmental aspects of the actual classroom. Thus, for some, inadequate lighting in some classrooms was a problem. It prevented them from seeing the screen or the blackboard.

Finally, other students, mainly those with a hearing disability, indicated that there are environmental barriers linked to noise in the classroom. Due to this noise, they have trouble hearing the explanations provided by the professor, or, in some cases, even presenting work required for the subject.

- *When accessing information and virtual spaces, there are added difficulties*

University students with hearing and visual disabilities generally find that accessing information or the learning context can be a barrier. This is especially true when working from a virtual platform or trying to access the information therein. Concerning communication barriers when accessing information, our results indicate that students have problems hearing the lecturer due to poor classroom acoustics, or public address (PA) malfunction.

*RCS3: “That is the case when the lecturer clips on the microphone; most of the time, you can hear how it reverberates because it is my microphone that the teacher uses, right? I can adjust it to listen to the classroom or hear only the teacher’s voice, but most of the time, because the volume is turned up too high, I hear the microphone and I can hear, but it really hard to understand.”*

Another difficulty that students with visual disability face is when accessing

information. This is especially true for class notes, the blackboard or power point presentations covering class material.

*“RTE4: Personally, for me at least, the idea of having blackboards that I can’t see or electronic blackboards that nobody uses, for me that makes it all impossible to follow the class.”*

Students with visual disabilities have pointed out the problems they find when accessing information listed on the bulletin boards (exam/final grades, notifications, information from the secretariat, copy shop, cafeteria, etc.). For the most part, the font type is small, thus making it hard or impossible to see.

*“RS7: That’s something else I didn’t mention before: the grades and notifications. There are times when I can’t see them, well, not sometimes; it is most of the time that I can’t see them. I just can’t see them. I have to wait for them to appear on the Internet, or ask someone, but it is the grades or anything else....it’s impossible to see them, just like the list of accepted students, that too comes with very small print and it’s impossible to see.”*

These university students explained that they also faced difficulties with new technologies (screens and computers that are not adapted, lacking screen readers) and virtual spaces. However, they consider these good tools to access contents for the various subjects but they have problems when it comes to finding and seeing the information found, due to the excessively small font size.

*“RS8: Accessibility when it comes to online registration, accessing the virtual platform, downloading documents and things like that could be improved, although there are many things you can access, but in many cases, it is not as accessible as it seems.”*

Finally, we found that students with visual disabilities have problems with the signposting. The participants in this study commented that at their faculties, the signposting is either poorly indicated or the existing signposting is insufficient for them.

*“RSE8: In a new building, I’m surprised that the actual architects don’t stop and think about location. Because it is true that in this day and age, the elevators have numbers in relief; but*

*once out of the lift, and if I want to go to my classroom, I have to ask. I don't have... so, if we know that the lift needs to have relief numbers, then in the classroom too. Signs in the restrooms, just as on classroom doors, are hard to find."*

## **Conclusions and Discussion**

The right to higher education has been defended since the first half of the 20<sup>th</sup> century and continues today. In recent decades, efforts have been made in a number of countries to guarantee that this right is real and effective for those with disabilities. For example, Spain has worked to guarantee this right with the current Organic Law 4/2007 for universities and Royal Decree 1/2013.

In recent years, the social disability model has been making headway by defending the need for educational contexts to be as inclusive as possible. At the same time, the universal design concept has frequently appeared in the various legislative texts with reference to the rights of the disabled.

In their mission statements, many universities, whether in Spain or abroad, declare the need for disabled students to participate in university life under the same conditions as their classmates. However, the results of this work allow us to conclude that full equality has yet to be achieved; students with disabilities continue to face a variety of barriers that hinder their access to the university and daily student life. With reference to architectural barriers and infrastructures, we can point out urban, transportation, building, environmental and communication barriers. Many of our findings in the analysis coincide with other previous works, some of which are more than a decade old (Alcantud et al., 2000; Borlan and James, 1999; O'Connor and Robinson, 1999; Tinklin and Hall, 1999; Holloway, 2001), while others are more recent (Castallena and Sala, 2005; Díaz, 2012; Luque et al., 2005; Moswela and Mukhopadhyay, 2011; Rodríguez et al. 2009).

The participants in this study, especially those with physical and sensory disability, highlighted (when referring to urban and transport barriers) the problems they faced when trying to reach their faculty. These problems were due to the poor state of the streets and outdoor public spaces around their place of study or the obstacles encountered, in addition to hindrances when using public transportation and their own vehicles.

Nevertheless, these students ran into barriers, not only outside the university campus, but they identified a number of obstacles within university walls. All of these barriers made their student life more difficult, while placing them in a situation of discrimination and dependence upon their classmates. Among these barriers, we can point out those linked to the actual building (small spaces, lack of ramps, lifts, etc.) and those aspects relative to the actual classroom (cluttered furnishings, lack of ramps, furniture that is not adapted or fixed, etc.). Within the classroom, there are additional barriers linked to environmental conditions (noise, and too much or too little light) and communication barriers. Students, mainly those with visual impairments, emphasized the problems when moving around the centre and when accessing the various spaces, as well as difficulties derived from little or no signposting. In the case of these students, they found barriers on more than a desirable number of occasions, which became a major hindrance when accessing and reading important information. This coincides with the results obtained by Borland and James (1999), Castellana and Sala (2005), Fuller et al. (2004) and Holloway (2001) and also indicates that there are a variety of barriers, which, depending on the disability, could be one type or another.

As indicated at the beginning of this work, the data herein is part of a much more extensive study that analyses architectural barriers and infrastructures, among other elements. As explained throughout this article, the results obtained are in line with those

of previous studies. Nevertheless, we consider it essential that future studies perform a more detailed and in depth analysis of each individual architectural barrier and infrastructures that are still found at the university studied. It would be recommendable that future studies approach this topic with an analysis from the various voices or with different informants (not only students with disabilities), using other data collection instruments (for example, observing the spaces and infrastructure in situ) and in a much more specific manner, with a more detailed analysis at each faculty and various university campuses.

The results presented herein reflect the reality of the participants in this study, who suffered the barriers described in first person. They represent students with a variety of disabilities from five fields of knowledge found at the University of Seville. Their considerations about and analysis of the various architectural barriers and infrastructures lead us to conclude, as Hopkins (2011) and Jacklin, Robinson, O'Meara and Harris (2007) defended, that the obstacles that these university students face are in their surroundings. In other words, they are structural barriers rather than personal or individual barriers, as recognised by the social disability model. This reality substantiates that the university centres studied still require a certain degree of adaptation and readjustments to make them fully accessible for and usable by all students. The objective must therefore be to attain full inclusion, using the universal design as the reference and to transforming the existing built environment so as to be less hostile to a wide range of users (Jones, 2014). In this regard, we agree with Pliner and Johnson (2004) who state that improvements in these spaces and infrastructures will be beneficial not only for students with disabilities but the entire university population. As Kitchin (2001) described, it is an "*inclusive landscape*," with all scenarios being contemplated.

## **Limitations of this Study**

One possible limitation of this study is the sample itself. Access to it was a slow process that lasted a complete school year. The law on protection of personal information did not allow the research team direct access to it, and so the Student Disability Service acted as intermediary and contacted the students. At this first moment only about 20 people were interested in participating. Therefore, we had to think of other strategies, such as presenting the project on other campuses and the snowball technique. In any case, we would have liked more students to have participated.

Another limitation of the study is that the data refer to a single university. It would be of interest to find out what is happening at other universities from the perspective of students with disabilities.

## **Declaration of Interest**

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