3

The Training on Universal Design for All: A Case Study from the European Higher Education Area in Spain

Mª Carmen Martín CANOA, [a,1] Alfonso Blesa ROBLES,[b] Yolanda DE LA FUENTE[c]

[a] Universidad de Jaén
[b] Universidad de Jaén
[c] Universidad de Jaén

Abstract. The European Higher Education Area was a landmark in undergraduate and postgraduate training throughout the European Union. Despite the changes it led regarding the contents of all study programmes, there were two issues that remained unsolved. Firstly, gender mainstreaming, and secondly, training in universal accessibility and design for all. Our aim is to analyse the second issue that remains unresolved and share the solution that Spanish university education has drawn up supported by the tertiary sector. Therefore, any physical, social or virtual product must be based on universal design from a training approach. As teachers, our mission is to change the way in which each product is perceived, so that any design is based on universal design standards. In this article, we will explain the pioneering role of the University of Jaen regarding universal design training in Spain. It is essential to be supported by local and global organisations from the beginning, to create specific environments for discussion and design a study plan for all individuals. The main mission is to train but also to raise awareness regarding diversity, as well as training plurality ambassadors from a multidisciplinary approach. The Master's Degree previously mentioned is a pioneering education programme in Spain and it offers training opportunities to all Latin America. It has been on-going for six years and it is updated on an annual basis in order to reflect a changing social reality and provide any professional with online access to the set of subjects composing the programme. Until now, it has been carried out in two different plans: Master's Degree in Universal Design and Design for All, and Master's Degree in Accessibility for Smart City; the Global City. It has already trained more than 250 professionals and one of its main features is the diverse background of students and teachers, in which plurality and diversity converge in their interest for universal design.

Keywords. Education, design for all, universal accessibility

1. Introduction

Education is the fundamental means of individuals' utmost development. It strengthens their skills and ability to fully participate in society. However, there is currently a significant percentage of individuals who are marginalised on a daily basis because of

---

[1] Mª Carmen Martín Canoa, Universidad de Jaén. Departamento de Psicología, Área de trabajo Social y Servicios Sociales. Campus de las Lagunillas s/n. Edificio C5, Dep. 164. 23071. Jaén, España. E-mail: mmcano@ujaen.es.

being different from the rest, despite several advances in a wide range of fields. More precisely, they suffer this marginalisation when attention is segregated or differentiated.

The First National Plan on Accessibility 2004-2012 [1] stated that a society that fights for inclusion and respect of human rights is inevitably forced to find the way of fulfilling the need of all individuals equally. For such a purpose, it must defend and apply universal accessibility not only to physical environments but also to processes, goods, products, services, objects, instruments and devices and/or tools. Only thus can full equality be guaranteed regarding opportunities for citizens and their active participation in society [2].

Legislation on accessibility has reached universities. In Spain, in compliance with European guidelines on accessibility, and as a result of Act 51/2003, of 2 December [3], on Equal Opportunities, Non-Discrimination and Universal Accessibility for Disabled Persons, the concepts of universal accessibility and design for all are becoming more important due to being included in all education areas.

Royal Decree 1393/2007, of 29 October [4], that regulates the arrangement of official university studies foresees the inclusion of study subjects on universal accessibility and design for all in training programmes.

Likewise, the Action Plan from the Spanish Strategy on Disability 2010-2020 [5] includes the following within its objectives:

- To assist educational centres in the process towards inclusion by providing training alternatives, amongst other, for individuals who have become incapacitated.
- To promote knowledge on disability in study programmes by guaranteeing equal opportunities, universal accessibility and design for all.
- To raise awareness in the educational community about the needs of disabled persons.

There is not a single model to follow, but there are possible alternatives to comply with European directives. Such alternatives can be applied to develop competences in individuals who will lead our society in the future. Subsequently, these alternatives will also enable these individuals to exercise their profession taking into consideration the diversity of individuals that compose our society.

Contents related to accessibility, dependency or disability/functional diversity are already included in Social Work studies at Spanish universities. Regarding postgraduate studies, it is particularly relevant to mention the Master's Degree in Accessibility for Smart City: the Global City, from the University of Jaen, due to its specific approach on universal accessibility and design for all.

2. A brief look at accessibility in Spain

As the Green Paper on Accessibility [6] reflected, the relevance of accessibility in Spain as a mechanism to guarantee quality of life and integration of individuals increased when the process of government decentralization and the progressive influence of the association movement for disabled persons were initiated.

Hence, from the late 80s significant government actions for the inclusion of accessibility as a relevant element for action in the public sphere have been developed. The creation of the National Centre for Personal Autonomy and Technical Assistance (CEAPAT in Spanish) is worth mentioning, as well as the passing of a significant number of acts and decrees related to accessibility both at national and regional level.

According to research carried out for the creation of the First National Plan on Accessibility 2004-2012, the actions taken in the field of accessibility are still insufficient due to being irregular and uncoordinated. However, research also shows that expectations of progress are positive, since the understanding of accessibility is moving forward towards considering it as a relevant factor for the quality of life of all individuals.

The main obstacles that were detected are the following:

a. Competence and administration scattering.
b. Broadness and variety of involved sectors.
c. A need for a profound change in perspective and attitudes.
d. Financial implications.
e. Legal framework limitations. It is worth mentioning the lack of precision and the general feature of provisions related to the inclusion of accessibility in urban plans.
f. A difficulty to impose regulations in highly liberalised areas, such as telecommunications or areas which are difficult to control or which are composed of multiple agents, such as construction.
g. A lack of knowledge as well as marginalisation of direct beneficiaries. These groups have been largely considered as passive subjects by society.

Likewise, there is another fact that is worth noting: individuals with functional diversity make a higher than average use of communication and information technologies. Therefore, obstacles that impact on this matter must be tackled. In essence, there is a wide range of elements subject to be revised and adjusted in the accessibility chain in order to achieve fully universal and comprehensive accessibility.

3. A commitment for inclusive education and design for all

In view of the foregoing, it is necessary to develop tools and designs to achieve a significant and effective increase in the so-called inclusive education [7]. The UNESCO understands it as a process of strengthening the ability of education systems to identify and respond to students' diversity of needs by promoting participation and reducing exclusion.

Such transition implies certain changes and adjustments regarding contents, approaches, structures and strategies. That is, a global reform that supports and includes the diversity of all students [8].

All children and young individuals in the world, with their individual strengths and weaknesses, hopes and expectations, have the right to education. Education systems do not have the right to discriminate against certain types of children. Therefore, every education system in every country must adapt in order to fulfil the needs of all children and young individuals [9].

Inclusive education is related to how, where, why and which consequences we educate students on [10]. It is not a matter of including disabled students in classrooms where there are students who do not have disabilities, neither a matter of providing support teachers who assist the needs of disabled students [11], but a matter of moving forward to find new proposals.

Therefore, according to the guidelines suggested in the Curricular Training in Design for All Project [12], we must strive and stand for including the concepts of Design for All and Universal Accessibility in all university studies.

4. A model of best practice: Master's Degree in Accessibility for Smart City. The Global City, organised by the University of Jaen and ONCE Foundation.

As an introduction, it should be noted that specific postgraduate training in Universal Accessibility and Design for All for professionals who work building the environment, products and services, both material and "virtual", is an essential step towards a more accessible world.

It is essential because a society without a professional group that is aware and educated in the respect and practice of its profession regarding the diversity of users, it would be extremely hard to develop products and services adapted to the needs of each individual and that can guarantee equal rights and participation in society.

As it has been already mentioned, Act 51/2003 on Equal Opportunities, Non-discrimination and Universal Accessibility for Disabled Persons sets forth the need to include training in Design for All in the training of professionals from the mentioned areas.

Including such training in study programmes is not an easy task. There are political and legal obstacles (competences in terms of curricula, for instance) and also implied technical barriers. Today, Universal Accessibility is not a discipline per se, for there is not a specific education curriculum for it or a teaching tradition either.

However, the Master's Degree in Accessibility for Smart City; the Global City is already in its fourth edition. It started in the academic year 2014/2015, but it already had a certain history at the University of Jaen. In previous years, this programme was entitled "Master's Degree in Universal Accessibility and Design for All". Throughout its editions similar concepts directly related to accessibility were taught. However, these concepts have been adapted to the new changes and breakthroughs that this matter has brought about year after year. We are currently working on the fifth edition.

5. Methodology

Methodology must aim at providing training to all individuals by combining a series of fundamental elements that are hereby mentioned:

- Availability: To eliminate education burdens and costs and provide child-assistance services to those who are in need. National governments are responsible for financing such aid.
- Accessibility: To erase any form of discrimination based on ethnicity, gender or any other condition.
- Student profiles

- In the current course of the Master's there are 51 students, of which 36 are women (71%) and 15 are men (29%).
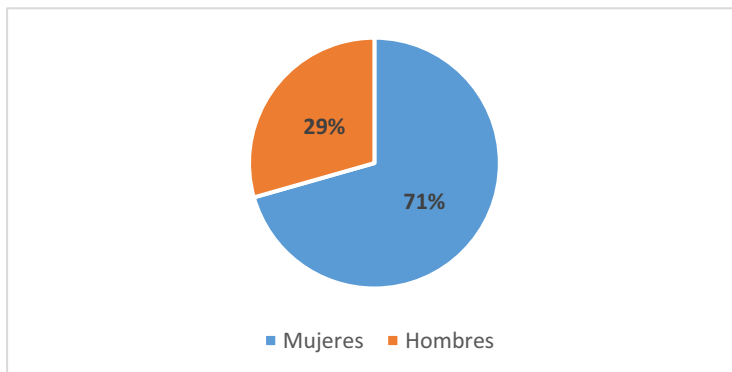

Figure 1. Student distribution by gender. Source: Compiled by the authors.

In terms of nationality and origin of students, Spanish students represent 73% and foreign students 27%.
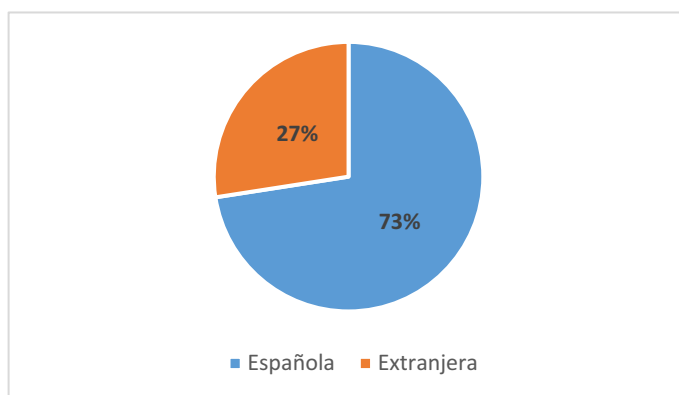

Figure 2. Student distribution by nationality. Source: Compiled by the authors.

Spanish students account for a total of 37 people coming from different Spanish regions (Jaen, Barcelona, Cadiz, Madrid, Las Palmas de Gran Canaria, Santander, Pontevedra, Oviedo, Badajoz, Islas Baleares).

There are a total of 14 foreign students coming from Latin-American countries: Argentina (6), Chile (1), Bolivia (6), Salvador (1).
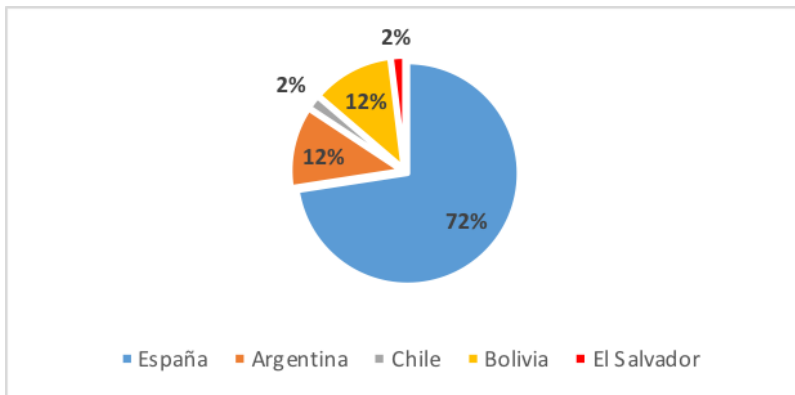
Figure 3: Student distribution by countries. Source: Compiled by the authors.

Finally, regarding the professional profile of the students, Architecture studies prevail closely followed by studies that are more rooted in the social field (such as Social Work, Social Education, Occupational Therapy, Psychology, Educational Practice, Communication, Tourism, Law, Interior Design and others). Engineering studies are also present amongst professional profiles of students (Civil Engineering, Technical Engineering for Public Works and Computer Engineering), as well as Journalism, Geography, Physics, Business and Leisure Activities and Sociology).

5.1. Disabled students

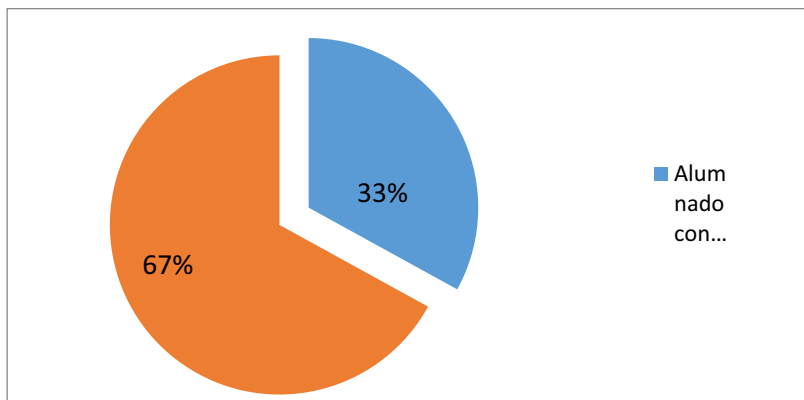33% of the total of students is disabled.

Figure 4: Percentage of disabled students. Source: Compiled by the authors.

- Acceptability: To provide quality education throughout the whole teaching and learning process.
- Adaptability: Everything that students may need [13]

In this sense, we commit to design thinking methodology, which allows identifying opportunities and solving inconveniences. The stages of such design must respond to two main elements:

1. University responsibility, both internal within the own institution and external in terms of networking.

2. Developing innovative training tools enabling closer and more accessible education [8]

The subsequent step towards a second stage would be curricular design thinking, which is related to universal accessibility and design for all understood as a way of thinking that combines knowledge with understanding the context.

These practices have been traditionally related to the fields of design, engineering and even management. However, it is becoming more and more consolidated in the education field, as evidenced by Design Thinking for Educators. It is configured as a guide for teachers by a file called *toolkit* [14], and it explains how to apply this methodology in 5 stages:

1. Sympathising: to put yourself in the position of the individuals you are designing for.

2. Defining: To set a starting point based on the needs of students.

3. Thinking: To generate creative ideas and solutions.

4. Prototyping: Building this new curricular training project in design for all generates a new education respond to these new competences.

5. Testing: To verify and assess these new training proposals by applying and including them in education curricula so as to obtain feedback. This is an essential stage that requires the involvement of all individuals

6. Findings and discussions

Once again, it is worth noting that education is a fundamental element for the full development of individuals, since it strengthens their skills, capabilities and full participation in society.

In order for all individuals to have access to it equally, the pledge must be placed on inclusive education focused on design for all through the methodology of design thinking. This methodology allows identifying opportunities and solving inconveniences.

The purpose of this approach is to change attitudes. Any transformation and adaptation must be carried out based on the context and not individuals themselves. To this effect, teachers must assume three principles: multiple means of representation, multiple means of expression and multiple means of commitment [15].

Likewise, informing and raising awareness of agents involved in the training process must be carried out by taking into consideration the rights of disabled persons as matter of citizenship rather than as a matter of solidarity. In this sense, we hereby present the proposals introduced by the CRUE (2014) in its work "Curricular Training in Design for All", which promotes the necessary tools for the purpose of achieving the following objectives:

a. Raising awareness amongst university students about the need to create respectful environments with regard to human diversity, including the environment itself.

b. Providing future professionals involved in environmental design with tools that will enable them to tackle accessibility issues in their projects.

c. Describing the current reality so that students can be aware of it and be critical when it comes to assessing the advantages and disadvantages of a certain design.

d. Defining the application and involvement of Design for All in different projects.

e. Encouraging future professionals include Design for All in their own projects.

f. Designing new research areas related to Design for All in different fields of academic knowledge.

These elements may be fully or partially included based on various formulas: optional subjects, core subjects, projects, undergraduate and postgraduate final dissertations, doctoral thesis, research lines and awards. In essence, introducing Design for All in academic training can be achieved by including it in all future projects related to human activities and generating new opportunities for professional development.

In this regard, the Master's Degree in Accessibility for Smart City; the Universal City, presented in this article, is considered to be an excellent example of best practices, since it has trained a wide range of professionals worldwide in Universal Accessibility and Design for All from its initiation. The high number of disabled persons who have accessed these studies thanks to its innovative methodology in terms of breaking barriers is also remarkable.

References

[1] I Plan Nacional de Accesibilidad 2004–2012. Recuperado de https://www.sidar.org/recur/direc/legis/ipna2004_2012.pdf

[2] De la Fuente, Y. M., Martín, M. C. y Hernández, J. El nuevo paradigma de la accesibilidad social. Rompiendo barreras invisibles. En Pastor, E. y Cano, L. (Eds.): Políticas e intervenciones ante los procesos de vulnerabilidad y exclusión de personas y territorios. Análisis comparado México-España. Madrid: Editorial DYKINSON, S.L. (2016). pp. 145-156.

[3] Ley 51/2003 de Igualdad de Oportunidades, No Discriminación y Accesibilidad Universal de las Personas con Discapacidad. Recuperado de https://www.boe.es/buscar/act.php?id=BOE-A-2003-22066

[4] Real Decreto 1393/2007, de 29 de octubre, por el que se establece la Ordenación de las Enseñanzas Universitarias Oficiales. Recuperado de https://www.boe.es/buscar/act.php?id=BOE-A-2007-18770

[5] Plan de Acción de la Estrategia Española de Discapacidad 2010-2020. Recuperado de https://www.msssi.gob.es/ssi/discapacidad/informacion/planAccionEstrategiaEspanolaDiscapacidad.htm

[6] VV.AA. (2002). Libro Verde de Accesibilidad en España: diagnóstico de situación y bases para elaborar un plan integral de supresión de barreras. Recuperado de http://sid.usal.es/idocs/F8/8.1-5999/libro_verde_accesibilidad.pdf

[7] Parrilla, A. Acerca del origen y sentido de la educación inclusiva. Revista de Educación, (2002). nº 327 pp. 11-29.

[8] Flores, J.V., Martín, M.C., De la fuente, Y.M. De la necesidad de la inclusión del diseño para todas las personas en el proyecto de formación curricular de arte. El caso de la universidad de monterrey. Revista Lugares de Educacao, (2017). v. 7, n 15, p. 126-139.

[9] Lindqvist, B.. Special Rapporteur on Disability of the Comissión for Social Development. (2002) Recuperado de http://www.un.org/disabilities/default.asp?id=220

[10] Barton, L. Inclusive education: romantic, subversive or realistic? International Journal of Inclusive Education, (1997). vol 1, n 3, p. 231-242

[11] Echeita, G. y Sandoval, M. Educación inclusiva o educación sin exclusiones. Revista de Educación, (2002). n, 327, p. 31-48.

[12] VV.AA. Formación curricular en diseño para todas las personas. Madrid, España. CRUE y Fundación ONCE. 2014.

[13] VV.AA. La Educación como derecho humano. UNESCO, 2005. Recuperado de http://www.unescoetxea.org/dokumentuak/Educacion_Derecho_Humano.pdf

[14] IDEO. Design Thinking for Educators. (2018).   Recuperado de https://www.ideo.com/post/design-thinking-for-educators

[15] Guasch, D. y Hernández. J. Manual para alcanzar la inclusión en el aula universitaria. Pautas de accesibilidad arquitectónica, tecnológica y pedagógica para garantizar la igualdad de oportunidades en la docencia universitaria. (2012). Recuperado de https://www.fundaciononce.es/sites/default/files/docs/manual_alcanzar_inclusion%5B1%5D_2.pdf