

2018

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Recommended Citation

DE LA FUENTE, Y., JIMÉNEZ, D. & HERNÁNDEZ-GALÁN, J. (2018) Five Combined Strategies to Achieve Comprehensive, Effective and Innovative Training in Accessibility and Universal Design. Success Stories in Spain, Universal Design & Higher Education in Transformation Congress, 30th October -2nd November 2018, Dublin Castle

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Five combined strategies to achieve comprehensive, effective and innovative training in accessibility and universal design. Success stories in Spain

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Abstract.

Today, achieving quality higher education in Universal Accessibility and Design is a difficult task. There is a lack of development in this regard within higher education study programmes, so training components must be added to traditional education in order to respond to the 21st century effectively. Therefore, we name hereunder five innovative strategies that can vastly ease the success of this task when combined:

1. Flexibility: Online training in a digital world.
2. Internationalization: Allowing teaching staff and students to experience a global classroom scenario without spatial and temporal boundaries.
3. Transversality: Including individuals with multiple skills in a complex world.
4. Diversity: Sharing experiences from different professional and research areas in a plural world.
5. Connecting with reality: Businesses and Institutions working closely together to design and deliver high quality practical workshops.

The strategies listed come from the evaluation of the different curricular training projects sponsored by the ONCE Foundation and the Conference of Rectors of the Spanish Universities. This framework emerged from the Accessibility White Paper (2003-2010) and the I National Accessibility Plan (2004-2012). These documents referred to a new paradigm in Design for All seeking full equality of opportunities and founded, implicitly, the foundations of how to face the formation of a new way, from the strategies previously indicated.

For this purpose, we will refer to four success stories that took place in Spain:

1. Online Master's Degree in "Accessibility for Smart City; the Global City"
2. MOOC on "Accessible design, Design for All"
3. last three editions of the annual event "MAW Madrid Accessibility Week"
4. "Multidisciplinary workshops on universal accessibility and design at the UDEM in Monterrey – Mexico", organized by the University of Jaen in cooperation with ONCE Foundation.

The success of these strategies within our organisations has encouraged the development of further initiatives to develop and adopt these training tools in an education setting

Keywords. Innovation, Training, Education, Virtuality, Postgraduate studies

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1. Introduction

In a changing world, it is necessary to update contents and innovate with paradigms of action that have arisen in these years, related to integral intervention, design for all people and universal accessibility. The window of opportunity that this new era of intervention provides is the chance to improve social accessibility for all citizens, which will increase social cohesion, equality and territorial and economic balance. Subsequently, this will contribute to improve social benefits and set in motion new labour, economic, cultural and social activities (Cabrero, Trejo and Fernandez, 2011).

Professions and social, economic, technological and cultural contexts are developing, and they have acquired new features that require greater demands in training different professionals. This is the case of economic globalisation, which poses new scenarios regarding social policies; information and communication technologies, which entail new opportunities but also new ways of exclusion; the increasing ageing of the population, which requires redesigning care to reactivate active ageing by increasing care services; the increasing individualism that causes isolation and coexistence problems; and so forth. These changes pose new challenges regarding social intervention due to certain on-going issues of various kinds. These issues are caused by scientific transformations and changes in the structure of society, which lead to new expectations in relation to the necessary labour competences in order to face the aforementioned changes (De la Fuente, 2009).

The European Union has paved the way of the Spanish legislation and actions through its legislation in Universal Accessibility. In the same way as the United Nations Convention on the Rights of Persons with Disabilities and its optional protocol (UN, 2006) do internationally. In Spain, Royal Decree 1/2013, of 29 November, that approves the Consolidated Text of the General Act on the rights of disabled persons and their social inclusion regulates such matter. And such is the impact of this act that it has reached the field of university studies. Royal Decree 1393/2007, of 29 October, that regulates the arrangement of official university studies foresees including subjects on Universal Accessibility and Design for All within education curricula.

Following European directives and supported by the Institute of Social Services and the Elderly (IMSERSO) and the Coordinator of Design for All in Spain, the ONCE Foundation developed in 2010 a project entitled "Curricular Training in Design for All". This project aimed at including the concepts of Universal Accessibility and Design for All in Architecture, Design, IT and Telecommunications and Civil and Industrial Engineering studies.

After the success of the project, the ONCE Foundation considered taking it to a second stage in 2012, by applying a more social approach and extending Design for All to studies that are not so technical and which are not directly related to the matter. The aim of the project remained the same, that is, to train socially responsible professionals providing them with knowledge to promote equality amongst all individuals regardless of their limitations. This second stage addressed Business Management, Law, Medicine, Pedagogy, Psychology and Social Work studies. It also involved the Conference of Spanish University Rectors (CRUE) and it ended in 2017 by involving Teaching and Tourism studies.

After university studies in Spain adapted to the European Higher Education Area (EHEA) for the sake of harmonizing and validating studies and competences within the European region, there were significant changes in Spanish university teaching models.

Study programmes training professionals from all sectors have always adapted to new realities and demands in society. However, there is a remaining need to strengthen the methodology in order to provide a more effective response.

Including and applying this paradigm provides the opportunity to adapt to new demands comprehensively and jointly in all professions. Therefore, it is necessary a new innovate methodology in training and research, including Universal Accessibility and Design for All competences. Hence responding to a new way of doing. In order to achieve broader training for future professionals who seek a society for all, it is necessary to include new training contents by working with professionals who can raise awareness amongst the university community about the need to design subjects dealing with the link between individuals and their environment in a crosscutting manner. We need to create new tools for training in global intervention from the design for all approach.

Including such training within education programmes is not an easy task. There are politic and legal obstacles (competences in terms of curricula, for instance) but there are also technical barriers implied. Today, Universal Accessibility is not a discipline per se, for there is not a specific education curriculum for it or a teaching tradition either. This is the reason why we would like to emphasise the importance for the first time in Spain the Master's Degree in Accessibility for Smart City; The Global City. This study programme gathers the contents set forth by the aforementioned act.

Improving training in global intervention from the approach of design for all is an essential step towards a more accessible world. It is essential because 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. 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 within the training of professionals from the mentioned areas. This is reflected in final tenth provision of this act, which focuses on Universal Accessibility courses and training of professionals: "Within two years of this act entering into force, the national government will develop the education curriculum in design for all, to be applied to all education programmes, including university studies, for the purpose of training professionals in the field of design and construction of the physical environment, building, facilities and civil engineering, transportation, communications and telecommunications, and information society services."

Royal Legislative Decree 1/2013, of 29 November, which approves the consolidated text of the General Act on the rights of disabled persons and their social inclusion, refers to the need to train in Universal Accessibility and Design for All in its Article 20 (d), on Additional Guarantees, as it follows: "Continuous awareness, information and training programmes will be developed for governing boards and teaching staff for the purpose of specialising them in the care for the special education needs of disabled students, as well as providing them with the required knowledge and resources."

Final second provision regarding Training in Universal Accessibility and Design for All concludes the following: "Training in design for all will be included within the design of vocational training studies and the development of the subsequent education curricula. Likewise, the national government will encourage universities to include similar measures in the design of their study programmes."

There is already a legal framework, so it is now the turn for universities to respond and take action in the matter.

Initiating such a process requires a willingness to move forward and initiate an organisational review that seeks to maximise university values, making them available to all individuals in the most efficient and beneficial manner. Social responsibility has a transformative impact on universities and society, since development is achieved through self-analysis, continuous improvement and joint collaboration. It must be noted that training socially responsible professionals is a great asset for society, a necessary human capital to build a world free from discrimination (Guash y Hernandez, 2012).

Ultimately, it would all be part of an international movement, the so-called Rethinking Education in a Changing World. The increasingly complex changes pose new challenges to education systems worldwide in the 21st century. So we need to open discussions about policies based on evidence and research for the future in order to strengthen our collective capacity to develop learning in a global changing scenario. As we bolster our efforts to achieve global education and development goals, it is essential to keep moving forward. It is crucial to set the fundamental principles that can lead policies and practices towards the future of integral social intervention training in a changing world. There is also a need to assess broad development tendencies and their implications for the creation and dissemination of knowledge. These tendencies are framed within the new paradigm of Universal Accessibility and Design for All.

European directives establish that all study programmes related to human beings, the environment and the design of physical and virtual environments must include, to a greater or lesser extent, contents on Design for All and Universal Accessibility. Hence ensuring that these contents are included in all projects related to human activity, in compliance with the European Council Resolution on this matter (Garcia de Sola, 2006).

The project of Curricular Training in Design for All within social studies is being launched at a period of changes in the university system, in a process of adapting to the European Higher Education Area for the purpose of harmonising study programmes within European Member States. A perfect time to incorporate, as mandatory, Design for All in university training programmes.

2. Methodology

The methodology that enables to apply this new strategy is configured according to the following premises:

2.1. Flexibility:

For the first time, online accessible training is offered to all individuals regardless of their capabilities. Set of topics each module comprises is presented through a teaching system based on “teaching capsules” (virtual videos), by which teaching staffs provide students who access these materials with the most relevant knowledge and competences of each matter.



figure 1: Teaching capsule on the Transversality of Accessibility. Yolanda de la Fuente.



figure 2: Teaching capsule on Accessibility and Urban Space. Delfin Jimenez.

2.2. Internationalisation:

This platform allows staff and students to experience a global learning experience without spatial and temporal boundaries. The project was launched thanks to the gathering of excellent teaching professionals. Creating these teaching capsules enabled teaching professionals, researchers and professionals from any institution or company to join the different training projects, regardless of their location.

2.3. Transversality:

Including individuals with multiple skills in a complex world. Our aim is to make this training happen in the 21st century, in which the borders between different disciplines are becoming more and more blurred, as well as interventions are becoming more interdisciplinary.

2.4. Diversity:

Sharing experiences from different professional and research areas in a plural world. Transferring research findings and knowledge from universities to business and vice versa is a crucial factor on which new knowledge is to be built.

2.5. Connecting with reality:

Businesses and Institutions working closely together to design and deliver high quality practical workshops. Developing a virtual project does not exclude the practical part of training. Therefore, we offer the possibility to carry out high-range professional and in-person internships with the best institutions and business in Spain.



figure 3: Presenting the Online Module. Jesus Hernandez-Galan.

These five strategies have been redefined and improved edition by edition, and have led to the achievement of the expected results: more than eight years of first level training. This training has been valued excellently by both the alumni and the teaching staff and the funders, thus fulfilling the concept of integrated quality and didactic coordination both horizontally and vertically.

3. Findings

As a result of this new way of “doing”, we hereby present four success stories:

1. Online Master’s Degree in “Accessibility for Smart City; the Global City”. This study programme has been going on now for four years and it offers accessibility training in three areas: accessibility and physical environment, accessibility and technology, and accessibility and society.



figure 4: Poster from the 4th edition of the Master's Degree in Accessibility for Smart City; the Global City, from the University of Jaen, sponsored by the ONCE Foundation.

2. MOOC on "Accessible design, Design for all". It offers a general approach on the new Design for All paradigms. By identifying accessibility issues related to physical, social and virtual environments, it shows best practices in universal accessibility and design for all in various Latin-American countries. This course has been possible thanks to the implication of the tertiary sector through the ONCE Foundation.
3. Last three editions of the annual event "MAW Madrid Accessibility Week", from which subsequent publications were drawn up.



figure 5: MAW 2014 Publication: Sharing Accessibility

<http://publicaciones.unia.es/busqueda-por-anno/item/madrid-accessibility-week-edicion-2014>

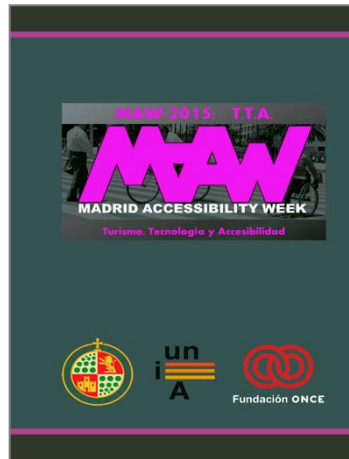


figure 6: MAW 2015 Publication: Tourism, Technology and Accessibility

<http://publicaciones.unia.es/busqueda-por-anno/item/madrid-accessibility-week-turismo-tecnologia-y-accesibilidad-edicion-2015>



figure 7: MAW 2016 Publication: Accessibility and Culture; Technology in art

<http://masteraccesibilidad.ujaen.es/sites/default/files/2017-05/MAW-2016%20%20v.16.pdf>

4. “Multidisciplinary workshops on universal accessibility and design at the UDEM in Monterrey – Mexico”, organised by the University of Jaen in cooperation with the ONCE Foundation. These workshops provided students from different areas with training in accessibility and universal design from a theoretical and practical approach. Thus benefiting from a variety of training backgrounds and professional interests in order to exchange different perspectives on the matter and contribute to a rich knowledge exchange.



figure 8: Practical awareness experience at the multidisciplinary workshop. Monterrey –México.

4. Conclusions

The challenge is served, but undoubtedly, from the University of Jaén and through the different training programs presented here, a training / training / refresher training of professionals from all fields is being promoted, already exercising their profession in the physical environment, social or virtual

Spanish universities must train professionals so that they can take into account the impact of design for all in society, respect the rights of people with functional diversity and apply their knowledge to plan and offer inclusive services.

We must rethink the fundamental principles regarding the future of postgraduate training in a changing world.

As we have outlined in this paper our goals are broad and we propose introducing design for all as both a cross discipline option and directly as part of the contents of specific discipline areas.

This approach is to be applied to almost all studies that are currently offered. The ultimate goal is to raise awareness at university level about the single possible approach for the future, that is, to build a society that is open to human diversity and to its development potential in a broad sense (Casanova, 2008).

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