

Universal design for learning: a challenge and an opportunity for Spanish universities

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There is an increasing diversity of students at Spanish universities. One common feature of today's university systems is that there is greater heterogeneity among their students, or as Thomas (2016) has suggested, participation in universities is broader due to the gradual incorporation of groups that were traditionally marginalized from higher education.

For example, students of different nationalities, ages, cultures, economic statuses or abilities may be present in classrooms (Weedon & Riddell, 2016). This increasing diversity is transforming classrooms and challenging teaching practices, necessitating an in-depth revision of the teaching and learning models in order to adjust them to the new realities and students' needs. There is a need to transition from teacher-centered approaches to those that revolve around students.

Even though an increasingly diverse student body is positive, access is not sufficient, and universities need to guarantee equal opportunities and ensure students stay and finish their degrees successfully (Mayo, 2021). As previous studies have shown, certain students run a higher risk of dropping out from their university programs (Quinn, 2013). Therefore, it is essential to design strategies that encourage these students to remain at university and successfully complete their degrees (Moraña & Biagiotti, 2021).

Indeed, many authors, such as Doughty and Allan (2008) and Hardy and Woodcock (2015), are calling for the need for university learning to be inclusive and for universities to take responsibility for meeting all students' needs. As Gairín and Suárez (2016) conclude, quality universities are only quality if they are also inclusive.

Recently, several measures that work and contribute to success have been studied. Among them, Universal Design for Learning (UDL) has been proven to be effective for all students. In fact, it assumes that there is a wide diversity of students in any classroom and therefore promotes the reduction of barriers to learning (Black et al., 2014; Fovet, 2021). UDL seeks to eliminate the barrier of an inflexible curriculum that hinders students' learning acquisition (CAST, 2018). It seeks to ensure the curriculum fits all students by acting proactively and avoiding last-minute accommodations to make the materials, contents and assessments accessible (Fovet, 2021). For this reason, UDL has been identified as a resource that promotes an inclusive learning experience (Hromalik et al., 2021; Meyer et al., 2014).

In this chapter, we address UDL in the Spanish university system based on its description of the diversity found at universities and contextualizing it within the Spanish university system and university policies. After that, we analyze the training of university instructors in UDL and inclusion. Finally, we address the implementation of UDL in university classrooms.

DIVERSITY AT SPANISH UNIVERSITIES: WHAT DOES THAT MEAN?

The constant increase in students with disabilities is a phenomenon found at the vast majority of universities all over the world. Spain is no exception. In our country, the presence of students with disabilities in university classrooms has grown steadily in the past 20 years (Abad et al., 2008; Álvarez et al., 2012; Moríña & Orozco, 2022) due to the success of the actions and programs enacted in the earlier grades of education (Bilbao, 2010) and the legislative policies around disability implemented in recent decades. Currently, 1.5 percent of students enrolled in Spanish universities have some type of disability (Fundación Universia, 2021). In the academic year 2020-21, a historically high number of students with disabilities enrolled at universities was reached: 23,851 (Fundación Universia, 2021). Even though this is a significant figure, Spain still lags far behind other European countries, where the number of students with disabilities is higher, between 8 percent and 37 percent, depending on the country (Hauschildt et al., 2018). However, this is not the only population that has risen at universities. More recently, other populations have also risen significantly: students from other countries/cultures (European Commission, Directorate-General for Education, Youth, Sport and Culture, 2020), students with intellectual disabilities (Fundación ONCE, 2021), non-traditionally aged students (Faggella-Luby, et al., 2017) and students with a range of gender and socioeconomic contexts, and so on. (Olaussen, et al., 2019). Therefore, universities are increasingly diverse, and we must be aware that this diversity affects how students learn, how they best demonstrate knowledge and their motivation for learning (Olaussen, et al., 2019). Nor should we forget that currently there are significant changes in learning experiences; specifically, there are changes in the ways knowledge is generated and shared among individuals, academic communities and their settings. Therefore, we are facing new and diverse ways of learning. We are welcoming more and more students who have had different pedagogical experiences far from the traditional models, which are still quite common at Spanish universities. Dealing with all this means having greater awareness of the types of learning environments and experiences that strengthen students' learning experiences.

Although it is true that we are all part of diversity and that diversity is an inherent fact of human beings, it is also true that this increasing diversity of students in higher education, especially students with disabilities, has served as a catalyst to re-examine access and teaching and learning processes within the university setting.

THE SPANISH UNIVERSITY SYSTEM AND ATTENTION TO DIVERSITY

The university programs in Spain which allow students to earn official degrees are divided into two levels: bachelor's degrees, which take four years and whose purpose is to prepare students to work professionally, and postgraduate degrees, which include master's (one or two years) and doctorates (between three and five years).

For years now, in addition to face-to-face education, virtual learning platforms (like Blackboard or Moodle) have been used as resources to support the teaching and learning process.

Faculty training in Spain is voluntary and free of charge. Universities have training centers that regularly offer courses on a variety of topics such as teaching methodologies, new technologies, languages and social skills. However, training on inclusive education and attention to disability is less frequent.

Finally, all universities have student support services, which include attention to students with disabilities. By law, universities are obligated to have these services. The main purpose of these offices is to guarantee equal opportunities through university students' full inclusion in academic university life, in addition to promoting the university community's awareness.

These offices provide support, especially for students with disabilities, so they can progress through and finish their university degrees. With student authorization, they are responsible for telling faculty they have a student with disability in their class and the accommodations they have to make so the students can access the curriculum. This means that if the student does not initiate a request for help at the office, the faculty member cannot be notified. Therefore, Spanish instructors may not know whether or not they have students with disabilities (especially invisible disabilities) in their classes until they receive an e-mail from the office or the student voluntarily decides to speak personally with the instructor about their needs.

UNIVERSAL DESIGN IN SPANISH UNIVERSITY POLICIES

The need to have accessible curricula based on universal design, which encompass the diversity of students within university classrooms, should be a priority to consider in curricular design processes (Díez & Sánchez, 2015). Indeed, Spanish university teaching legislation even mentions this need. In Spain, the concept of universal design became particularly prominent with the publication of Law 51/2003 dated December 2, 2003, on Equal Opportunities, Non-discrimination and Universal Accessibility of Individuals with Disabilities (abbreviated LIONDAU), and Law 49/2007 dated December 26, 2007 on infractions and sanctions on matters related to Equal Opportunities, Non-discrimination and Universal Accessibility of Individuals with Disabilities, by introducing the definitions of universal accessibility and design for all at all educational levels. After that, Royal Decree 1393/2007 dated October 29, 2007, establishing the official university education system, promotes its appli-

cation at universities. Therefore, there is a conceptual framework that gives rise to different conceptions and applications in the Spanish university context, with its own contributions to the universal design perspective, as well as its consideration as the underpinning of innovation and research practices at the university (Ruiz et al., 2012; Sala et al., 2014).

More recently, Royal Legislative Decree 1/2013 dated November 29, 2013, approving the general law on the rights of individuals with disabilities and their social inclusion, defines Universal Accessibility as the condition that environments, processes, goods, products and services must meet, as well as objects, instruments, tools and devices, in order to be understandable, usable and practicable for everyone, as safely and comfortably as autonomously and naturally possible. It presupposes the Universal Design or Design for All strategy and is understood despite any reasonable accommodations that must be made. It defines Universal Design or Design for All as the activity in which environments, processes, goods, products, services, objects, instruments, programs, devices or tools are conceived and designed from the very start in such a way that they can be used by everyone to the greatest extent possible without the need for accommodations or specialized designs (Ruiz et al., 2012; Sala, et al., 2014). Finally, reasonable accommodations means any necessary, appropriate modifications and adaptations of the physical, social and attitudinal environment to meet the specific needs of individuals with disabilities that do not impose a disproportionate or undue burden, whenever they are effectively and practically required in a particular case to provide access and participation and to guarantee individuals with disabilities the enjoyment or exercise of all their rights under equal conditions as others.

In fact, the second final provision of this law stresses the need for training in Universal Design or Design for All and explicitly stipulates that training in Design for All should be included in the design of vocational education degrees and the development of the corresponding curricula. Likewise, in the case of university programs, the government will encourage universities to consider similar measures in the design of their degrees. Thus, we can conclude that there is increasing awareness of equal opportunities through the incorporation of the principles of Design for All or Universal Design, which should serve as a motivation for university institutions to analyze and reconsider the curricula of their different degree programs in order to train professionals who are capable of constructing an increasingly inclusive society.

TRAINING OF UNIVERSITY INSTRUCTORS IN DIVERSITY, INCLUSION AND UNIVERSAL DESIGN

In Spain, educational policies ask that university education be based on accessibility and inclusion, although in practice teaching and learning are far from being inclusive and based on UDL. In fact, if we bear in mind the training that faculty at Spanish universities are given, the study conducted by Carballo (2016) concluded that the training plans of a variety of Spanish universities focused primarily on areas like

research and technology, while there is less room for training actions on diversity, inclusion and UDL.

Furthermore, just as in other international settings, in Spain there is not sufficient evidence on studies conducted to assess the impact on the professional development of instructors and on their practices (Gale & Mills, 2013; Hromalik et al., 2021). If there are training actions on these topics, most of them tend to be short term and revolve around workshops focused on accommodations for specific groups of students.

Studies conducted in other countries have concluded that the majority of faculty members are unaware of what UDL is and how to apply it, and therefore they have detected a need for training. The study conducted in Spain by Moriña and Carballo (2017) reached the same conclusion.

Training on UDL is necessary because it has been proven that even short-term training actions, such as those just a few hours long, foster the development of inclusive strategies when creating learning materials and contents that are more accessible for all students (Díez & Sánchez, 2015; Hromalik et al., 2021; Spooner et al., 2007).

Despite the proven benefits of short-term training, Gale and Mills (2013) question this type of training and believe these initiatives are unlikely to foster systemic changes in culture and in practice. For this reason, for there to be a real transformation in teaching practices, longer-term practical training is needed so that what is learned can be transferred to classrooms.

Some of the training experiences we can find in Spain include those at the University of Salamanca and the University of Seville. The former held a training program called “Universal Design for University Learning” (Díez & Sánchez, 2015). The training was offered in a hybrid format combining in-person sessions (two four-hour sessions) with support on a virtual platform with additional contents.

The training consisted of different modules: university and disability, accessibility of educational contents (website, software, contents, etc.), introduction to universal design and introduction to the principles and guidelines of UDL. It also offered specific examples of how they are applied. This training had an impact on instructors’ practices by minimizing the requests for accommodations and benefiting all students.

The training at the University of Seville was called “Walking towards Social and Educational Inclusion at the University.” This was a training program targeted at faculty that sought to train them how to offer an inclusive educational response to students with disabilities (Moriña & Carballo, 2017). The program was offered via a blended learning format. It lasted six months and a total of 54 hours (12 hours in person and 42 online). Students with disabilities were invited to these sessions so that they could talk about their experiences at the university firsthand and answer questions in the online training. The online training was based on learning models with theoretical and practical contents and activities to apply the contents which enabled interaction in discussion forums. The contents of the program were organized into modules that address the concept of disability; the social model of disability and inclusive education; barriers and assistance identified by university students with disabilities; university regulations and support services; different types of disability,

needs and main curriculum modifications; and UDL. The main effects of the training were that the participants changed their conceptions from reactive to proactive. That is, whereas before the training they thought the modifications needed in a class had to be made once the problem was detected and the class began, after the training they thought the opposite. Instead, the professors understood that their teaching projects had to be accessible based on UDL in order to accommodate all students. The professors stated they felt more motivated and sensitive to these students' needs. Another outcome of the program was that the improvements made (e.g., more accessible materials, syllabi based on UDL) benefited all students, not just those with disabilities.

Another example of training in UDL in Spain was at the University of Valencia (Ramos et al., 2022). The purpose of this training was to improve the teachers' attention to diversity practices using UDL. To accomplish this, the training sought to make participants aware of and reflect on the principles and strategies of inclusion in university teaching, to learn about the diversity services and resources available at the university and to re-examine university teaching based on the principles of UDL. This training, in which 19 instructors participated, lasted 20 hours, eight of which were in person and ten used to apply the contents in teaching, along with two hours to review the practices. The main conclusion after implementing this activity was that if the instructors designed their teaching based on the principles of UDL, this would enable students to choose the option that best allows them to learn.

IMPLEMENTATION OF UNIVERSAL DESIGN IN UNIVERSITY CLASSROOMS

The implementation of universal design in university classrooms is currently one of the main challenges facing the academic community. It would be somewhat unrealistic to assume that universal design is being applied without challenges (Fovet, 2021). For example, faculty resistance has been explored by scholars (Anstead, 2016). Even though the framework has aroused interest in the student affairs area, far beyond accessibility (Fovet, 2021), professors are still more cautious in general (Moríña et al., 2020). Indeed, professors may fear that universal design will increase their workload; sometimes they erroneously assume that the implementation of universal design requires technological knowledge; and they may be affected by erroneous perceptions that lead them to think that universal design affects academic standards and integrity (Anstead, 2016). All of this gives rise to considerable obstacles when trying to implement universal design in higher education.

Despite this, there are promising reports of individual faculty-led initiatives in different countries (e.g., Alba et al., 2015; Fidalgo & Thormann, 2017). However, issues regarding implementation and strategic development are not addressed in the literature. On the majority of campuses, it is still unclear what stakeholders should support and promote the implementation of UDL (Fovet, 2020, 2021). In some countries, the services that attend to individuals with disabilities at the universities

have led this drive, but they are intrinsically ambivalent about UDL and therefore are most likely not the most natural ally to spearhead this process of change (Fovet, 2021). There have also been attempts to promote UDL through teaching and learning offices, but the results have not been convincing from a strategic standpoint (Davies et al., 2013; Singleton et al., 2019). This is largely because none of these stakeholders actually has much power to force change on campus; these offices tend to have easy access to faculty who are curious and interested in transforming their pedagogy, but it is difficult for them to reach professors who resist change (Fovet, 2021). Academic freedom and hierarchical issues inherent to higher education prevent pedagogical policy from being imposed on faculty (Woods et al., 2016). In consequence, there has been an increasing debate on whether UDL should be implemented “top-down” or “bottom-up,” and there are no definitive solutions in the literature (Fovet, 2020). Therefore, this is a far-reaching process of change taking place in institutions that are complex by their very nature.

We find very few experiences of UDL being implemented at Spanish universities, or at least of experiences that have been published. One was led by Alba et al. (2015), who designed two subjects in education degrees based on UDL. Specifically, they analyzed the use of UDL in teacher training on the practical integration of its principles in relation to the use of Information and Communications Technology (ICT) and in classes taught in virtual learning environments. The authors were very positive about this model’s potential to improve attention to diversity and quality education for all university students, as well as its strategic role in teacher training. A descriptive study conducted by Sánchez et al. (2016) analyzed the requests for curricular accommodations by university students with disabilities from the vantage point of UDL. The results showed that curricular design following the principles of UDL may minimize requests for special accommodations, even in groups of students with greater difficulties. Another experience was conducted by Márquez et al. (2022) in the elementary school teacher training degree. The experience was positively rated by students. The benefits highlighted were the development of greater critical capacity, more in-depth reflection on the subject matter, construction of shared knowledge and greater enrichment. Finally, the project led by Ruiz-Bejarano (2022), planned a class in the elementary school teacher training degree based on the principles of UDL. The results revealed that the students were highly satisfied with the experience and particularly valued everything related to self-regulation of learning. These studies revealed that the research existing in Spain mixes UDL training and implementation, while there are no studies that solely and rigorously assess UDL implementation.

Given this, we can say UDL is only tentatively present in Spanish universities and specifically that in Spain there is a long, hard road ahead in terms of both implementing UDL and generating scientific evidence that can rigorously provide us with information on the difficulties and real potential of implementing it in our university setting.

FUTURE CHALLENGES AND OPPORTUNITIES FOR PROGRESS

To conclude this chapter, we want to present some of the main challenges which we believe Spanish universities are facing in order to implement universal design. We also want to propose a set of opportunities that we believe can be created by implementing UDL in our setting.

Main Challenges

- Putting an end to “one size fits all” monoculturalism. The inclusion of individuals with disabilities in the university setting has revealed that the university pedagogical model is generally based on the assumption that all students are alike and learn the same way. This idea is deeply rooted in the collective imagination of university instructors and constantly leads to major learning barriers for many students, not only those with disabilities. However, to implement UDL, it is essential to understand that no two students learn the same way and that the learning objectives can be achieved in different ways. This shift in mindset among instructors is not easy, and therefore it is one of the main challenges facing Spanish universities.
- Acquiring knowledge of teaching and learning theories and incorporating technology. To implement UDL, it is essential to be knowledgeable about the different teaching and learning theories as well as to have a sound mastery of the technologies. In this sense, Spanish university faculty do not have much pedagogical training, and despite their efforts in recent years, universities often do not have the technological infrastructure needed. Therefore, just as in the prior educational stages, it is essential to foreground teacher training and invest in digitalizing campuses. As we have seen, we already have several teacher training experiences on UDL in our country which can serve as inspiration and guidance to extend it to other universities
- Actually enacting educational policies that facilitate the implementation of universal design. Even though Spanish university policy has had a legislative framework in favor of the implementation of UDL at universities for several years now, the efforts made to actually implement it do not seem to be sufficient. Therefore, it is essential to put the importance of fulfilling the laws in force at the core of the university debate. Implementing UDL is not merely a “fad” but instead means responding to everyone’s right to quality education.
- Guaranteeing physical and virtual accessibility for everyone. There is no doubt that work has been done in the past decade to ensure the physical and virtual accessibility of university campuses, but there are still many barriers in both environments. It is a fact that Spain has very old universities which require huge budgets to eliminate these barriers but prioritizing this kind of policy is still vital in order to guarantee everyone’s right to quality education.

- Conducting more research on universal design. In order to make inroads in implementing UDL both nationally and internationally, much more research is needed to scientifically endorse this model in the university setting and provide us with guidance about how to move forward with scientific rigor.

Main Opportunities

- Building fairer and more equitable universities. UDL is one of the prime opportunities to reformulate the university education system because it provides the possibility of boosting the participation and progress of the entire university community, not only students. It is clearly an incredible opportunity to work towards the democratization of university institutions.
- Reflecting on and reevaluating university instruction. Implementing UDL requires the effort of an in-depth reflection on teaching and learning processes which enables us to become aware of our own teaching practice in order to improve it. Therefore, it is a prime opportunity to improve the teaching quality at our universities and to highlight the importance of it.
- Working towards personalized education. The inclusive principles proposed in international policies are dictating the pathway of education through the personalization of teaching. In this sense, applying powerful digital technologies along with the principles of UDL would allow curricula to be personalized for students much more easily and affectively. The advances in technology and the educational sciences have enabled “on the go” personalization of curricula in a more practical and profitable way, and many of these technologies come with support systems, scaffolding and challenges which help the students to understand, navigate and engage with the learning environment.

Finally, we are convinced that if universities have the policies, structures and resources they need, university institutions will be accountable and rise to the needs of the citizens of the future as the engines of social development.

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