
Conference papers

Graduate School of Creative Arts and Media

2016-11-03

Universal Design in Curriculum Development to Address Issues of Socio-Cultural Capital in Third-Level Education

Brian Vaughan

Technological University Dublin, brian.vaughan@tudublin.ie

Follow this and additional works at: <https://arrow.tudublin.ie/gradcamcon>



Part of the [Educational Sociology Commons](#), and the [Inequality and Stratification Commons](#)

Recommended Citation

Vaughan, B. (2016) Universal Design in curriculum development to address issues of socio-cultural capital in third-level education. *Higher Education in Transformation Symposium, Ontario, Canada, Nov. 2016.*

This Conference Paper is brought to you for free and open access by the Graduate School of Creative Arts and Media at ARROW@TU Dublin. It has been accepted for inclusion in Conference papers by an authorized administrator of ARROW@TU Dublin. For more information, please contact arrow.admin@tudublin.ie, aisling.coyne@tudublin.ie.



This work is licensed under a [Creative Commons Attribution-NonCommercial-Share Alike 4.0 License](#)

Universal Design in curriculum development to address issues of socio-cultural capital in third-level education

Dr. Brian Vaughan (brian.vaughan@dit.ie)
School of Media, DIT.

Abstract

Universal Design for Instruction (UDI) is primarily focused on ensuring that curricula are as accessible to students with a range of disabilities and difficulties. However, UDI can also be leveraged as a means of addressing issues of socio-cultural capital in third-level education. The assumption that all students belong to the dominant habitus can have a detrimental effect on those seen as being external to it. This paper examines the use of UDI as part of a wider approach to curriculum development as a means of addressing these issues. This is especially pertinent in light of the amalgamation of a number of technical Institutes (DIT, ITT, and ITB) as part of the development of a Technical University in Dublin (colloquially referred to as TU4Dublin), as the student population across these institutes encapsulates a wide-range of socio-cultural, and educational backgrounds.

1 Introduction

The Irish student population is becoming ever more ethnically and racially diverse, and Government policy aims to increase participation in higher level education of both immigrant and underrepresented groups. A more diverse student population bring challenges, in particular, differences in socio-cultural capital and habitus, that do not necessarily align with the dominant institutional habitus. In this context, there is a need to consider a novel approach to curriculum development. This paper argues that Universal Design for Instruction (UDI) can be leveraged to address issues of socio-cultural capital and habitus in third-level education: the ten principles of UDI are well founded, needing only to be recontextualised to address these issues.

The first section examines the changing demographics of Irish society and, by extension, the changing demographics of the student population. Government policy to increase participation among immigrant and disadvantaged groups is examined, before a discussion on Universal Design (UD) its antecedents, and its motivations. This is followed by a discussion on Universal Design for Instruction (UDI), examining how it grew out of the architectural concept of Universal Design, and was driven by legislation enshrining equality and anti-discrimination policies in law. The concepts of socio-cultural capital and habitus are discussed, examining how they maintain existing social hierarchies and how this is manifest in educational institutions. The final section considers curriculum development and how UDI can be used to address issues of socio-cultural capital and habitus in third-level education, while also being compatible with contemporary progressive theories of learning.

2 A changing student population

In recent years, Irish society has become far more ethnically diverse: the 2011 census (CSO, 2012) found that since the 2006 census, there was a 30% increase in the number of non-nationals, a total of 124,624 persons. The largest increase of 93.7% was amongst Polish nationals. The fastest growing groups were Romanians, Indians, Polish, Latvians and Lithuanians. From an educational perspective, 12% of the primary school population and 9% of post-primary schools were newcomer children (DoES, 2010). Research by the Irish Higher Education Authority found that, overall, ethnic minorities were underrepresented in higher education, along with students from socially disadvantaged backgrounds (HEA 2004). A more ethnically and socially diverse society will inevitably result in more diverse third-level student population, notwithstanding socio-economic obstacles to participation.

A recent consultation paper by the Irish Higher Education Authority (HEA) recommended that the overall student body in higher education better reflect the diversity of Ireland's population, with a key objective being "to promote access for disadvantaged groups and to put in place coherent pathways from second level education, from further education and other non-traditional entry routes" (Higher Education Authority, 2014, p 5), and "to ensure that the student body entering/participating/completing higher education reflects the diversity of Ireland's population" by increasing the "numbers and proportions of entrants from non-traditional route" (Higher Education Authority, 2014, p 6). While the document does not explicitly mention immigrants, the term 'under-represented' used in the report is stated to include ethnic minorities..

Similarly, the Irish government's educational policy aims to increase participation among disadvantaged groups. The Education Act, 1998, defines educational disadvantage as "the impediments to education arising from social or economic disadvantage which prevent students from deriving appropriate benefit from education in schools"(Government of Ireland, 1998, p. 32). In 2006/2007, the Irish government introduced the Delivering Equality of Opportunity in Schools (DEIS) initiative to address the educational needs of children from disadvantaged communities, through the provision of additional supports and resources such as an improved staffing schedule, a grant based on disadvantage and enrolment, access to home school community liaison services, access to school meals etc. (Weir, Mcavinue, Moran, & Flaherty, 2014). DEIS was one part of an overall strategy to increase participation by under-represented groups in higher education by the Irish Government (The Department of Education and Science, 2005). While there is a marked difference in the number of students from DEIS school and non-DEIS schools in progression to third level education, (24% compared to 49%) (Smyth, McCoy, & Kingston, 2015), this is being addressed through a number of schemes at government and at institutional level. The Irish government has introduced a bursary scheme to encourage top-performing students from DEIS schools to progress to third-level education (DoES, 2016). A number of third-level institutes have programmes to increase the number of students from disadvantaged backgrounds: the majority of Third-level colleges in Ireland are members of the Higher Education Access Route (HEAR) scheme, which offers places on reduced CAO points and extra college supports to students from socio-economically deprived backgrounds (Access College Ireland, 2016). Many institutes also run their own institutional initiatives: Trinity College Dublin (TCD) runs the Trinity Access Programme (TAP) (TCD, 2016) and DIT provides the DIT Access Service programme (DIT, 2016).

3 Universal Design for Instruction (UDI)

Universal Design for Instruction is a model of structuring and presenting lecturing and teaching material in a manner that ensures it is accessible to students with a range of disabilities and difficulties. It is derived from the architectural principle of Universal Design, where a built environment is made as accessible and usable by all people, as much as possible, without the need for any specialist design or adaptation (Mace, Hardie, & Place, 1996). Universal Design consists of seven core principles: equitable use, flexibility of use, simple and intuitive use, perceptible information, tolerance for error, low physical effort, and size and space for approach and use (see Appendix A, section 8 for details, taken from NCSU, 1997). These principles enable architects and planners to ensure that as many people can use the space as best as possible by incorporating the relevant principles and subsequent guidelines. As Mace, Hardie and Place note, the number of people with disabilities “obligates designers to consider the entire life span, including periods of temporary disability, of future users of the spaces or products being designed” (Mace et al., 1996, p. 1). They note that, in 1996, 36 million Americans had a permanent disability, and more recent figures show a large increase in subsequent years: in 2010, 56.7 (18.7%) of the population had a disability, with 38.3 million (12.6%) having a severe disability (Brault, 2012). From a European perspective, in 2011, 42 million people in the EU-27 are disabled, while a further 44 million had difficulty with basic activities and 35 million had a disability in employment (Eurostat, 2011). In an Irish context, the 2006 census showed that 394,000 people (9.3% of the population) had a disability (CSO, 2006). The pertinent fact is that a large portion of the US and EU populations have a disability, further justifying Mace et al.’s original assertion. This obligation has been driven by a number of acts, that enshrined disability rights in legislation, both for physical spaces and educational access. These include, in an American context, the Architectural Barriers Act of 1968; the Rehabilitation Act of 1973; the Education for All Handicapped Children Act of 1975; the Technology Act of 1988, and the Americans with Disabilities Act of 1990 and its 2008 amendments (McGuire, 2013). In a European context, there are numerous directives and regulations on disability across a number of areas throughout the EU (Holtmaat, Terpstra, & Waddington, 2009). In Ireland, the primary piece of legislation is the Disability Act 2005, which includes a provision to establish a centre for excellence in universal design, and builds on existing Irish policy and legislation such as the Employment Equality Act 1998; the Equal Status Act 2000; the Equality Act 2004 and the Education for Persons with Special Educational Needs Act 2004 (Department of Justice, 2005).

The adoption of UD as an educational framework was initially advanced by Scott et al, who examined a number of sources for practice in third-level education, in conjunction with the seven principles of Universal Design, and derived the original Universal Design for Instruction. They built upon the original seven principles of UD to create the nine principles of practice of UDI (see Appendix, Section 8.2 for details) (S. S. Scott, McGuire, & Shaw, 2001; Sally S. Scott, McGuire, & Foley, 2003). The adoption of UD as a framework within which to deliver instruction derives from the obligation and momentum brought forward by the numerous pieces of legislation listed previously. Equity of access for people with disabilities was seen as not simply a requirement for physical spaces but for educational access too: more students began to pursue higher education, driven by the the various pieces of legislation affording protection from discrimination (McGuire, 2013). This is manifest in the provisions third-level institutes make to accommodate students with a range of disabilities. In the context of DIT, as with other institutes in Ireland, there is a dedicated service for students with disabilities that attempts to ensure they are facilitated as best as possible. UDI can be seen as a logical progression of the core UD philosophy and principles; equity of access is of limited use if the instructional material and methods do not provide the same level of accommodation.

The inherent flexibility and proactive ideology of UDI ensures its compatibility with progressive learning theories. These started to gain traction in recent years as educational theory and practice began to move away from being entirely about knowledge transfer, and more about producing learning for students, using a variety of means (Barr & Tagg, 1995). The broad constructivist concepts of communities of learning and building upon a learners previous experiences, and knowledge (Henson, 2003), necessitates a proactive approach. Likewise, this move away from seeing teaching and learning as being primarily a passive experience (chalk-and-talk, the sage-on-the-stage etc.), to being a more active, engaging, and ultimately, a reflexive experience, can only be facilitated by a flexible and proactive approach such as UDI. Moreover, Ginsberg and Schulte found that lecturers who had a social constructivist view of disability felt that accommodation of these students was an extension of their good teaching, and concluded that a social constructivist perspective was a necessary precursor to the implementation of Universal Design for Instruction (UDI) (Ginsberg, S. & Schulte, K., 2008).

UDI can encompass other complimentary theories and practical approaches to the delivery of learning content: the multimedia principle suggests that certain combinations of text and imagery better enables learners to recall and apply learnt material (Mayer, 1997; Schnotz & Bannert, 2003). Neil Flemings VARK model (Fleming & Mills, 1992) postulates that learners learn through four main modalities: Visual, Aural, Read/Write, and Kinesthetic. Thus lecturing material should be delivered via a range of modalities to meet the diverse needs and capabilities of students, satisfying a number of UDI principles, particularly Equitable use (Appendix, section 8.2.1); Flexibility in use (Appendix, section 8.2.2); and Perceptible Information (Appendix, section 8.2.4).

4 Socio-cultural capital and habitus in education

Pierre Bourdieu defined social capital as “the sum of the resources, actual or virtual, that accrue to an individual or a group by virtue of possessing a durable network of more or less institutionalized relationships of mutual acquaintance and recognition” (Bourdieu & Wacquant, 1992, p. 119). Bourdieu was describing the culmination of a number of variables that enable people to understand, integrate, and navigate the complexities of modern societies. Bourdieu saw social capital as something that can be used by those in position of power or dominance to exclude people from various social groups or structures (Bourdieu, 1986). Similarly, Bourdieu saw cultural capital as something used by social groups to maintain a hierarchy and to identify them as being distinct (above or below) other societal groups (Bourdieu, 1984). From this perspective, socio-cultural capital functions as a set of exclusionary criteria, through ensuring a tacit set of socio-cultural requirements little understood by those external to the social groups. In this way, the excluded are in a catch-22 situation: the socio-cultural capital required to be included in these groups is contingent on being a member of these groups in the first place. James Coleman has a broader and seemingly less pessimistic view of social capital, seeing it as a resource that is available to an individual within a society (Gauntlett, 2011). For Coleman, socio-cultural capital has three strands: a means by which individuals understand their obligations and societal expectations, contingent on a level of trustworthiness of a particular social environment; as an information channel about social relations, providing a basis for action within a society and acquired mainly through social relations and interaction; and as a source of information regarding societal norms and sanctions that informs a person about how and when to act in certain social situations and contexts, and the societal sanctions for deviation (Coleman, 1988). Coelman’s concept is not dissimilar to Bourdieu’s, as both see social capital as an inherently important aspect of societal existence,

and one that is vitally important to navigating complex social structures. However, Coleman's concept of social capital can be just as exclusionary: those newly arrived within, or unfamiliar with, a society will lack understanding of their societal obligations and expectations; they will have little or no access to these information channels and will have little or no knowledge about societal norms and potential sanctions.

This conundrum is encapsulated by Bourdieu's notion of habitus, an embodiment of social and cultural capital, manifest as a general set of dispositions, and consisting of an individual's tastes, interests, understandings, and beliefs, brought about through interaction with society and cultural structures (Bourdieu, 1984). Habitus encapsulates Coleman's concept of social capital as it can be seen as a codified set of practices and knowledge around obligations and expectations, social relations, and information about societal norms. A codified set of practices is more easily understood within a group from which those practices derive or with which the group members are familiar, and less so to those external to the group. Those within a certain habitus are almost unaware of it, taking most of the conventions and inherent tacit knowledge for granted (Bourdieu & Wacquant, 1992); one only becomes aware of one's own habitus when in a situation where another habitus is dominant.

Bourdieu and Passeron (Bourdieu & Passeron, 1977) saw education as being the sum total of institutional mechanisms that ensured generational transmission of inherited culture (accumulated information). Likewise, Lyotard, argued that the goal of higher education is to maintain the status quo via a functional pragmatism that ensures the continuation of existing social structures (Lyotard, 1984). The pedagogical actions that transmit Bourdieu's and Passeron's inherited culture often correspond to the vested interests of groups or classes within society, resulting in the reproduction of social structures via the maintenance of the structure of distribution of cultural capital among these various groups (Bourdieu & Passeron, 1977). Thus a dominant institutional habitus will inherently seek to maintain and reproduce the socio-cultural structures and corresponding mechanisms of distribution of that habitus group: habitus is therefore a self-perpetuating entity that maintains the socio-cultural mechanisms and structures that in turn maintain it.

5 Curriculum development

Liz Thomas notes that institutions habitually assume that all students are members of the dominant habitus, usually given to be white, male, middle-class and able bodied. Moreover, it is assumed that this is the 'correct' habitus and therefore all students are treated as if they possessed it, with this being reflected in assessment strategies, among other things (Thomas, 2002). Bourdieu noted that institutional curricula was often biased in favour of the dominant institutional habitus, thus disadvantaging those external to it (Robbins, 1993). Jill Lawrence (Lawrence, 2006) makes the point that some students are seen as not having the necessary socio-cultural capital to readily and easily assimilate into the academic university culture, being from underserved backgrounds. This alienation, and difficulty in assimilating can only be compounded by encountering a self-perpetuating dominant habitus, different from one's own and one that further enhances the struggle with a sense of being that a transition from second-level to third-level can bring (Kahu, 2013; Lawrence, 2006; Mann, 2001). Ontological arguments that institutions need to consider how students act and who they are, and not just engage them as a person (Dall'alba & Barnacle, 2007), is something that cannot be done without awareness and consideration of the habitus from which a student derives. It is therefore pertinent to consider how best to develop curricula that can serve all students, both from a migrant backgrounds and from underserved backgrounds, and that can provide some

points of reference or recognition for students lacking the socio-cultural capital to easily assimilate.

While not the ultimate panacea, development of curricula that is cognisant of these issues, and one that adopts the principles of UDI, will go some way in addressing these issues of socio-cultural capital in third-level education. The UDI principles, although originally developed to address the needs of students with a range of disabilities, can be re-contextualised, as needed, to address the issues discussed above. The principle of equitable use (8.2.1) only needs slight reinterpretation to ensure instruction is accessible by students with diverse socio-cultural abilities and knowledge. Language and examples used should not be overly technical or elaborate and should make recourse to as wide a range of examples as possible. Likewise, the principle of flexibility in use (8.2.2) can be used to ensure that instruction accommodates abilities and knowledges from various different habitus. The principles of simple and intuitive instruction (8.2.3), and perceptible information (8.2.4) can be used to ensure that material makes reference to artefacts, concepts, structures and mechanisms from various different habitus groups, and not just from the dominant institutional habitus. The principle of tolerance for error (8.2.5) should ensure that material and classes don't penalise students for habitus based errors (e.g. not being aware of a cultural or social convention external to their own habitus). The principle of size and space for approach and use (8.2.7) should ensure that use of a space and relevant materials is not contingent on a student having prior knowledge or experience of either, possibly due to being external to a student's habitus: for example, not assuming all students are familiar with software and computer systems that may be ubiquitous in the dominant habitus, but not in others. The constructivist based principle of a community of learners (8.2.8) and the principle of an instructional climate (8.2.9) should encourage students to be aware of, and engage with, their own habitus based experiences and knowledge as part of their learning experience.

Within a broader transformative learning context, adoption and contextualisation of the UDI principles can better enable students to engage in critical reflexivity and achieve a better understanding of their own learning process (Mezirow, 1994). In this context, awareness and transformation of a learner's own perspective and habitus is a necessary part of the learning process. This is especially pertinent in addressing issues discussed above: awareness of one's own habitus as part of the learning experience makes it less of an issue, and constructs it as an intrinsic part of the learning process, as opposed to being a barrier, especially when it conflicts with a dominant institutional habitus. This is of particular importance for students who are seen to not have the correct socio-cultural capital to easily assimilate (Lawrence, 2006). Furthermore, by promoting interaction and communication between students and faculty, students and faculty can gain a better understanding of their own habitus experiences and that of others, while potentially facilitating the transfer of individual tacit habitus knowledge. As Liz Thomas notes, "methods of teaching, learning and assessment provide sites for interactions between staff, students and their peers, and with institutional structures, and thus have a central role in both changing and reproducing social and cultural inequalities" (Thomas, 2002, P. 433). This approach aligns with more recent work that views a curriculum as a process, as opposed to a product that is derived from the use of generic templates and teacher based assumptions about student needs (Fraser & Bosanquet, 2006). Curriculum as a process views it as an ongoing social activity, where changes in practice and content derive from the day-to-day interactions of students and teacher, and as a response to a rapidly changing society (Cornbleth, 1990), similar to Thomas' view regarding interaction as a mechanism of potential change. Similarly, other researchers see higher-education, and by extension, curriculum, as an agent of change, especially in the area of social inequality. Amartya Sen believes education is an important agent

of change to address issues of inequality through focusing on what a student can do or be, as opposed to just focusing on their commodified acquired skills (Sen, 1999). Melanie Walker sees education as a means of addressing inequality as education provides students with opportunity, and so it is imperative that all students are afforded the same chance to take advantage of these opportunities (Walker, 2012). This capabilities approach can move beyond the limitations of habitus, and to avoid situations where students internalise a second-class status, due to encountering situations where they are discouraged from wanting certain things because they are seen as off-limits to them (Bitzer, Hamann, Hall, & Wosu, 2015). For Walker, a curriculum “frames what counts as valid knowledge and, more widely, the range of formal learning opportunities available to students (Walker 2012 : 449).

6 Conclusion

A changing, more diverse, student population, driven by government policy and legislation, requires new approaches to curriculum development, especially to address issues of socio-cultural capital and the resultant habitus of the students. This is necessary to ensure a more inclusive learning environment and to ensure the dominant institutional habitus does not have an alienating effect on students from different habitus and who, traditionally, are not seen as having the necessary socio-cultural capital to easily integrate. This paper has argued that the existing Universal Design for Instruction (UDI) framework is suitable for this, requiring only some re-contextualisation to address the issues of socio-cultural capital. Furthermore, the inclusive and flexible nature of UDI, lends itself well to the progressive learning theories of constructivism and transformative learning. As Donnelly and Fitzmaurice note (Donnelly & Fitzmaurice, 2005), the process of developing modules within a curriculum must take into account internal and external factors at the planning stage and it is imperative that the socio-cultural capital and habitus of students must be part of this consideration. While the curriculum is only one aspect of a wider educational totality, it is a vitally important aspect, and is usually the framework within which students have the most engagement with each other, lecturing staff and the bureaucracy of the institute. Therefore, the curriculum is an ideal place to affect change to address issues of socio-cultural capital and habitus in third-level education.

7 References

- Access College Ireland. (2016). Higher Education Access Route (HEAR).
- Barr, R., & Tagg, J. (1995). From Teaching to Learning - A New Paradigm for Undergraduate Education.
- Bitzer, V., Hamann, R., Hall, M., & Wosu, E. (2015). Against Inequality: Towards a Curriculum for Social and Environmental Innovation. In V. Bitzer, R. Hamann, M. Hall, & E. W. Griffi (Eds.), *The Business of Social and Environmental Innovation*.
- Bourdieu, P. (1984). *Distinction: A Social Critique of the Judgement of Taste*. (K. Paul, Ed.) *Distinction: A Social Critique of the Judgment of Taste*. London: Routledge.
- Bourdieu, P. (1986). The Forms of Capital. In J. G. Richardson (Ed.), *Handbook of Theory and Research for the Sociology of Education*. (Vol. 16, p. 571).
- Bourdieu, P., & Passeron, J.-C. (1977). *Reproduction in Education, Society and Culture*. *Reproduction in Education, Society and Culture*.
- Bourdieu, P., & Wacquant, L. (1992). The Practice of Reflexive Sociology. *An Invitation to Reflexive Sociology*.
- Brault, M. W. (2012). Americans With Disabilities: 2010. *Current Population Reports*, 423(July), 70–131. <http://doi.org/July 2012>
- Coleman, J. S. (1988). Social Capital in the Creation of Human Capital. *The American Journal of Sociology*, 94(1988), S95–S120.
- CSO. (2006). *2006 Census of Population – Volume 11 – Disability, Carers and Voluntary Activities* (Vol. 11).
- CSO. (2012). *Central Statistics Office: Census 2011*.
- Dall'alba, G., & Barnacle, R. (2007). An ontological turn for higher education. *Studies in Higher Education*, 32, 679–91.
- Department of Justice, E. and L. R. (2005). *Guide To the Disability Act 2005*.
- DIT. (2016). DIT Access Service.
- DoES. (2010). *Department of Education and Skills Annual Report 2010*.
- DoES. (2016). *The Third Level Bursary Scheme 2016* (Vol. 2016).
- Donnelly, R., & Fitzmaurice, M. (2005). Designing Modules for Learning, 1–20.
- Eurostat. (2011). Disability statistics - prevalence and demographics.
- Fleming, N. D., & Mills, C. (1992). Not another inventory, rather a catalyst for reflection. *Professional and Organizational Development Network in Higher Education*, 11(1), 137.
- Fraser, S. P., & Bosanquet, A. M. (2006). The Curriculum? That's just a unit outline, isn't it?
- Gauntlett, D. (2011). Excerpt from Making is connecting. Retrieved from www.makingisconnecting.org
- Ginsberg, S., & Schulte, K. (2008). Instructional accommodations: Impact of conventional vs. social constructivist of disability. *Journal of the Scholarship of Teaching and Learning*, 8(2), 84–91.
- Government of Ireland. Education Act, 1998 (1998).
- Henson, K. T. (2003). Foundations for learner-centered education: a knowledge base. *Published in the Journal Education*, 124(5), 12.
- Higher Education Authority. (2014). Consultation Paper: Towards the development of a new National Plan for Equity of Access to Higher Education. *Higher Education Authority*, (August).
- Holtmaat, R., Terpstra, G., & Waddington, L. (2009). Annotated review of European legislation which makes a reference to disability. *Area*, (June), 56.
- Kahu, E. R. (2013). Framing student engagement in higher education. *Studies in Higher*

- Education*, 38(5), 758–773.
- Lahiff, A. (2009). *Curricula Debates in Higher Education – an overview*.
- Lawrence, J. (2006). Engaging first year students: a collaborative approach implemented in a first year nursing course, 1–10.
- Lyotard, J.-F. (1984). *The Postmodern Condition: a report on knowledge theory and history of literature*,. (M. U. P. G. Bennington & B. Massumi (Manchester, Ed.). Manchester: Manchester University Press).
- Mace, R. L., Hardie, G. J., & Place, J. P. (1996). Accessible Environments: Towards Universal Design, 44.
- Mann, S. J. (2001). Alternative Perspectives on the Student Experience : Alienation and engagement Alternative Perspectives on the Student Experience : alienation and engagement. *Studies in Higher Education*, 26(1), 7–19.
- Mayer, R. E. (1997). Multimedia learning: Are we asking the right questions? *Educational Psychologist*, 32(1), 1–19.
- Mcguire, J. M. (2013). Inclusive College Teaching : Universal Design for Instruction and Diverse Learners. *Journal of Accessibility and Design for All*, 1(1), 38–54.
- Mezirow, J. (1994). Understanding transformation theory. *Adult Education Quarterly*, 44(4).
- NCSU. (1997). The Center for Universal Design - Universal Design Principles. Retrieved from https://www.ncsu.edu/ncsu/design/cud/about_ud/udprinciplestext.htm
- Robbins, D. (1993). The practical importance of Bourdieu’s analyses of higher education. *Studies in Higher Education*, 18(2), 151–163.
- Schnotz, W., & Bannert, M. (2003). Construction and interference in learning from multiple representation. *Learning and Instruction*, 13(2), 141–156.
- Scott, S. S., McGuire, J. M., & Foley, T. E. (2003). Universal Design for Instruction: A Framework for Anticipating and Responding to Disability and Other Diverse Learning Needs in the College Classroom. *Equity & Excellence in Education*, 36(1), 40–49.
- Scott, S. S., McGuire, J. M., & Shaw, S. F. (2001). *Principles of Universal Design for Instruction*.
- Sen, A. (1999). *Commodities and capabilities*. New Delh: Oxford University Press.
- Smyth, E., McCoy, S., & Kingston, G. (2015). *Learning from the Evaluation of DEIS. Dublin: Economic and Social Research*
- TCD. (2016). Trinity Access Programmes.
- The Department of Education and Science. (2005). Equality Of Opportunity In Schools). *Education*, (May).
- Thomas, L. (2002). Student retention in higher education: the role of institutional habitus. *Journal of Education Policy*, 17(4), 423–442.
- Walker, M. (2012). Universities and a Human Development Ethics: a capabilities approach to curriculum. *European Journal of Education*, 47(3), 448–461.
- Weir, S., Mcavinue, L., Moran, E., & Flaherty, A. O. (2014). *A Report on the Evaluation of Deis At Second Level*.

8 Appendix

8.1 Universal Design

8.1.1 Equitable Use

The design is useful and marketable to people with diverse abilities.

- 1a. Provide the same means of use for all users: identical whenever possible; equivalent when not.
- 1b. Avoid segregating or stigmatizing any users.
- 1c. Provisions for privacy, security, and safety should be equally available to all users.
- 1d. Make the design appealing to all users.

8.1.2 Flexibility in Use

The design accommodates a wide range of individual preferences and abilities.

- 2a. Provide choice in methods of use.
- 2b. Accommodate right- or left-handed access and use.
- 2c. Facilitate the user's accuracy and precision.
- 2d. Provide adaptability to the user's pace.

8.1.3 Simple and Intuitive Use

Use of the design is easy to understand, regardless of the user's experience, knowledge, language skills, or current concentration level.

- 3a. Eliminate unnecessary complexity.
- 3b. Be consistent with user expectations and intuition.
- 3c. Accommodate a wide range of literacy and language skills.
- 3d. Arrange information consistent with its importance.
- 3e. Provide effective prompting and feedback during and after task completion.

8.1.4 Perceptible Information

The design communicates necessary information effectively to the user, regardless of ambient conditions or the user's sensory abilities.

- 4a. Use different modes (pictorial, verbal, tactile) for redundant presentation of essential information.

- 4b. Provide adequate contrast between essential information and its surroundings.
- 4c. Maximize "legibility" of essential information.
- 4d. Differentiate elements in ways that can be described (i.e., make it easy to give instructions or directions).
- 4e. Provide compatibility with a variety of techniques or devices used by people with sensory limitations.

8.1.5 Tolerance for Error

The design minimizes hazards and the adverse consequences of accidental or unintended actions.

- 5a. Arrange elements to minimize hazards and errors: most used elements, most accessible; hazardous elements eliminated, isolated, or shielded.
- 5b. Provide warnings of hazards and errors.
- 5c. Provide fail safe features.
- 5d. Discourage unconscious action in tasks that require vigilance.

8.1.6 Low Physical Effort

The design can be used efficiently and comfortably and with a minimum of fatigue.

- 6a. Allow user to maintain a neutral body position.
- 6b. Use reasonable operating forces.
- 6c. Minimize repetitive actions.
- 6d. Minimize sustained physical effort.

8.1.7 Size and Space for Approach and Use

Appropriate size and space is provided for approach, reach, manipulation, and use regardless of user's body size, posture, or mobility.

- 7a. Provide a clear line of sight to important elements for any seated or standing user.
- 7b. Make reach to all components comfortable for any seated or standing user.
- 7c. Accommodate variations in hand and grip size.

7d. Provide adequate space for the use of assistive devices or personal assistance

8.2 Universal Design for Instruction

8.2.1 Equitable use

Instruction is designed to be useful to and accessible by people with diverse abilities. Provide the same means of use for all students; identical whenever possible, equivalent when not.

8.2.2 Flexibility in use

Instruction is designed to accommodate a wide range of individual abilities. Provide choice in methods of use.

8.2.3 Simple and intuitive

Instruction is designed in a straightforward and predictable manner, regardless of the student's experience, knowledge, language skills, or current concentration level. Eliminate unnecessary complexity

8.2.4 Perceptible information

Instruction is designed so that necessary information is communicated effectively to the student, regardless of ambient conditions or the student's sensory abilities.

8.2.5 Tolerance for error

Instruction anticipates variation in individual student learning pace and prerequisite skills.

8.2.6 Low physical effort

Instruction is designed to minimize nonessential physical effort in order to allow maximum attention to learning. This principle does not apply when physical effort is integral to essential requirements of a course.

8.2.7 Size and space for approach and use

Instruction is designed with consideration for appropriate size and space for

approach, reach, manipulations, and use regardless of a student's body size, posture, mobility, and communication needs.

8.2.8 A community of learners

The instructional environment promotes interaction and communication among students and between students and faculty.

8.2.9 Instructional climate

Instruction is designed to be welcoming and inclusive. High expectations are espoused for all students.