

Chapter 1: Introduction

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What do students say they want from university teaching and learning?

We must always ensure that the student voice is central in the development of educational practices. The feedback above came from students linked with UCD Access & Lifelong Learning who were asked simple open questions about their experiences in an anonymous online survey. We asked only: what helped and what was difficult?

These students overwhelmingly asked for more **clarity**, more **flexibility** and more **feedback**. Universal Design offers an approach which ensures the clarity, flexibility and feedback sought by students.

What is Universal Design for Teaching & Learning?

Universal Design is a principle-based approach to designing university teaching and learning to meet the learning needs

of all students. This includes the needs articulated by the UCD students quoted here. Higher Education has become increasingly diverse, with a particularly rapid change in the last ten years. As we now strive to achieve widening participation of those students traditionally under-represented in Higher Education, and open our campuses to increasing numbers of international students, we must ensure that our teaching and learning develops in line with the student population. Universal Design (UD) offers us a framework that helps us to consider and embrace our diverse classrooms. While we may not all be experts in particular disability types, using the UD framework gives you the tools you need to take all learners in to consideration when planning and designing your curriculum.

Why this book on Universal Design?

All university staff who teach or support student learning want their teaching and

“...the best stress reliever is having a good teacher who is easily approached I think.

We really need classes on how to approach group work and presentations.

It is helpful when the lecturer makes it exceptionally clear what's wanted from an assignment, group project etc.

We need more tests which are worth less percent of the final mark.

...a few lecturers I had that put lecture slides on blackboard before lectures. I found this very helpful as I went into the lecture with the slides and it helped me to take better notes.

At the start of the year we were and are all very stressed about writing essays and not knowing what standard is expected or especially how to reference correctly which stresses me out as I fear I will lose a significant amount of marks.”

FROM STUDENTS

learning approaches to be designed to meet the learning needs of all students. The introduction to this book gives an overview of Universal Design principles together with simple things we can all do for Universal Design in our teaching. There are three main sections in the book.

1 Major Curriculum or Student Support Innovations

2 Classroom Teaching and Learning Processes and Materials

3 Assessment

If you are particularly interested in one of these aspects of teaching and learning you may wish to go straight to that section.

Traditionally those designing programmes and modules may have thought about the ‘typical student’ when completing this process. However, this approach must be abandoned when we consider the makeup of the modern Higher Education campus including: international students, students with disabilities, students from socio-economically disadvantaged backgrounds, mature students, part-time students and school leavers. While many may think that the typical student in Ireland is an 18 year

old coming to Higher Education directly from their Leaving Certificate Examinations (and thus trained to succeed in text-based education), this is increasingly not the case. We cannot make assumptions about the educational backgrounds of our students as teaching to only imagined typical students creates barriers for all students in our classrooms. Even those students who may seem to fit this profile of a “typical student” have a variety of learning preferences which are ignored when we offer only one type of educational experience.

At the core of Universal Design is a focus on variety and choice for students, a movement away from the traditional didactic, often solely text-based, classroom practices of the last century and the embracing of a more dynamic, active and evolving classroom.



Figure 1: Students relaxing in UCD's Global Lounge

Nine Principles of Universal Design for Instruction

PRINCIPLE

1

Equitable use

PRINCIPLE

2

Flexibility in use

PRINCIPLE

3

Simple & intuitive

PRINCIPLE

4

Perceptible information

PRINCIPLE

5

Tolerance for error

PRINCIPLE

6

Low physical effort

PRINCIPLE

7

Size and space for approach and use

PRINCIPLE

8

A community of learners

PRINCIPLE

9

Instructional climate

Principles of Universal Design and simple strategies for implementation in your own teaching

The nine principles of Universal Design for Instruction presented here were developed based on empirical evidence gathered by McGuire and Scott using focus groups of third level students with Learning Disabilities (LD) (McGuire & Scott, 2006). It should be noted that LD, as defined in the US where McGuire and Scott carried out their work, is not a single condition or disorder but includes a range of disabilities in the areas of reading, language and mathematics. The principles are all discussed here starting with a student quote from our feedback and also including advice on how you can implement the principles in your own teaching.

Principle 1: Equitable use

“Having the slides before class means I can focus on what is being said and not panic about what I might miss”

All students should be able to participate fully in their classes and be given the

opportunity to meet learning outcomes, preferably with the same opportunities for engagement offered to all students. Implementation of this principle includes the provision of accessible class materials.



Figure 2: Students watch a video clip for discussion in class

Application of Universal Design should mean that all students are able to access the same set of notes/materials without the need for any student to be provided with an alternate format or additional explanative materials. A simple strategy is to use a variety of learning materials e.g. slides, documents, visual material, video clips, and textbooks – using a variety of teaching materials allows as many students as possible to engage with the content based on varying learning styles and preferences. Chapter 7, **College Knowledge: Helping Mature Students Transition to College**, demonstrates this principle well as all students are provided

with the scaffolding materials needed to succeed. A contentious issue here is the provision of slides or notes to students using the online learning environment as staff are often concerned about a drop in attendance if this material is provided. However, research shows that provision of materials, even recordings, does not impact negatively on attendance (Larkin 2010).

Principle 2: Flexibility in use

“The best modules are the ones where there isn’t just essays or just exams - there’s a mix and the work is more spread out.”

This principle emphasises the need for the use of variety and flexibility in approach. Inclusive teaching obviously includes a diversity of instructional methodologies. A simple strategy for all lecturers is not to have an over-reliance on the traditional lecture model but to provide a variety of methods of instruction such as discussion, group work, interactive exercises, use of online resources and/or use of audio/visual material. Teaching approaches must take into consideration varying learning styles as reliance on any one teaching style will inevitably result in the disadvantage, or even exclusion, of some learners.

Research has shown that instruction which allows students to learn in a way that suits their individual learning style improves student performance outcomes (Higbee, Ginter, & Taylor, 1991; Lemire, 1998). Choice of assessment can form a vital part of an inclusive and flexible teaching approach. Thompson et al. (2002) note that “universally designed assessments are designed and developed from the beginning to allow participation of the widest possible range of students, and to result in valid inferences about performance for all students who participate in the assessment” (p. 6).



Figure 3: Interactive workshop

Geraldine O’Neill (2011) has completed a project on choice of assessment in UCD and as a result has developed a useful tool for ensuring that various assessment methods used are equitable: [**A Practitioner’s Guide to Choice of Assessment Methods within a Module.**](#)

Chapter 11, **Debating: How to Advance your Students' Communication Abilities**, is a great example of a creative and flexible assessment method using both debating and reflective writing as part of the process.

Principle 3: Simple and intuitive

“I have a lecturer who laid everything out clearly at the start of the semester including the reading, classes, exams and everything. Even though this was a tough module knowing this information from the beginning made it much less stressful.”

This principle outlines the need for transparency and ease of use with regard to module content and assessment. Students should be able to ascertain all necessary details regarding topics to be covered, full reading lists, and assessment methods before choosing or beginning a module. A simple strategy for all lecturers is to provide students with a clear marking rubric to ensure that they know how each of their assessments will be graded. Students should also be given detailed instructions for assessments, including, where possible, sample answers (not based on the specific

topics covered) to ensure that they know exactly what is expected of them. There should also be consistency across modules with regard to the amount and level of difficulty associated with assessments. Eliminating unnecessary complexity in the material being presented to students is also vital. Research has shown that poorly designed textbooks, for example, that do not incorporate Universal Design principles can be difficult for students to access (Jitendra, Deatline-Buchman, & Sczesniak, 2005; van Garderen, 2006.). Teaching staff should closely review the reading materials given to students in order to circumvent any potential problems students may have in accessing/ understanding the material being presented, with a consideration of the principles of Plain English. Chapter 3, **Navigating Semester One: A Roadmap for First Year Undergraduate Students**, is a great example of this principle at work as the success of The Roadmap outlined relies on its simple and intuitive design.

Principle 4: Perceptible information

“When lecturers use slides that are packed with information it is impossible to read that most of the time”

This principle further highlights the need for all material to be provided in an accessible format for all students. A simple strategy for all lecturers to improve accessibility is to use a sans-serif font such as Ariel with a minimum font size of 24 in PowerPoint. Creating alternative format materials is often a costly and problematic practice which can result in loss of equality for students and a significant investment of time during busy term time from faculty and support staff. Providing online or digital versions of texts removes a number of barriers for students including cost and often accessibility.



Figure 4: Students reading and studying together

The provision of digital material allows students to access it in a variety of ways including on-screen, using a screen reader, or in a printed format and helps to alleviate the financial burden of purchasing expensive texts. Reading lists should be reviewed regularly with a view to providing

as much of the material as possible in an accessible digital format. This may involve liaising with library staff and/or publishers. Compliance with [Web Content Accessibility Guidelines 2.0](#) and guidelines for producing accessible material should also be ensured. Institutions should also ensure accessibility is a condition of procurement at all levels. It is the responsibility of those buying/sourcing software packages or interfaces to ensure they are accessible to all users. It should not be assumed that all modern packages are accessible; for example, applications which use flash or present material in such a way that the text cannot be read by a screen reader can be highly problematic.

Principle 5: Tolerance for error

“When the feedback isn’t specific it’s hard to know what to do for the next assignment. Sometimes it’s very confusing and you don’t know how to improve for next time.”

This principle points to the problematic assumption that all higher and further education students come to a module with a certain set of ‘core skills’. Students often come to modules without some of

the experience or skills assumed by their lecturer/tutor. This can be challenging as students can feel uncomfortable asking for help or clarification. It is vital that faculty keep in mind the diverse range of students in their class groups. Students with hidden disabilities or those with varying educational backgrounds are not always easily identifiable. An important strategy is embedding core skills into all modules to ensure that all students have equal opportunity to succeed. Having a programmatic approach to the teaching and development of core skills is an effective and integrated strategy.

Chapter 10, **Facilitating Students to Showcase their Research with Pride: Embedding the Presentation of Student Research into a Part-time Business Degree**, outlines an excellent programmatic approach to skills development. It is highly beneficial if some time is spent in each module ensuring that students have the skills required to complete the module. These skills may include academic writing, oral presentations, reading techniques or research abilities. Setting aside at least one hour in each module to review these skills, as well as providing resources through the online learning environment can help to ensure that no student is left at a disadvantage.

This principle also emphasises the importance of allowing students to track their progress throughout a module. Helping students to be aware of their own development can help them to focus on areas that need improvement. Often six or more weeks of a twelve week module will have passed before a student receives any indication of how they are progressing. This leaves little time for students to reassess and rectify their work from the first half of the semester. Faculty may wish to consider providing self-assessments through the online learning environment. Short self-administered quizzes can assist students in monitoring their progress and can help students to become more self-aware in terms of their own knowledge and learning practices.

Chapter 6, **“I’m a Busy Distance Learner” – Engage Me!**, demonstrates this principle, and the online modules discussed include a number of short quizzes and tests which students can use to gauge their own progress. In some modules it may also be appropriate and possible to provide a facility for submitting plans or drafts of continuous assessments. Allowing students to submit drafts of their work helps them to understand that producing a complete piece of work is a process of drafting and re-drafting. This would, of course, require extra time of tutors/lecturers. However, the result

of this practice would be much improved student work which must ultimately be the goal of education. There is also the possibility of the lecturer coordinating peer-review of plans or drafts.

Principle 6: Low physical effort

“Lecturers rushing through slides that aren’t on Blackboard [virtual learning environment] and students panicking because they can’t write fast enough and will have no notes to reflect on.”

This principle highlights the need to remove any unnecessary physical exertion. This includes excessive amounts of writing in class. A simple and effective approach for all lecturers would be to allow any student who requires it to record lectures or seminars for study purposes. This recording, together with the class materials available online, could allow students to be more comfortable in class as it removes the stress of ‘missing’ information. Providing audio recordings/podcasts of lectures can also be extremely beneficial. Although this issue can be sensitive, with a strict policy in place, students would benefit greatly from not having to write excessive notes in class.

Policies should include conditions of use and restrictions on distribution. Faculty might also consider allowing students to complete in-class tests using a computer thus minimising the amount of time a student must spend writing/rewriting and allowing for more time processing questions and composing answers.



Figure 5: A student taking notes in a lecture

Many students with disabilities already require the support of using a computer in exams, recording lectures, and receiving notes from lecturers/tutors. By embedding these policies into each module and not restricting the use of technology these students would feel more included in the group. This would remove the perceived stigma of being different from peers or needing ‘special treatment’.

Principle 7: Size and space for approach and use

“I love the classes where we do some exercises and it isn't all just crammed in to a lecture theatre trying to listen for 50 minutes.”

This principle points to the need for faculty to think about how best to use the physical space available to them. Faculty should consider the space when planning the design and delivery of modules. A practical strategy for implementing this principle is ensuring you request and use active learning rooms which facilitate group work and enquiry/problem based learning as much as possible. The physical teaching space has a significant impact on the educational experience of all students. The integration of technology in the classroom environment, for example, can be of a significant benefit to students. However, if this technology is not used appropriately in the teaching space it can become cumbersome and distracting to students who are trying to engage with the material being presented. As noted above, teaching should be dynamic and inclusive and consideration of the physical learning space is vital in achieving this goal. Many students learn best when interacting

or discussing material and making direct contact with their lecturer/tutor. The traditional model of students sitting in rows can become quite tiresome to students who often feel disengaged in this model. Physical refurbishment or retrofitting of existing traditional spaces can be prohibitively expensive so new ways of using the traditional classrooms and lecture theatres should also be encouraged.



Figure 6: Students attending a large lecture

While the physical environment may be somewhat restrictive, some creative repurposing is vital if we are to move away from the traditional singular teaching method. This can include the flipped classroom approach, group work, think-pair-share, problem-based learning and student-led discussions.

Principle 8: A community of learners

“In my favourite classes the lecturer gets everyone involved and there is no feeling of us and them.”

This principle stresses the need for the development of a fruitful relationship among student groups and between faculty and students. It is the job of the faculty to provide opportunities for students to interact and collaborate with each other and with the teaching staff. Collaboration among students can have a positive impact both on student engagement and student retention (Elliot & Decker, 1999; Goodsell Love, 1999; Lenning & Ebbers, 1999, Tinto, 1998). Chapter 8, **Maths Sparks: Learning Maths, Teaching Maths and Widening Participation**, demonstrates this principle well as the Maths Sparks initiative works to form a community among second-level pupils, third level students and teaching staff. Peer Mentoring is a great example of how this principle can be effectively implemented. This has been highly successful in UCD and a number of other colleges. Faculty can encourage further collaboration and peer engagement by encouraging students

to form study/discussion groups for each module. Study groups could be established in class and students encouraged to meet outside of class time where possible. Group study topics/questions can be set to help structure the study time and boundaries can



Figure 7: Students studying together

be set and formalised.

Online discussion boards can be set up using the online learning environment and these can be a valuable tool for students who may not be able to attend campus outside of class hours. A closed/private Facebook group can also be set up. This can be a useful way for lecturers to communicate with students. Bringing their educational experience in to their social space encourages students to see college life as an important and interesting part of their life as a whole. However, the institution's social medial policy should be followed carefully.

Principle 9: Instructional climate

“...a lecturer sent an email to all students in our module and said if there was anything that we needed extra help with to just let him know ... made getting help for any situation that may have caused stress much easier, and much less awkward...”

This principle emphasises the need to ensure that each student has a positive educational experience. All students should be welcomed and an explicit affirmation of inclusivity should be provided at the outset of each module. A simple thing all lecturers in UCD can do is check their class list regularly to see the list of students registered for disability support. Information and instructions on how to do this can be found on the [UCD Access & Lifelong Learning Website](#). Often students with a disability, mature students, and those from socio-economically disadvantaged backgrounds have been told to lower their expectations with regard to their academic performance. A challenging and supportive learning environment can encourage all students to reach their highest potential. A statement of inclusivity should be provided in each module.

This statement should encourage tolerance of diversity in the classroom and should reassure those who would like to disclose information about their learning needs that this information will remain confidential and be treated with respect. Often disclosure can be difficult for students with ‘hidden’ disabilities so this encouragement is needed. It is the responsibility of teaching staff to communicate that all students will have ‘equal access and equal opportunity’ (Higbee, Chung, & Hsu p. 63). Pedelty (2003) emphasises the need for teaching staff to discuss this statement in their first class so that students are not left to merely read the statement on their own.



Figure 8: Students working together in class

“

This School/Department/Unit strives to be a model of inclusion. We respect and value student diversity in all of the modules we offer. We aim to provide and promote equal access and opportunity to all students regardless of disability, race, gender, sexuality or socio-economic status. Students are encouraged to approach staff to discuss their learning needs. Any information disclosed will be treated in the strictest of confidence.

”

Sample Inclusivity Statement

Chapter 4, **Assisting the Individual: Practical Interventions to Assist in Student Retention**, demonstrates this principle well as this support initiative meant students were encouraged to engage with staff individually making the experience positive and inclusive.

Overview of chapters

Previously labelled “non-traditional”, our diverse students have changed the landscape of the modern university campus both in Ireland and globally. The range of initiatives showcased in the chapters of this book demonstrates the educational innovation at work in UCD to embrace this changing landscape.

In Section 1 on **Major Curriculum or Student Support Innovations** we have four highly creative projects which have clearly improved student engagement and retention.

Chapter 2, **Integrating Learning Support for Part-time Students**, outlines a successful learner-centred approach to embedding learning support which allows for flexibility and collaboration.

Chapter 3, **Navigating Semester One: A Roadmap for First Year Undergraduate**

Students, gives a clear and easily adaptable model for scaffolding incoming undergraduate students who are just beginning to form their personal learner identity.

Chapter 4, **Assisting the Individual: Practical Interventions to Assist in Student Retention**, describes a project which has had huge success in retaining students who clearly stated that without this intervention they would likely have withdrawn from their programme.

Finally Chapter 5, **Facilitating Success for All Students on Placement**, outlines an approach which has ensured equality of access for nursing students on their clinical placements. This chapter will be of particular interest to any readers whose students engage in work-placement or internships – an increasingly common element in many programme areas.

In Section 2 on **Classroom Teaching and Learning Processes and Materials** there are three case studies which showcase a fundamentally student-centred approach to content and programme development.

Chapter 6, **“I’m a Busy Distance Learner” – Engage Me!**, provides a detailed look at what can be done with an online module when Universal Design is embedded from the

beginning of the design process but there are also a number of great ideas for those improving existing online material.

Good practice in online learning is also demonstrated in Chapter 7, **College Knowledge: Helping Mature Students Transition to College**. This case study gives an invaluable insight in to the creation of successful scaffolding materials – an approach which could so easily be adapted for other programme areas with great success.

Bringing this section to close, Chapter 8, **Maths Sparks: Learning Maths, Teaching Maths and Widening Participation**, showcases a successful and innovative outreach programme which not only improves the aspirations and maths knowledge of the second-level pupils who take part, but also fosters a community within the programme area and offers untold learning through teaching for the UCD students involved.

Section 3 of this book deals with **Assessment**. In this section we have three case studies which showcase innovative assessment practices which offer variety and creativity to students.

Chapter 9, **“It is really difficulty to read scientific papers” – Teach me how!**, demonstrates how development of a core skill, in this case reading a journal article, can be successfully linked to assessment.

Chapter 10, **Facilitating Students to Showcase their Research with Pride: Embedding the Presentation of Student Research into a Part-time Business Degree**, shows how successful a programme can be when skills development is built in at every level, with a sustained awareness of the needs of the student population, again linking these skills clearly to the assessment of the programme. This case study also demonstrates how students’ self-perception can be bolstered through assessment which creates a community between and among students and staff.

Finally, Chapter 11, **Debating: How to Advance your Students’ Communication Abilities**, focuses on transferable skills in assessment and in particular contains handouts which will be of interest to readers who are interested in using reflective writing and/or debates in their own teaching.

The last section of this book contains a list of further resources which will be of use to anyone who would like to learn more about Universal Design and how it can be applied to their own teaching and learning practices.

More case studies of Universal Design in university teaching and learning

We hope this book inspires you to revitalise your approaches to teaching and learning by adapting some of the practical ideas presented in the case studies to your own contexts. This book will have future editions so please contact the lead editor Lisa Padden (lisa.padden@ucd.ie) if you have ideas for further case studies to be included.

Conclusion

Universal Design provides a framework to ensure that all students have the opportunity to fulfil their educational potential. In the current climate of reduced resources, we know that Universal Design can save time for faculty during the semester and money for institutions as it can improve student engagement and ultimately retention. This book provides excellent examples of good practice and all authors give clear advice on how their initiatives can be implemented by others in Higher Education. It is easy to start small, perhaps with an inclusivity statement for your class or Department, and begin the work then of implementing other approaches such as those outlined in this book. There are a lot of strategies here to choose from and now is the time for action!

References

- Elliot, J.L., & Decker, E. (1999). Garnering the fundamental resources for learning communities. In J. Levine (Ed.), *Learning communities: New structures, new partnerships for learning* (pp.19-28). Columbia, SC: National Resource Center for The First-Year Experience and Students in Transition, University of South Carolina.
- Goodsell Love, A. (1999). What are learning communities? In Levine, J. (Ed.). *Learning communities: New structures, new partnerships for learning*. (pp.1-8). Columbia, SC: National Resource Center for The First-Year Experience and Students in Transition. University of South Carolina.
- Higbee, J. L., Chung, C. J., & Hsu, L. (2008). Enhancing the inclusiveness of first-year courses through Universal Instructional Design. In J. L. Higbee & E. Goff (Eds.), *Pedagogy and Student Services for Institutional Transformation: Implementing Universal Design in Higher Education* (pp. 61-77). Minneapolis: University of Minnesota, Center for Research on Developmental Education and Urban Literacy.
- Higbee, J. L., Ginter E. J., & Taylor W. D. (1991). Enhancing academic performance: Seven perceptual styles of learning. *Research and Teaching in Developmental Education*, 7(2), 5-10.
- Lemire, D. S. (1998). Three learning styles models: Research and recommendations for developmental education. *The Learning Assistance Review*, 3(2), 26-40.
- Lenning, O. T., & Ebbers, L.H. (1999). The powerful potential of learning communities: Improving education for the future. ASHE-ERIC Higher Education Report, 26 (6). Washington D.C.: The George Washington School of Education and Human Development.
- Larkin, Helen E. "But they won't come to lectures..." The impact of audio recorded lectures on student experience and attendance." *Australasian journal of educational technology* 26.2 (2010): 238-249.
- McGuire, J. M., & Scott, S.S. (2006). Universal Design for instruction: Extending the Universal Design paradigm to college instruction. *Journal of Post secondary Education and Disability*, 19(2), 124-134.
- O'Neill, Geraldine (2011) *A Practitioner's Guide to Choice of Assessment Methods within a Module*. UCD Teaching and Learning, Dublin.
<http://www.ucd.ie/t4cms/Practitioners%20Guide.pdf>
- Pedelty, M. (2003). Making a statement. In J. L. Higbee (Ed.), *Curriculum transformation and disability: Implementing Universal Design in Higher Education* (pp. 71-78). Minneapolis: University of Minnesota, General College Center for Research on Developmental Education and Urban Literacy.
- Thompson, S. J., Johnstone, C. J., & Thurlow, M. L. (2002). *Universal Design applied to large-scale assessments* (NCEO Synthesis Report 44). Minneapolis: University of Minnesota, National Center on Educational Outcomes.
- Tinto, V. (1998). Colleges as communities: Taking research on student persistence seriously. *Review of Higher Education*, 21(2), 167-177.

[**UCD Access & Lifelong Learning: Information for Staff**](#)

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