

The one-eyed king: positioning Universal Design within learning and teaching at a tertiary institution

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This paper describes the implementation of universal design (UD) principles in a tertiary setting from an educational design perspective. It discusses how those responsible for implementing this relatively new approach to learning design are building a dialogue around UD in education and willing cooperation from staff in the development of its use in course design at the institutional level. The nine principles of UD are described, together with the three principal models that apply UD to learning. An implementation plan, currently in development at a metropolitan university, maps out how the educational development team is building acceptance of UD principles across the campus in the design of all future learning materials.

Keywords: universal design, education, UDL, UDE, UDI, accessibility, learning and teaching

Introduction

In the kingdom of the blind, the one-eyed man is king. (Greek proverb quoted by Erasmus c. 1520.)

The proverb quoted above makes a cogent point about attitudes to disability. Although obviously meant to be an analogy of how privilege always depends on your point of view, reading the quote in a literal sense allows the conclusion that a disability such as partial blindness which in one context might evoke feelings of pity, compassion or even disdain, in another, where partial sight supersedes a complete lack of vision, might re-position a disability as a superior characteristic; it all comes down to the context. As with most proverbs, it is intended to provide the reader with a lesson on life; in this case providing a new perspective on how people should think about difference in either a literal or figurative sense. The idea of dealing equitably with difference is one of the primary drivers behind the application of universal design (UD) principles in educational settings.

Universal Design has been defined as “the design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design” (The Centre for Universal Design, 1997, para 2). From an equity of access to education perspective, the question we are trying to answer in positioning UD within learning and teaching at our institution is as follows: How do you most efficiently transform traditional programmes, learning materials and artefacts into formats that provide equitable access to the widest possible audience, likely consisting of learners with different needs and abilities, and whose first language or cultural background may differ markedly from the “norm”?

This paper describes the drivers for the changes to design practice that will include UD principles, the challenges facing the implementation team, the UD principles themselves, and the three major models for UD in education that were drawn from current literature and practices covering inclusive education. It then outlines the UD implementation plan and the long-term goals of the programme as a whole.

Drivers for change

Macquarie University has recently listed one of its strategic priorities as: “a commitment to inclusiveness through targeted and sustainable collaborative programmes ...” and “a commitment to the principles of sustainability” (Office of the Vice-Chancellor, 2014). A strategic step in support of the university’s aim of providing wider access to education has been to encourage the development of online units in departments across the campus, currently used in both blended delivery and distance modes. The learning challenges of individual students with equity and accessibility needs accessing these units are currently met through the Campus Wellbeing unit and the university library, however the Learning and Teaching Centre (LTC), which assists in the development and delivery of all online units at Macquarie, has determined that an institutional design approach that could work for all students would better meet the need for inclusivity and sustainability.

The LTC’s design solution is to implement the use of UD principles in its own educational development practices and to encourage the uptake of this approach by all staff involved in the production of learning

materials across the campus. The UD programme was facilitated by the employment of two designated Educational Developers for Universal Design, who are currently developing a strategic five-year plan to encourage and educate staff about the use of UD principles in learning and teaching practices. Universal Design is, by its own definition, an inclusive practice and provides a viable alternative to the current expensive and time-consuming practice of meeting the needs of individual learners on a case-by-case basis (Nganji, 2012).

Other behavioural drivers may impact the educational design process, such as the legislative environment surrounding the implementation of the design approach. Mandated change that includes penalties for non-compliance, for example, is usually seen as a strong motivation to bring about that change. While Australia has federal legislation in place to deal with issues of discrimination (Australian Government Legislation, 1992), the implementation of UD principles at the institutional level is largely still at the policy development stage. Alternative drivers for change include social justice issues that revolve around equity of access to education, and cost/benefit issues that consider the affordability of implementing change measured against the benefits that will accrue as a result of the change.

Implementation challenges

Based on anecdotal evidence to date, UD approaches are typically seen by academics at our institution as potentially onerous and time-consuming activities that will merely add to a teacher's workload and provide little obvious benefit to learners (Berquist & Sadera, 2014). Another objection frequently heard is that despite the fact that UD makes good sense from an equity standpoint; there is currently no money set aside to pay for its development. Johnson and Fox (2003) summarise challenges to the introduction of UD in tertiary settings as:

- concerns by faculty members on time limitations for introducing UD-based changes to curriculum;
- resistance at the faculty level to changes to traditional teaching delivery approaches, which may be due, in part, to a limited understanding of pedagogy as opposed to their own discipline-based knowledge;
- “limited awareness of diverse learning needs, adult learning theory and its impact on college students with and without disabilities”; and
- a lack of staff awareness of both available assistive technologies for implementing UD and the availability of training in their use (p. 16).

Consequently, a major challenge for the team is to change the context of UD implementation to one where it is re-positioned as an approach that can augment teaching practice, opening up many new possibilities for extending the learning to a broader range of students. The approach adopted by the UD programme team is to demonstrate how UD practices are largely simple and straightforward, how some UD principles may already be included in the curriculum design process, and how using this approach will not add significantly to the cost of educational development.

UD principles

So how might changing the context of implementing UD principles in an educational setting impact its uptake at the institutional level? Initially, it will involve incremental changes to an overall learning strategy that will eventually bring about inclusive, accessible practices, based on a series of sound universal design principles.

Nine principles of Universal Design

UD is an approach that, when applied to learning design, seeks to address multiple learning styles and abilities by building more flexible learning systems and artefacts that allow students some choice in how the material to be learned will be accessed. To be clear, UD used in a learning context is not about designing for learning or physical disability, but rather designing for broad access to learning materials by any learner. The first seven of the nine principles that define universal design in practice were originally derived from an enlightened view of architectural practice, that is, an attempt to provide equitable and inclusive access to landscapes, buildings, artefacts and physical tools. Seven principles of UD are listed below.

1. **Equitable use:** useful and marketable to people with diverse abilities.
2. **Flexibility in use:** accommodates a wide range of individual preferences and abilities.
3. **Simple and intuitive use:** easy to understand, regardless of the user's experience, knowledge, language skills, or current concentration level.
4. **Perceptible Information:** communicates necessary information effectively to the user, regardless of ambient conditions or the user's sensory abilities.
5. **Tolerance for Error:** minimizes hazards and the adverse consequences of accidental or unintended actions.

6. **Low Physical Effort:** can be used efficiently and comfortably and with a minimum of fatigue.
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 (The Center for Universal Design, 1997).

A further two principles from the Universal Design for Instruction (UDI) model are mentioned below.

8. **A community of learners:** the instructional environment promotes interaction and communication among students and between students and faculty.
9. **Instructional climate:** instruction is designed to be welcoming and inclusive. High expectations are espoused for all students (Scott, McGuire & Foley, 2003).

Three UD models for learning

The terms Universal Design for Learning (UDL), Universal Design in Education (UDE) and Universal Design for Instruction (UDI) all have currency in the field but may carry different meanings in different developmental contexts (McGuire, Scott & Shaw, 2006). These terms represent the three primary models used for UD approaches to learning and are discussed below.

Universal Design for Learning (UDL)

The Center for Applied Special Technology (CAST) group coined the term “Universal Design for Learning” in the early 1990s, stating that UDL leverages “the flexibility of digital technology to design learning environments that from the outset offered options for diverse learner needs” (Meyer, Rose & Gordon, 2014, p. 3). According to Meyer et al. (2014), the challenge for UDL is to account for disparate ways of knowledge representation and understanding by providing measures such as:

- multiple means of representation for learning materials;
- multiple means of action and expression, i.e. activation of knowledge; and
- multiple means of engaging with bodies of knowledge (p. 4).

Universal Design in Education (UDE)

“Universal Design in Education” is a term coined by Bowe (2000) to describe how curricula can be changed to provide wider access to learning materials, as opposed to assistive technologies that accommodate the needs of specific learners (p. 2). He points out that a UD design approach maximizes the usability of learning materials and is usually “far less expensive” than assistive approaches that are tailored to the needs of a limited number of learners (p. 2). Bowe’s assertion that UD design approaches are cheaper to implement than traditional approaches needs to be tested in some way if it is to have any true validity. This will consequently be one focus of the evaluation strategy planned for the UD implementation programme at Macquarie.

Universal Design for Instruction (UDI)

Universal Design for Instruction specifically addresses the needs of trainers and trainees by applying the principles of universal design at the instructional level (Scott, McGuire & Foley, 2003). It takes an holistic approach to programme design which promotes communities of learners and inclusive practice, as indicated by the addition of Universal Design principles 8 and 9, listed above.

There is a fair amount of overlap in the models. We believe each model has something to contribute to the current effort to promote the use of UD principles in learning approaches and the design of instructional materials. Preliminary investigations by McGuire et al. (2006) indicate that the field currently lacks a clear taxonomy of relationships where terminologies, shared principles and overlapping concerns can be laid out. With this in mind, Macquarie’s UD development group has initiated an implementation plan that will include a taxonomic view of the UD models, terms and principles that can assist the planning process.

Developing a programme for implementing Universal Design in educational practice

The development group is currently in the process of designing an implementation plan for the dissemination of universal design principles across all faculties, with the goal of ensuring that all new learning materials developed at the University use UD principles at the primary design stage over the next three years. A longer-term plan is to retrospectively ensure that all materials used for learning purposes are re-designed with UD principles by 2020.

As a first step in achieving these goals, the development group has designed a development programme with the aim of directly addressing the need to provide equitable access for students and staff on two levels.

1. In a *material* sense, to explain Universal Design principles and their use in educational settings, and to introduce staff at the University to the methods, tools, and resources based on UD principles that are able to produce learning materials and ancillary documents, providing the widest possible access to materials for all students and staff. MQAS Orange, for example, is a built-for-purpose tool based on Kerr and Baker's (2013) 'Six Practical Principles for Inclusive Curriculum'. It is designed to assist this process by providing a curriculum checklist for inclusive practice and strategies to enhance accessibility.
2. In a *conceptual* sense, to initiate a broadly-based discussion of how the use of UD principles as a design framework makes sense from a pedagogical, economic and equity point of view when teaching and support staff set about creating learning materials and curricula. In order to achieve this aim, we have initiated a series of faculty-based discussions where professional and academic staff and students have the opportunity to contribute to the discussion. Thus providing the development team with valuable feedback on the key issues involved in implementing the development programme from the end-users' point of view.

Future challenges

We see our immediate challenge as a mapping exercise where current attitudes and understandings amongst staff about Universal Design and its potential application to their teaching practice are first ascertained through a broadly-based survey. The results of this study will inform the design of a targeted education campaign for staff with the aim of explaining the principles of UD in the local institutional context, and showing how the use of UD in learning design practice will provide pedagogical, ethical and cost benefits for students and staff at this university. Our long-term aim is to see institution-wide acceptance of UD principles as the basis of learning design and, ultimately, the development of UD as a mainstream practice at our University.

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