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Simply Read: Universal Design in Learning Materials

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ABSTRACT

This paper discusses a project conducted by TAFE NSW, Western Institute to introduce the principles of Universal Design for Learning to print and web based learning materials. The concept of Universal Design developed in the field of architecture to describe environments and products designed to meet the needs of as many users as possible. Universal Design for Learning adapts this concept to teaching, learning, assessment and curriculum development, therefore improving access to learning for the wider spectrum of students. Students with different needs would be considered in educational design from the beginning and not as a retrofit. The project aimed to develop a template of design basics for print and web learning materials; demonstrate the template in a course using print and/or web learning materials; and skill a group of content developers in using Universal Design for Learning. The results to date identify several issues for consideration when implementing Universal Design for Learning including student participation in improving access, challenges for content developers and the need to address the cultural diversity of the student population.

1. INTRODUCTION

In recent years, there have been significant changes in the Vocational Education and Training sector. These have included changes to delivery modes, the introduction of National Training Packages, and the rapid growth of technology, with its many implications for educational delivery. The changes have had an impact on all teachers and learners as they accommodate new ways of interacting with each other and with learning materials.

The provision of equitable opportunities for diverse learners has been a particular concern of TAFE NSW Equity Officers – including Teacher Consultants for Disabilities, Aboriginal Coordinators and Outreach Coordinators. Maintaining equal access to learning in the face of rapid change presents new challenges. In order to meet some of these challenges, the Teacher/Consultants for Students with Disabilities at the Western Institute of TAFE NSW became interested in the concept of Universal Design for Learning.

Universal Design originally developed in the field of architecture to provide a more inclusive concept than that of accessible design. Proponents sought to encourage the building of environments that were accessible to a wide range of users, rather than retrofitting or modifying the norm as had been standard practice. Products and environments designed using the principles of Universal Design would be “usable by all people, to the greatest extent possible, without the need for adaptation or specialised design.” (Welch 1995). A group of advocates of Universal Design at North Carolina State University have produced a set of Universal Design principles (Connell *et al.* 1987). Many of these principles, developed to guide design in built environments, products and communications, can be applied to the area

of learning and curriculum development. Principles of particular relevance in the learning environment include: Equitable Use – provide the same means of use for all users, avoid segregating or stigmatising any users; Flexibility in Use – provide choice in methods of use, provide adaptability to the user’s pace; Simple and Intuitive Use- eliminate unnecessary complexity, accommodate a wide range of literacy and language skills, arrange information consistent with its importance; and Perceptible Use – communicate necessary information effectively regardless of ambient conditions or the user’s sensory abilities (Connell *et al* 1987).

The concept of Universal Design for Learning has been promoted by the CAST Organisation “as a new paradigm for teaching, learning, assessment and curriculum development”(CAST 2000). CAST suggests that Universal Design for Learning provides a means of acknowledging and responding to diversity that has economic, legal and ethical advantages. Economic advantages because it is cheaper to develop flexible learning materials than to retrofit them after publication. Legal advantages because it enables compliance with legislations related to the provision of equal access to educational opportunities. Ethical advantages because it shifts the burden of adaptation from the learner to the curriculum and overcomes the need to segregate some learners.

The concept of Universal Design for Learning appeared to have much to offer us in addressing some of the difficulties faced by students with diverse backgrounds, abilities, disabilities and cultural experiences. A project team was convened to investigate the feasibility of introducing Universal Design for Learning to the Western Institute of TAFE NSW. The broad aims of the project were to:

- Increase the use of Universal Design in print and web based learning materials
- Enable students who use assistive technology to access learning materials in a timely and appropriate manner
- Improve access by students with diverse cultural experiences by improving the design of learning materials
- Enable more students to participate equally in learning opportunities.

2. METHOD

The project team comprised 6 Teacher Consultants for Students with Disabilities, the Institute Internet Manager and the Manager of printWest, the Institute’s commercial printing facility. As customer representatives, a Faculty Director, a Head Teacher, 2 students with vision impairment who use screen readers, a student with a physical disability who uses voice recognition, 2 Aboriginal Coordinators and the Aboriginal Development Manager were also invited to participate. The membership of the team provided input from a wide range of stakeholders including students, management and learning support units. The focus of the project team was on improving student access to learning.

A submission for funding from the TAFE NSW Quality Council was successful. This funding allowed a pilot project to be undertaken. The project team undertook the task of developing guidelines for the implementation of Universal Design for Learning in the Western Institute. In order to fulfil the requirements of the Quality Project, it was decided to limit the scope of the project to a single section (Welfare) within the Community Services, Health, Tourism and Hospitality Faculty. This section was chosen because it had modules that were due for revision and had current students who were likely to benefit from the introduction of Universal Design for Learning.

Specific project aims were developed to:

- Provide a template for print and web pages using Universal Design principles.

- Demonstrate the template in a course or module using print and web based learning materials.
- Skill a group of curriculum writers and developers in the use of Universal Design by providing a training workshop.

An implementation plan was developed in collaboration with project team members. Information about the progress of the project was shared through e-mail, teleconferences, face-to-face meetings, consultations with writers and students and reflection activities. Customer and stakeholder feedback was sought throughout the course of the project. This was monitored through discussions with module writers, interviews with students regarding their experiences and needs and discussions with print-based and web-based publishing experts.

Writing workshops were presented to module writers and they were provided with clear guidelines for writing.

A questionnaire was developed to allow comparison of student responses to learning materials developed using Universal Design for Learning principles, with responses to unaltered materials. This questionnaire will be given to students who do not have any identified learning needs and have not identified as having a disability or being of Aboriginal background.

3. RESULTS

Guidelines for writing print learning materials in Universal Design (UD) were developed and provided to writers/content developers and administrative support staff with print formatting responsibility. Documentation for the Guidelines utilized Universal Design principles. Consequently, the guidelines provided both the necessary design basics as well as acting as a visual cue for writers. Writers participated in the training workshop prior to the development of UD approved modules.

The Guidelines formed the basis of the Universal Design training workshop. The workshop addressed a definition and potential benefits of Universal Design, assumptions about teaching and learning and design basics. Established best practice in print materials was discussed and the complimentary aspects with Universal Design identified.

It was critical to clarify that Universal Design in Learning (UDL) does not refer only to formatting. Universal Design requires the writer to address the learning styles and the cultural diversity of a broad spectrum of students. In practice this meant raising the awareness of writers to their own cultural bias in developing content and assessments, and assisting them to design learning materials to accommodate a range of learning styles.

The development of modules in Universal Design also challenged writers to consider the amount and type of content. It became evident that some modules were overloaded with information that was then identified as redundant. Writers were required to review learning outcomes carefully and clearly establish the information needed by the student to gain knowledge and competency in the subject. This task was supported by the current move to Training Packages and competency based assessment within the Vocational Education and Training sector.

Three print modules were developed using Universal Design principles for the funded project and a further five print modules have been UD approved post completion of the funded project. All modules were from the Personal and Community Services sector.

Three students were provided with a module in electronic format and tested the design using screen reader and voice recognition software. Results identify that students have had no

difficulty in accessing the Universal Design learning materials when using assistive technology. Specific feedback from Aboriginal Coordinators in consultation with Aboriginal students and community groups has been sought on the use of language and cultural inclusivity. Further research into establishing a Universal Design standard for the recognition of cultural experience in learning materials and teaching practises is required.

A student questionnaire was implemented to assess the response of the 'average' TAFE student to the Universal Design learning materials. Results still pending. The 'average' TAFE student is identified as those students without disabilities, who are non-Aboriginal and/or have not sought specialist assistance from the Equity unit. It is the 'average' student for whom learning materials have been previously designed. Students with additional or special needs have been considered the divergent population for whom learning materials must be adapted.

Anecdotal evidence from teachers, students and management suggests that UD approved learning materials have a visual clarity not usually experienced with extensive print text and that the intent and import of the content is more readily accessible to the reader.

The Universal Design web template has been outlined, but is yet to be trialled and introduced. The Information Systems and Technology (IST) unit of the Western Institute has formalized their commitment to ensuring that all websites and e-learning opportunities comply with Accessibility Guidelines and meet the requirements of Anti Discrimination legislation. To ensure these design guidelines are applied, the IST unit determined that students using assistive technologies test each website for accessibility prior to 'live' activation.

A further four workshops on Universal Design and Learning were conducted for teaching staff at Head Teacher and Faculty forums. The aim of these workshops was to inform teaching staff of Equity issues in learning and introduce Universal Design. Responses to concept, application challenges and ideas for implementation were recorded for further action.

All 28 workshop participants agreed the Universal Design concept was needed to appropriately support students with additional or special needs. All participants perceived an immediate benefit for the 'average' TAFE student and expressed a willingness to introduce the concept to their content developers. One participant could not identify applicability to their teaching area. All participants identified time and funding resources as a significant challenge to the introduction of Universal Design to the learning materials in their section.

Workshop participants requested further training opportunities in Aboriginal Cultural Awareness, cultural diversity and inclusiveness in assessment design, technology and its applicability to students with different needs and equity issues in general.

The findings of the project were presented to the Academic Board of the Western Institute, TAFE NSW, where Universal Design was endorsed as a whole-of-Institute approach to teaching and learning. Other recommendations included incorporation in teacher education programs and ongoing management by the Organisational Improvement unit.

Discussion

The majority of UDL activities sourced by the Project team and authors are focused on digital or e learning resources. While this project also addresses online learning activities, locating Universal Design in print materials, particularly those offered by flexible delivery and distance education, was a challenge. This drove a debate about established best practice in print design and universal design in content. Participants to the debate needed to clearly separate design and content issues. Good practice in print design was frequently complimentary to Universal Design formatting principles, though a significant difference was identified in the use of fonts.

Print designers prefer a serif font such as Times New Roman as this font allows the readers eye to flow across the page and the reader will tire less easily with extensive text. Web designers prefer sans serif fonts such as Verdana for reading on line. Web designers identify that reading on line is more tiresome to the eye and sans serif fonts provide a sharper contrast and increased white space. Obviously both approaches are valid. This project challenged accepted thinking on fonts. If a student with low vision required an electronic module copy, the print on screen needed to be a sans serif font. Consequently the question was raised if there are benefits in producing the original for print module in serif font, as this would demand further adaptation to enable student access. In addition, discussion was generated concerning whether best practice in print design considered the reader with different or special needs and, the innovations in technology that have enabled those with print illiteracy or disabilities access to the written word. Sans serif fonts were determined as the font style of choice to be used for print and web learning materials within the Institute.

A significant concern for writers was the potential for learning content to be minimized in academic rigor or 'dumbed down'. Exploring the difference between presenting learning material in a concise and objective manner versus simplifying content to the lowest common denominator was critical to the development process. As identified, writers were also challenged to reduce the mass of information presented in learning packages, which led writers to introduce other ways to create opportunities for students to explore subject material in further depth than provided. This further raised the issue of currency of readings produced for students and the maintenance of updates. CD ROMs, web links and electronic bulletin boards managed by teaching staff in collaboration with Library and Technology staff, are currently being considered.

A key benefit identified with the provision of UD approved learning materials is timely access to electronic learning materials for students using assistive technology or adapted print materials for students requiring print or formatting adjustments. UD approved modules are currently concentrated in the Personal and Community Services section and Equity staff will be monitoring the timeliness of access to learning materials for students with different needs.

A key function of Equity units, within post secondary and tertiary education institutions, is to advocate with and on behalf of students with different needs. In this project, students with disabilities advocated for and on behalf of all students using assistive technology. Students were remunerated at the same level as teaching staff in recognition of their expertise, experience and time. Student feedback regarding their participation is currently being sought.

While advocacy for student learning needs was integral to the activities of this project, it was also determined that teaching staff needed to see benefits for all students. This strategic approach allowed teaching staff to recognize that the learning needs of students with different needs were not disparate to the 'average' student and that these students are part of a continuum of learning needs and styles.

4. CONCLUSIONS

The introduction of Universal Design for learning materials at the Western Institute of TAFE NSW has effectively commenced. Over the next six months, the uptake in usage across and within faculties and teaching sections needs to be identified and supported. The initial funded project has established the potential benefits and provided templates for design. Institutional application and usage must be progressed and evaluated.

The many and diverse facets of Universal Design for Learning created some unforeseen difficulties in implementing this modest project. It was beyond the scope of the project to address all aspects of Universal Design for Learning. For this reason it was decided to set

clear objectives for the current project. It was agreed that issues that arose during the project would be noted for attention at the time of the project review. It is clear that this pilot will provide much material for further research and development.

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