AN INSTITUTION WIDE COLLABORATION TO HARNESS ICT FOR ACCESSIBLE LEARNING

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ABSTRACT

Access to higher learning is life-changing and the integration of information and communication technology should aim to afford genuinely transformative learning experiences to greater numbers of diverse students through promotion of an inclusive learning environment. Globally, between 15 - 20% of students are estimated to have a language based learning difference (International Dyslexia Association, 2016), therefore leadership that enables inclusive digital practice within higher education can have a significant impact on both the individual and the community.

Internationally, there is an ever increasing expectation that higher education institutions deliver technology enhanced learning experiences. This provides an opportunity to harness the affordances of technology to offer personalised and accessible learning. There is a global body of knowledge on the benefits of providing accessible learning environments, and frameworks for implementations within technology enhanced curriculum (Centre for Applied Science and Technology: Universal Design for Learning; The European Agency for ICT; G3ICT: The Global Initiative for ICT's; The DO-IT Centre; Web Content Accessibility Guidelines).

This paper outlines the rationale and roadmap for an initiative undertaken at RMIT Vietnam to ensure the provision of accessible education. The RMIT Access initiative aims to provide a curriculum which is by default accessible to students with a broad range of learning approaches and preferences, including learning differences and disabilities, and second language learners. The aim is to demonstrate international best practice in fostering a digitally inclusive learning environment through provision of accessible content and teaching materials.

INTRODUCTION

Globally, there is an expectation that higher education be accessible to a wider and more diverse proportion of the population. With the increasing awareness of the range of learning differences and disabilities that present in student populations, it behooves higher education leadership to enable inclusive teaching practices. Information and communication technology (ICT) is well established as a tool for creating enhanced and inclusive learning environments (Centre for Applied Science and Technology: Universal Design for Learning; The European Agency for ICT; G3ICT: The Global Initiative for ICT's; The DO-IT Centre; Web Content Accessibility

Guidelines). This paper presents the global and local contexts that have led to the introduction of an initiative at RMIT Vietnam to build a digitally inclusive learning environment. The ICT elements of this initiative are outlined as well as the enabling communications and technical support undertaken. Insights from the initial stages of the project are provided to enable to facilitate the consideration of the initiative's transferability in the Vietnamese context.

GLOBAL MOVEMENT TOWARDS ACCESSIBILITY AND INCLUSION IN EDUCATION

The number of students with disabilities attending university has increased significantly over the past 10 years (National Center for Education Statistics, U.S. Department of Education) which has resulted in a positive global shift in mindset towards the ideas of accessibility in the built environment, curriculum and assessment design as well as the understanding, development and practice of inclusive teaching. (Bruder & Mogro-Wilson, 2010)

Students with 'print disabilities' generally account for the largest percentage of students registered with most university disability services (Beacham & McIntosh, 2014). Print disability is an umbrella term referring to individuals who cannot access information in a print format because they:

- are blind or vision impaired

- have physical disabilities which limit their ability to hold or manipulate information in a printed form

- have perceptual or other disabilities which limit their ability to follow a line of print or which affect their concentration (print disability)

In practice, examples include:

- people who are blind or vision impaired

- people with severe arthritis who may have difficulty holding a book or turning pages

- people suffering from MS who may have functional eyesight but be unable to read due to severe shaking of their head or hands

- people with other types of physical disability or injuries that inhibit the easy use of reading materials such as books, magazines or newspapers

- people with a perceptual disability/learning difference, such as dyslexia. (The Australian Copyright Act 1968)

It is important to remain mindful that only a small percentage of those with any kind of disability, learning difference, medical or mental health condition actually register with the disability services that may be available. Some students fear disclosing their condition will result in discrimination, stigmatising behaviour and/or not being accepted into the university (De Cesarei 2014).

The global figure for language based learning difficulties alone is 15-20% of a class population (International Dyslexia Association, 2016). Taking this into consideration we could easily anticipate that 20-25% of our class are neurologically and physically diverse and that current approaches to accessibility may not be broad enough.

The approach of many universities and higher education institutions is to use the principles of Universal Design for Learning (originally adapted from the universal design principles employed by architects and builders to make buildings accessible for everyone). This means that it is not only the built environment that is considered but also curriculum development, assessments and professional services such as careers counselling are considered as well.

RMIT Vietnam has found itself in a similar situation to other universities and have asked the question as to how we could immediately improve the learning environment and reduce barriers for all students, and have responded by establishing the RMIT Vietnam Access initiative.

Similarly to the increase in awareness and action in inclusive learning, the expectation for Information & Communication Technology (ICT) to be an integral part of the delivery of higher education has also been growing globally. Academic teachers are now expected to provide student-centred learning experiences that are enhanced through the integration of technology (Nagy & Burch, 2009). ICT affords not only innovative ways to strengthen personalised learning experiences generally, but also provides tools that can enable the inclusive provision of learning opportunities (Beacham & McIntosh, 2014). Assistive technology can be used by students themselves to support their learning, for example screen readers, but this paper is focused on the technology employed by course designers and teachers in course delivery.

THE LOCAL CONTEXT

RMIT Global's focus on technology is enshrined its vision, "A global university of technology, design and enterprise". Coupled with this drive to be digital, is a core value of inclusion, which means that the university welcomes and is accessible to all (RMIT, 2015). This translates to goals and priorities that foreground diversity and aim to transform student learning through a digitally enhanced experience. These institutional values, while

not the initial genesis of the RMIT Access initiative, provided the needed foundations.

The Disability Resource Centre (DRC) was launched on November 4th 2013 on International Day of Persons with Disabilities by the Learning Skills Unit (LSU), Student Services at RMIT Vietnam. This was in response to an increased awareness across the university of the presence of students with physical disabilities, ongoing medical conditions, mental health conditions, and a growing concern among the Learning Skills Advisors of the need for more specialised services to support students with hidden disabilities such as Specific Learning Differences (SpLDs). In 2016, the DRC changed its name to the Equity and Disability Resource Centre to acknowledge that the EDRC works with a more diverse range of students rather than those with visible disabilities.

The concept of the EDRC is a space where students and staff can come for 1. confidential advice and information on disability, inclusion, education and current legislation 2. referral to both internal and external services that may be able to offer more specialised assessment, diagnosis and additional support 3. to meet with an EDRC Advisor, disclose a disability/condition and register for services and 4. case management and ongoing support. Over the past two and a half years, the number of students registered with the service has risen steadily each semester to our current 68. This number does not include alumni. Print disability accounts for 65% of the students currently registered with the EDRC with the largest number represented in the programs within the communication and design disciplines (Witney, 2016).

Dyslexia is not tracked in Vietnam, but if we use international estimates as a guide we learn that dyslexia impacts 10% of the population in the United Kingdom (4% severely) and rates are thought to be as high as 17% internationally. (The British Dyslexia Association, 2016). In addition, an estimate by the Fred Hollows Foundation undertaking research in partnership with RMIT Vietnam suggests over 1 in 25 people in Vietnam are visually impaired (Như Thành, 2016). Since opening the EDRC only two students presenting with an SpLD had been assessed and diagnosed within the mainstream school system and this is because they were international students. Only three students who attended international schools had been assessed and diagnosed and have knowledge of their difference. Most assessments for Vietnamese and Korean students are completed at RMIT with the psychologists and the medical doctor from SOS in Saigon and Family Medical Practice in Hanoi, although it should be noted that the past year has seen an increase in private services being offered by both national and international specialists who are able to provide SpLD assessments and language and speech assessments, so there are now more opportunities for referral.

THE RMIT VIETNAM ACCESS INITIATIVE

The rapid growth in the numbers of students supported by the EDRC has foregrounded the challenges faced by many students and spurred staff at RMIT Vietnam into action. Within the Centre of English Language, substantial research was conducted into best practice for accessible PowerPoint presentations as these are widely used as a visual aid. This development inspired the central learning & teaching division to push for the use of these accessible slides to be expected across the higher education courses. Subsequently a more ambitious project was initiated. With the aim of ensuring course delivery at RMIT Vietnam was accessible by default, the RMIT Access initiative expanded to include all digital learning materials. This project received senior leadership support, and a guiding coalition (Kotter, 1996) of supporting units across the university formed to action the plan.

The main aim of the initiative is to ensure learning materials are accessible by default by the end of 2016. The learning materials focused on in this phase are those enabled through technology as fitting with RMIT's priority of providing a digitally enhanced experience (RMIT, 2015). The ICT components of this are: accessible PowerPoint slides; Learning Management System (LMS) formatted in accessible default mode; all video and audio material to be accompanied by transcripts; and alt-text descriptions available for all visuals.

The first stage of the project implementation was communication to teaching staff focusing on why the initiative was needed. This included videos of RMIT students with learning differences taking about their learning experiences and the teaching approaches and technology that enabled them. The initiative was officially launched at an internal event with information booths introducing staff to both the assistive technologies used by students and the technologies that would enable teachers to deliver accessible learning materials. This was followed by introductory sessions for all higher education teaching staff on how they would be supported in making the necessary adjustments to the ICT elements of their courses.

The second stage of the project is focused on supporting teaching staff to achieve the initiative's goal by the end of 2016. There are a set of processes for each ICT component that endeavour to provide a systematic and less labour intensive transition to the new requirements.

ACCESSIBLE POWERPOINT

Many teachers utilize presentation slides in class as a visual aid for learning, so this can create a substantial barrier for students with a range of visual impairments. Consequently, a new, accessible PowerPoint template was designed to maintain the RMIT brand but provide

accessibility for students with a range of learning differences including dyslexia, Irlens syndrome, colour blindness and visual impairments. Following UDL principles it dictates font style, size and colour, background colours and themes and includes a border. The design complies with Web Content Accessibility Guidelines (WCAG) 2.0. RMIT staff have this template as a default on their PCs when they wish to create new presentations, however a solution needed to be devised to deal with the legacy teaching materials in use. For this purpose, reformatting tools were added to the PowerPoint menu and technical support is provided to staff to guide them through a simple conversion process.

ACCESSIBLE LEARNING MANAGEMENT SYSTEM

The online Learning Management System (LMS) is an integral part of any contemporary learning experience. In order for this vital source of course information, content and learning activities to be inclusive, formatting must allow students to adjust the interface to their personal needs. Therefore at RMIT Vietnam, all courses within the LMS must use default page formatting to avoid conflicts with assistive devices and browser extensions. When creating the learning pathway within the LMS courses, teaching staff must ensure that can be read by screen reader programs in a manner that will assist all students to benefit. Simple guides have been created for staff with common formatting requirements.

Within the LMS, videos and audio material are increasingly being used to offer students a media rich learning experience. In order for these materials to be inclusive, transcripts must accompany any video or audio material. Centralised e-learning support staff will use a software tool to generate a transcript for discipline experts to then check for accuracy before it is added to the LMS. Transcripts are important not only for learners with hearing impairments, they will also aid students studying in a second language.

In addition, within the LMS all images must be accompanied by 'alternative text' (often shortened to alt-text) to afford accessibility for students with visual impairments. Many teachers will use visual elements as part of learning materials, such as graphs, infographics and photos, and each of these need a text description. While adding alt-text is a relatively simple technical process, the teacher does need to consider very carefully the text that is to be used and the purpose of the image as it could be quite labour intensive.

Finally, to further support and enhance students learning additional ICT tools are being provided. This includes screen reading software designed for use by students with low vision (ZoomText), students who are blind (JAWS), and students with dyslexia (Read and Write Gold). Digital note pens, digital audio recorders and sound amplification sets will also be available to students in the near future as will Braille readers.

LESSONS LEARNT & NEXT STEPS

Given the global movement to inclusive learning environments, the need to support students with learning disabilities and differences is largely accepted among teaching staff. The challenge has been more in convincing staff of the need to ensure learning materials are accessible by default to achieve greater inclusiveness. That is, to cater for students that may not be aware even themselves that they have a learning difference, not just the individual cases of students who are registered with the EDRC.

In this situation, ICT not only provides the tools whereby teaching materials can be made more inclusive, it also provides the tools through which the processes of adjusting materials can be automated and supported. Without the affordances of the PowerPoint template and conversion tool, ensuring all presentations are accessible would be costly in terms of time. Dedicated and well trained functional support is also vital. To this end professional development on web accessible design has been undertaken by e-learning support staff.

In step with higher education delivery internationally, RMIT Vietnam aims to increase the digital enhancement of courses, particularly in offering courses that are blended or fully online. This will afford further spaces in which to explore the creation of inclusive learning environments through the harnessing of ICT as well as the opportunity to investigate the impact on learning in the Vietnamese context.

CONCLUSION

This paper has outlined the steps taken to date at RMIT Vietnam to ensure an inclusive and accessible learning environment for all students and the ways in which ICT has enabled this. In relation to this movement globally we are not yet leading in this space, merely meeting international standards and expectations. For our students however, these actions have the potential to provide the transformative learning experience that higher education should provide, regardless of learning disability or difference. From this solid foundation, we hope to be able to lead in further exploring and showcasing the ways in which ICT can contribute to inclusive and accessible learning.

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