Universal Design for Learning to support nursing students: Experiences in the Field

Introduction

Higher education institutions have an increasingly diverse student population and in response have developed a range of services to support students (HEFCE 2015). Therefore, there is increased pressure to embed most support within the general university provision. As a consequence, there is a resurgence of interest in the application of universal design principles in higher education to meet the needs of individual students (AHEAD 2017). As limited international literature is available about the use of Universal Design for Learning (UDL) in nurse education; this paper will explore the application of these principles to support nursing students who have additional needs, in particular, in the practice setting.

Background

Nurse education combines theoretical and clinical instruction in a recognised higher education institution (HEI). To obtain a degree, students are required to complete as much as 50% of their degree programme, within which students are both learning from, and being assessed by clinical preceptors/mentors. Supporting students on clinical placements is regarded as a crucial component of the student’s journey as it combines both learning and assessment.

The numbers of students registering with a disability in higher education in England and Ireland has increased (UCAS 2017, Ahead 2017). Anecdotal evidence from universities offering nursing degree courses in United Kingdom (UK) and Ireland would suggest that as many as 17% of nursing students (UK) and 6% in Ireland, require support for additional learning needs. In addition, students who have disclosed their disabilities are required by law to have educational and examination supports (United Nations Convention on the Rights of Persons with Disabilities (CRPD) 2006). However, many of these supports are not easily transferable to the clinical setting and many students are reluctant to disclose their disability in clinical practice due to the perception that they will be treated differently (Howlin et al. 2014, Morris and Turnbull 2007).

The equality legislation in Ireland (The Disability Act 2005) and the UK (Equality Act 2010) provides a framework through which people with many diverse needs now have an equality of opportunity in education. Under these laws, healthcare institutions and educational establishments are prohibited from discriminating against students with a disability in relation to admission and access to a course (AHEAD 2008). More recently, guidance from the professional statutory regulatory bodies in both Ireland (NMBI 2015) the UK (NMC 2010) suggest that a disability should not deter applicants from studying nursing, as they must meet the same professional and academic competencies for registration. Given that dyslexia is the most common disability disclosed by nursing students during their period of study, this paper will focus on using the learning disability ‘dyslexia’ as an example of how UDL principles can be applied.

Universal design has its origins in the built environment, whereby the need for accommodations is limited by ensuring that buildings and the infrastructure are designed to accommodate differences from the start (Clarkson et
By building in support at the planning stage, the need for additional accommodations and the costs associated with these accommodations is lessened. UD can be applied to any product or environment (Burgstahler 2015) and the Hockings (2010) report recommends that there should be a greater focus on the development of inclusive curricula, based on the principles of Universal Design.

The concept of UDL in education considers three distinct elements; multiple means of representation, action and expression, and engagement (CAST 2011). As a curriculum model, this embeds flexibility as educators move away from traditional lectures to include ‘flipped classrooms’, video, podcasts and simulations (Prober & Heath 2012) enabling learners to access materials through multiple means. In the same vein, the taught component is assessed by a variety of strategies that focus on optimising the challenge to the learner by setting clear expectations and goals, supported through the student’s development of coping skills, self-assessment and reflection. UDL also supports the incorporation of accessibility tools and assistive technologies through platforms such as ‘virtual learning environments’ and mobile device applications (Dinmore and Stokes 2014, CAST 2011). However, whilst the role of UDL in the educational setting is increasingly advocated as good practice (Jiménez et al., 2007), the role of UDL in supporting nursing students to learn in the practice setting, or the workplace is less well explored.

**Discussion**

**Supporting students who have disabilities in higher education**

In higher education, adherence to the public sector duty within the equality legislation and the language of ‘inclusion’ has influenced the development of student support through central university services. Following a detailed educational needs assessment process, students are provided with a combination of educational, technological and human support to enable them to have full access to learning and an equality of opportunity. HEI’s then formulate, a learning support plan that includes reasonable accommodations with the student and clinical partners relevant to the programme of study.

The increased diversity of the student population and the increasing constraints on funded support makes the need for higher education institutions to embed inclusive pedagogical practices within course design and delivery an imperative. The application of the concepts of UDL within all elements of an educational programme, including the practice or workplace experiences offers an exciting way of reducing the need for additional funded support and time as courses become accessible to all. However, many of the education and examination supports used, such as readers, scribes or assistive technology are not easily transferred to the context of healthcare and the potential implications to support in clinical practice is often viewed by educators and clinical mentors with trepidation or prejudice (Howlin et al., 2014, Gee 2012).

**Supporting disabled nursing students in ‘practice’ settings**

Registered nurses both in practice and in education commonly support a diverse range of students as they complete the clinical elements of their programme. When a student discloses a disability, it is unlawful for the body responsible, for example, an educational institution, to discriminate against people who have a disability (Equality Act 2010, Disability Act 2005). Whilst this is widely accepted, providing the additional support to students who have a disability in a ‘working’ environment remains difficult. Moreover, practitioners when faced with students who disclose a disability often raise concerns about a student being ‘fit and able’ to competently practice as a
registered nurse in the future (Riddell & Weedon 2009). These concerns often centre on patient safety, and the capacity of the health care system to accommodate the additional support needs of the individual as a registered nurse, when they are already struggling to meet the demands of a complex health care service. For some, while they might feel able to be supportive of a student believe that such support would not be possible as a registered nurse or more generally within the workplace (Martyn 2014).

Challenges of providing support

In supporting diverse learners the need to balance the competing demands of education to be inclusive and for clinical practice to have safe and effective practitioners is indeed challenging. It is in this clinical context that the implementation of ‘reasonable accommodations’ may be viewed as adding to the workload of practitioners who are already struggling to meet the demands of the workplace. This sense of being overwhelmed by increased workplace demands is enhanced in times of fiscal constraint, and with a culture of healthcare, characterised by a medical model, that is fast paced, harsh, and unsupportive of students. In this environment, students are simply expected to ‘hit the ground running’ (Evans 2014), and contribute effectively to care with minimal support from preceptors or educators (Gurling 2011, RCN 2012, Henderson & Eaton 2013).

The complex working environment and the feeling that supporting diverse learners is problematic may become a barrier to practitioners seeing how students with additional needs can be supported in practice. Despite this, many practitioners believe that they should be supportive of students who have disabilities and worry about litigation if they fail to apply reasonable accommodations where the absence of which can later form a claim for discrimination. In managing this dilemma, practitioners can often overcompensate by inadvertently removing or reducing certain elements of practice that would still be required to ensure the student has a full level of competence and ability. Indeed, practitioners are concerned that they may inevitably do ‘too little’, ‘too much’ or feel unable to assess a student without feeling that they may inadvertently be discriminatory (see Figure 1) and feel the need for more guidance and understanding of how to meet the ‘anticipatory duty’ requirement on HEI’s in the UK. The potential risk in over adjusting for perceived difficulties is the inadvertent change to the assessment criteria, with students demonstrating a lower level of competency while under adjusting can create unnecessary barriers to people who have disabilities. As a consequence, support within the work-based component of the nursing educational programme is poorly addressed and under-researched and considered complex and troublesome (Martyn, 2014). Reasonable accommodations are reduced to strategies that lessen difficulties; so that the student can be ‘fitted’ into the ‘normal and able’ educational and working environment using a one size fits all approach.
UDL - the question or the solution?

Universal Design for Learning (UDL) can provide a useful systematic framework and inclusive pedagogical approach through which these issues in practice are addressed. However, despite educationalists seeing its value in education, its application to the workplace, in particular, healthcare is worthy of consideration. Developing the use of UDL in work-based settings, provides opportunities for tripartite working between the student, the HEI and the practice environment (Griffiths et al 2010) that firmly places the learning needs of the student alongside that of maintaining professional standards and competency. Practitioners often voice the view that the universities accept too many students with diverse needs and that ultimately the ‘disabled’ student may be unemployable in the future, as the workplace does not have the capacity or the resources to make continued reasonable accommodations (Martyn 2014). UDL can enable practitioners to consider that the application of reasonable accommodations to practice simply reflects the multiple ways in which practice can be performed and as a consequence lessen practitioner anxiety. Furthermore, it also addresses the issue of resources by minimising the need for additional accommodations either to the workplace or to working practices.

The core concepts of UDL, encourage learning activities to be presented in multiple formats that translate information into usable knowledge; allow learners to access these materials in multiple ways with clear scaffolding between lower and higher executive functioning; and through engaging interest enable learners develop self-regulation and autonomy (CAST 2011). These same core concepts are applicable to learning in clinical practice, with each element supporting the learner as they move through their degree, becoming increasingly knowledgeable and competent in their emerging professional roles. Through the UDL framework, practitioners can be supported as the NMC (2010), and NMBI (2015) do not specify the method by which every individual must practice, rather they provide the overarching educational and professional standards to be achieved.

The concepts of UDL can offer a change of perspective from one which locates the student as a source of deficit, requiring individual ‘bolted on’ accommodations, to one which embeds flexibility in both educational and working practices. This anticipatory approach to creating a supportive educational and working culture need not be
onerous, nor compromise standards, but will enhance the environment for the benefit of all. This approach also meets the aspirations of the United Nations CRPD (2008), that help to protect and promote the rights of the disabled person in education and at work, providing legal protection from discrimination in the workplace and in the wider society.

Use of UDL principles in supporting students with dyslexia in practice

Students who have dyslexia on clinical placements are commonly challenged in key areas: reading and writing, organisation and memory. With regard to reading and writing, students are exposed to various types of handwritten notes, small print, abbreviations, and medical jargon; and are often expected to read and write complex information with a high level of speed and accuracy, and to present orally to other healthcare staff in nursing handovers and interdisciplinary meetings. The challenge to their organisation and memory is the requirement to focus on many things at the same time, prioritise and complete a number of tasks at the right time, and recall procedures, and important information relating to patient care in a turbulent, distracting and ever-changing environment. These issues can be challenging to all students, but for students who have dyslexia these challenges can be daunting as they become overwhelmed by the volume of information and the speed at which it requires processing. In such complex learning and working environments, the application of the key concepts of UDL that focus on multiple means of representation, multiple means of action and expression, and multiple means of engagement; can provide solutions not only for the student who has dyslexia but also for other students who are also encountering difficulties. Examples of how common reasonable accommodations can be considered through a UDL lens and implemented in clinical practice to support students who have dyslexia are outlined in Table 1 below.

<table>
<thead>
<tr>
<th>COMMON REASONABLE ACCOMMODATIONS</th>
<th>EXAMPLE OF UDL APPROACH FOR PRACTICE SETTINGS</th>
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<tbody>
<tr>
<td><strong>Reading and Writing</strong></td>
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<tr>
<td>25% extra time to read</td>
<td>Sufficient time built into the day including time taken with a Preceptor to allow the student to plan and undertake tasks in a timely manner without overloading with a whole day’s tasks all at one point</td>
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<td></td>
<td>Allow use of Text to Speech software* for computer / printed notes</td>
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<td></td>
<td>Use of mini iPad pre-loaded with relevant policy’s, readings and documentation (disability friendly font and size) for all students</td>
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<td></td>
<td>Provide a choice of how students access reading material (hard copy, digital)</td>
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<td>Quiet location to read and write</td>
<td>Open access to a resource room for all students</td>
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<tr>
<td>Notes in advance</td>
<td>Provide material in a handover template multimedia format in advance</td>
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<tr>
<td>Allowances for grammar and spelling errors</td>
<td>Have available medical electronic spell checkers and</td>
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<tr>
<td>COMMON REASONABLE ACCOMMODATIONS</td>
<td>EXAMPLE OF UDL APPROACH FOR PRACTICE SETTINGS</td>
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<tr>
<td>dictionaries at all nursing stations or where students document care. Ignore all minor spelling (unless they are specific biomedical or nursing terms that can be misinterpreted such as common observations and drug name)</td>
<td>Install proofreading software (Ginger/Grammarly) on all electronic devices</td>
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<tr>
<td>Electronic medical dictionary, Dragon Medical device</td>
<td>Install Dragon Medical device** on all computers</td>
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<td>Provide a list of commonly used words in advance of the placements; common prefixes and suffixes</td>
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<tr>
<td>Specialist study skills tuition</td>
<td>Access to study skills tutors through media such as Skype from placement</td>
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<td>Flexibility to schedule study skills appointments (end of the day)</td>
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<tr>
<td><strong>Memory</strong></td>
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<tr>
<td>Avoid giving long lists of tasks</td>
<td>Use checklists / flow diagram for repeated tasks</td>
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<tr>
<td>Highlight critical features of a procedure, surgery, policy</td>
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<tr>
<td>Allow recording of lectures and seminars</td>
<td>Allow use of mobile device app or Dictaphone to dictate patient notes to/or review and reference to handover meetings – e.g. audio-note</td>
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<tr>
<td>Mind map software</td>
<td>Teach in a systematic way for example, from head to toe, or from inside to outside</td>
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<tr>
<td>Step by step flow charts for procedures</td>
<td>Picture / visual flow charts</td>
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<td>Prioritisation</td>
<td>Create alerts in advance using reminders</td>
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<td>Use of notebook</td>
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<td>Provide opportunities to practice skills away from the bedside</td>
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<tr>
<td>Plan for the time to access drug cupboard etc. and become familiar with packaging, storage, etc.</td>
<td>Provide photographs of ward layout and storage facilities</td>
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<tr>
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<tr>
<td>AT - use of a Live Scribe pen***/ Dragon device reminders/timer on the phone</td>
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<tr>
<td>Use mnemonics for memorizing different procedures and skills e.g. ISBAR****</td>
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<tr>
<td>** Organisation **</td>
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<tr>
<td>Goal setting</td>
<td>Provide examples of case studies to all students to prioritise care activities</td>
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<td></td>
<td>Assist students in drawing up short and long term goals</td>
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<tr>
<td>Time management</td>
<td>Provide a clock on the wall in every room</td>
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<td></td>
<td>Use device to create vibrating alerts when activities are due</td>
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<tr>
<td></td>
<td>Avoid interruptions during task. If interruptions do occur, suggest and give time to note new information</td>
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<tr>
<td>Assessment of needs</td>
<td>Provide guidance on how assessment of learning needs for practice can be developed from the learning support plans produced for academic study</td>
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<tr>
<td></td>
<td>Provide access to policies and procedures with an audio and video</td>
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<td></td>
<td>Pre-placement pack and visit</td>
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<td></td>
<td>Provide an organisation chart of ward personnel with pictures</td>
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</table>

* Text-to-speech (TTS) software is an assistive technology tool used by people who have difficulty reading.

** Dragon Medical device is recognised speech recognition software.

*** Live Scribe pen is a ballpoint pen with an embedded computer and digital audio recorder.

****ISBAR - Identify, Situation, Background, Assessment and Recommendation - a recognised communication tool in clinical practice.

**Using technology with UDL to support students**

As Table 1 demonstrates, UDL focuses attention on simple solutions such as providing students with time to practice alternative ways of capturing information, or organising working patterns. These solutions require fewer
changes and can be supported by the traditional use of pen and paper. However, as technology advances and the use of ‘smart’ devices become ubiquitous in daily life exploiting their capacity to create a multitude of ways in which students can access information and address the barriers to learning, and effective practice working can create an inclusive learning and working environment. Healthcare systems have been slow to recognise how the increased use of personal computing through smart devices can support practice working. In the UK and Ireland this has been in part through fears of breaching patient confidentiality, potential infection control risks and high-profile ‘whistle-blowing’ cases through the unregulated use of personal devices to video poor practice (Rosenfield et al., 2011). However, increasingly as healthcare systems engage with technology, there is an emerging growth in the use of iPads to collect patient data, and development of applications such as the NICE Guidelines APP and British National Formula (BNF) application (NICE 2015). This greater engagement with technology, for the benefit of patient care creates an opportunity for assistive learning which as The Department of Health’s ‘Framework for Technology Enhanced Learning’ (DH Workforce 2011) recognises, can provide ‘unprecedented opportunities’ for innovative, integrated education, training and development. This framework recognises the opportunities for the development of ‘knowledge, skills, values and behaviours’ that available Assistive Technology (AT), such as e-learning, simulation, and smartphones represents in the practice environment.

However, as Rose et al., (2005) observes the use of technology needs to be employed not at the individual level, to correct ‘deficit’ and help overcome individual barriers to learning, but rather at the centre of curriculum design, so barriers are identified and designed out of the learning environment from the outset, giving it far greater flexibility to allow it to adapt to the individual rather than the individual adapt to it. For many students who have dyslexia, their Smartphone already has the capability of transforming their practice environments in the areas they find most difficult – reading and writing, and organisation and memory solving. Reid et al., (2013) cited that students with dyslexia were the unintentional beneficiaries from technological advancements in mobile devices even though they were not necessarily the initial market identified. Adopting a UDL framework provides the opportunity to embed this use of technology in the practice setting seamlessly for all students.

However, in the absence of a coherent UDL approach in practice that embeds and engages with technology, practitioners may be reluctant to consider the role of technology to support practice learning. To date doctors have embraced technology, which means that practice between nursing and other professions needs to match. Moreover, students who have dyslexia may experience disparity between support in the academic and practice environment. This disparity may reflect an unwillingness to incorporate technology, through misplaced fear over patient confidentiality, uncertainty in interpreting policy, or a reluctance to engage with technology. In a recent example, the benefits of using technology and the difficulties when such support is withdrawn are illustrated in a case presented in Box 1.

Box 1. A student’s first placement had been very successful after negotiating with his mentor, that he could write patient notes on his iPad simultaneously using dictation/spell-correction applications. The notes were subsequently printed out and entered into patient records. This simple solution, however, was not agreed in his next placement within the same care setting. The student received no clear explanation as to why not. As a consequence, his notes took far longer to complete, were less comprehensive, and were difficult for others to read. Whereas, his first placement focused on his abilities as a student nurse with reasonable and reasoned accommodations, his second placement expected him to perform as a ‘normal’ student without any additional support, demonstrating lack of understanding of the guidance from professional bodies and legal duties.
Implications for practice

The increasing diversity of staff within nursing is a welcome and positive development that will ultimately enrich and add to the profession as a whole (Evans 2014). Firstly, using a UDL approach provides a means by which all students feel included and will create a rich learning environment for all. It will enhance creative work practices and demand that we question what it is that we want to achieve rather than how it is achieved.

Secondly, UDL develops independent learners whereby students take responsibility for their learning, create learning strategies that work and collaborate with staff and colleagues without feeling that they are being treated differently. Having varied and flexible methods of assessment and learning helps address the needs of a wide spectrum of learners.

Finally, using a UDL approach in practice will challenge the educator to employ multiple methods of teaching; provide students with an opportunity to reflect upon their learning; embrace recognised technologies that support learning in many other environments and consider the important points for their students’ learning.

Concluding comments

In effect, in managing inclusion within practice settings, it is not enough to ignore the issues and do nothing through fear of doing it wrong, borne out of ignorance, and neither is it acceptable to remove areas of professional practice purely because an individual student has made their preceptor aware that they find a certain task more challenging to master. What is required is the honest and open conversation between a student and a preceptor through a UDL lens identifying successful strategies to empower the student to develop their practice and meet the competency standards, even if this is through a different method of practice to that used by the preceptor. This dialogue then places the focus of attention on the ‘middle ground’ avoiding the risk of under or over adjusting while maintaining and sustaining an inclusive pedagogical approach within the practice domain. The UDL framework provides an opportunity for effective collaboration to develop an inclusive practice environment and guidance to mentors who may otherwise focus only on the practicalities of completing work related activities.

UDL as an educational framework for learning embraces flexibility and allows learners to develop their learning strategies when support is responsive to their individual needs. However, in creating an inclusive educational and working culture strategies such as embedding technology need to be employed not at the individual level, to correct ‘deficit’ and help overcome individual barriers to learning, but at the centre of curriculum design. In so doing barriers are identified and designed out of the learning environment from the outset, developing the greater flexibility to allow it to adapt to the individual rather than the individual adapt to it. Adopting a UDL framework offers this change in perspective from one which locates the student as a source of deficit, requiring individual ‘bolted on’ accommodations, to one which embeds flexibility in methods and materials which are neither onerous, nor compromise standards, and creates an environment that supports learning for all.

References


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Katharine leads on inclusion and support for students who have disabilities/long-term health conditions studying on degrees leading to registration with a professional statutory regulatory bodies. This includes developing accessible learning opportunities through applying the concepts of Universal Design for Learning in a HEI setting and support for students as they undertake clinical placements. More recently this work has included the development of support for apprenticeship programs through tripartite working between the employer, the apprentice and the university. Katharine is part of a University Equality & Diversity group reporting to the Vice Chancellor and also the Learning Support Plan development group.
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Andrew has been a sign language and communication support worker for deaf children with additional needs and a support worker for adults with learning disabilities in workplace settings.

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Teaching and undertaking consultancy worldwide, Nick has received commendations from several regulatory bodies for his work in inclusive curriculum design.