Enrolled nurse transition: development of a university science preparation program for direct entry to 2nd Year.

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Abstract

Enrolled Nurses (EN) seeking to upgrade their qualification to Registered Nurse (RN) are commonly given direct entry into the second year of university pre-registration nursing degrees. This typically results in enrolment into science subjects including pathophysiology and pharmacology with the assumption that students have undertaken the requisite foundational content as part of their Vocational Education and Training (VET) diploma. However, many of these students experience an education gap after completing their program and/or work in specialist units such as mental health. This paper reports on the development of website designed by a multisite team of experts to fill this gap and so support EN transitioning to university. The website includes modules which cover the chemistry, biology and anatomy & physiology judged to be requisite knowledge for effective engagement with pathophysiology and pharmacology subjects. This site will be piloted with nursing students at the partner institutions and subsequently made publically available.

Keywords

Academic success, anatomy, chemistry, physiology, nursing, online resources, transition

Background

Science content in pre-registration nursing programs (covering chemistry, human anatomy & physiology, microbiology, pathophysiology and pharmacology) is acknowledged as underpinning clinical practice and reasoning (Massey, Chaboyer, & Anderson, 2016; Prowse & Lynne, 2000). However, engaging with science has a long history of generating anxiety amongst nursing students and a number of reasons for this have been identified (Craft, Hudson, Plenderleith, & Gordon, 2016). This report focuses on one particular group of nursing students, Enrolled Nurses (EN) seeking to upgrade their qualification to Registered Nurse (RN), for

whom there are distinct challenges that warrant targeted support with regard to learning sciences.

Without higher qualifications the career opportunities and commensurate remuneration for ENs are limited compared to those of an RN, and thus, undertaking further study through enrolment in a Bachelor of Nursing (BN) program is an attractive option (Towers, Cooke, Watson, Buys, & Wilson, 2015). Such programs are often referred to as "conversion" programs to distinguish them from standard (i.e. ATAR) entry programs. Also this is often a recommended route into higher education for students who have not undertaken previous study in English. Enrolment in a conversion program is however not without costs: anxiety over the higher academic demands of university, conflict between personal goals and family commitments, alienation from EN colleagues, short-term financial losses, and time taken up with study are common (Towers et al., 2015). The professional identity of an EN can be challenged by becoming a student and they report a sense of separateness and difference between their identity and that of other nursing students (Towers et al., 2015). These hardships are outweighed by the increasing career prospects, their rediscovered enthusiasm for the nursing profession, and the substantial personal growth that graduates report (Towers et al., 2015).

When ENs are accepted in BN programs, recognised prior learning (RPL) may enable course credit for first year science subjects (e.g. human anatomy and physiology), leading to direct enrolment in second subjects (e.g. pathophysiology and pharmacology). However, there are several issues which arise from this which can potentially put ENs at an academic disadvantage. Firstly, the science these students completed as part of their diploma is unlikely to have been taught at the same depth and detail as equivalent subjects in a degree program and this is supported by anecdotal reports from ENs entering BN programs (Towers et al., 2015). ENs are commonly mature-age students and with this may come a gap in time (sometimes substantial) since they last studied science. While time spent working as an EN may allow them to continually draw upon and reapply their science knowledge, it may be limited to discrete parts of science knowledge that are pertinent to the specialist area (e.g. mental health) in which they work. This is problematic in terms of difficulties with ongoing content assimilation that can impact upon program progression (Logan, Dunphy, McClean, & Ireland, 2013; Pitt, Powis, Levett-Jones, & Hunter, 2012; Uyehara, Magnussen, Itano, & Zhang, 2007).

At a broader program level, direct entry for ENs to second year may also mean that these students miss out on First Year Experience programs putting them at further disadvantage. Dedicated EN Preparatory programs in Australia have been few in number and most were instigated prior to the implementation of the VET diploma for EN. Evaluations of these conversion programs have shown that provision of bridging course material, student orientation and other tertiary-preparing activities are both predictive and essential for academic success, increasing engagement and overall student success (Boelen & Kenny, 2009; Laming & Kelly, 2013). The major issue with these interventions is that they are time-intensive and expensive to run and, as they are commonly held outside of teaching semesters and allocated class times, attendance can be difficult for students.

Logan and Cox, in 2014, developed and piloted a voluntary workshop and website of resources, including specific science materials for pathophysiology and pharmacology study, learning styles, studying and writing in science; for EN students with direct entry to year two (Logan & Cox, 2015). The website was available to all students throughout the session while they studied

the pathophysiology and pharmacology courses. It was structured to mirror an actual course site. This pilot project demonstrated that ongoing access gave opportunities for timely revision related to level two topics being studied with students still accessing the preparation site right up until the exam period. Out of 196 students, those who utilised the site with an interaction rate on average of 37 per student achieved a pass grade or better whereas those who failed had an interaction rate on average of 27 or less. This result is in keeping with a study of first year students by Crampton and colleagues (Crampton & Ragusa, 2015; Crampton, Ragusa, & Cavanagh, 2012). It was also apparent that those who attended the preparatory workshop utilised the website more effectively. Students noted that the opportunity at the workshop to meet other students and lecturers assisted with managing anxiety and helping them feel better prepared through the social connections that were built. Moreover, the positive impact of preparatory programs, even those primarily online, has been anecdotally reported from other Australian tertiary institutes (https://www.griffith.edu.au/student-equity-services/transition-to-university).

In this paper we report on an expansion of the aforementioned pilot program. Funded by the Office of Learning and Teaching (*Enrolled nurse transition: development of a university preparation program for direct entry to 2nd year* SD15-5077 (Seed Projects)), we have developed an online resource to best support revision of foundational science concepts. Informed by expertise from four different tertiary centres of Nursing education, this will become a resource available to all EN transitioning students which, in addition to providing flexible delivery of modules of science content (incorporating self-assessment tasks) also includes resources to assist these students with meeting the expectations of becoming a new to university student.

Aim

To provide a cross-institutional website of open resources to support and meet the needs of ENs transitioning to BN programs.

Method

The team of science educators was drawn from nursing, health and science faculties of four Australian institutions with decades of experience in nursing, allied health practice and/or teaching in undergraduate nursing programs. The team convened at two face-to-face workshops and utilised online collaborative tools and email for team communication. A consensus study was undertaken to determine core science concepts to support website revision content whilst minimising cognitive load. A website designer was engaged to ensure usability and maximise website potential for engagement with materials. The designer constructed the website using the platform Weebly with the resources provided by the team.

Results

The website has two sections: *Learn* and *Teach*.

The *Learn* section is available to students and contains:(i) resources to help with transition and expectations for university level study; (ii) a navigation tool with aligned science topics to aid revision. Resources to support transition include links to web materials such as the *FirstDegree* YouTube channel website that includes student interviews related to university life and 'Tips

and Tricks' videos. In particular, two videos were specifically recorded by Kara King from Charles Sturt University, with ENs who have or who are currently undertaking RN studies. Other links to materials that support academic integrity, writing skills, study skills and learning styles as well as time management are provided. Links to the *First in Family* website are provided as well. The navigation tool lists the key concepts associated with each topic that were determined to support study of pathophysiology and pharmacology. The list was achieved through a consensus process and acts as a self-directed checklist for each topic. There are fifteen science topics provided covering chemistry and biology basics and individual modules for each organ system. Also included are modules introducing pathophysiology and an introduction to pharmacology. Each module was prepared individually by a team member using a template designed in collaboration with the web designer. Each module was accompanied with a short (90 to 120s) video which not only introduces the topic but highlights its relevance to both future studies and clinical practice. A pre-module quiz is available for self-assessment. The module content is a mix of text, image, diagrams and author-sourced YouTube videos. A second quiz is then available for the user to evaluate their understanding

The *Teach* section of the website is for all educators who teach nursing students. It includes links to resources to help with teaching science to nursing students.

Discussion and Conclusions

Website completion is scheduled to be available in 2017. In the first instance it will be evaluated with students from the team institutions. The website has been created under a Creative Commons License and will be publically available to any students undertaking a pre-registration nursing program. The website can promote successful transition and provide a model for other student groups transitioning from VET. It is envisioned that it will also provide a component for BN students preparing for clinical placement as they will be able to use the resource to "brush up" on the basic science relevant to the workplace or even assist nurse preceptors in linking science to their practice for students.

Acknowledgements

Questions of consider

Being an online extra-curricular site, what strategies might be used to encourage student engagement?

What are the equity considerations regarding "digital natives" vs. "digital immigrants"?

What disparities in access to online resources occur when comparing between metropolitan and regional/rural students and how might they be overcome?

References

Boelen, M. G., & Kenny, A. (2009). Supporting enrolled nurse conversion - The impact of a compulsory bridging program. *Nurse Education Today, 29*, 533-537.

Enrolled nurse transition: development of a university science preparation program for direct entry to 2nd Year. Emerging Initiatives.

Craft, J. A., Hudson, P. B., Plenderleith, M. B., & Gordon, C. J. (2016). Enrolled nurses entering undergraduate studies at second year to become registered nurses – A mixed methods study on commencing perceptions of bioscience. *Collegian*. doi:http://dx.doi.org/10.1016/j.colegn.2016.05.002

Crampton, A., & Ragusa, A. T. (2015). *Exploring the role of technology in fostering sense of belonging in students studying by distance. (Final report for the Office of Learning and Teaching).* Retrieved from http://www.olt.gov.au/resource-exploring-role-technology-fostering-sense-belonging-students-studying-distance-2015

Crampton, A., Ragusa, A. T., & Cavanagh, H. (2012). Cross-discipline investigation of the relationship between academic performance and online resource access by distance education students. *Research in Learning Technology, 20*(1), 1-14.

Laming, M. M., & Kelly, M. (2013). *'Wrong way - go back': preventing educational pathways from VET into higher education from becoming dead ends.* Paper presented at the AVERTA 16th Annual Conference: VET Research at the Edge - Training for Diversity and Change, Fremantle, Western Australia, Australia. http://researchrepository.murdoch.edu.au/id/eprint/17634/

Logan, P. A., & Cox, J. L. (2015). *When level 2 is the 1st year at university: evaluation of a preparation program for direct entry of pathophysiology and pharmacology.* Paper presented at the STARS 2015, Crown Conference Centre, Melbourne, VIC 2016.

Logan, P. A., Dunphy, J. L., McClean, R., & Ireland, M. F. (2013). Six years of teaching human bioscience, pathophysiology and pharmacology: a journey of reflective practice. *International Journal of Innovation in Science and Mathematics Education, 21*(3), 82-103.

Massey, D., Chaboyer, W., & Anderson, V. (2016). What factors influence ward nurses' recognition of and response to patient deterioration? An integrative review of the literature. *Nursing Open*. doi:10.1002/nop2.53

Pitt, V., Powis, D., Levett-Jones, T., & Hunter, S. (2012). Factors influencing nursing students' academic and clinical performance and attrition: An integrative literature review. *Nurse Education Today, 32*(8), 903-913.

Prowse, M. A., & Lynne, P. A. (2000). Revealing the contribution of biosciene-based nursing knowledge to clinically effective patient care. *Clinical Effectiveness in Nursing, 4*, 67-74.

Towers, M., Cooke, M., Watson, B., Buys, N., & Wilson, K. (2015). Exploring the transition experiences of students entering into preregistration nursing degree programs with previous nursing qualifications: an integrative review. *Journal of Clinical Nursing, 24*, 1174-1188.

Uyehara, J., Magnussen, L., Itano, J., & Zhang, S. (2007). Facilitating Program and NCLEX-RN Success in a Generic BSN Program. *Nursing Forum, 42*(1), 31-38.

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