

Scaffolding key academic skills in a Bachelor of Health Science program

Ms Yvonne Parry, School of Medicine, Flinders University

Dr Louise Reynolds

Abstract

This project mapped the newly developed graduate qualities into the core topics of an undergraduate Bachelor of Health Science program. In order to depict these qualities a constructive alignment process was used to ascertain the scaffolding of skills and learning that is developed across the core topics. This was undertaken to ensure that the integrity of the learning outcomes, curriculum and assessment methods were being delivered before establishing the presence of graduate qualities. This process provided an opportunity to determine the incremental skill and knowledge development, both within the core topics, as well as between topics over the program.

Teaching in the health sciences requires the exploration of notions of culture and health provision as well as the impact of culture on interactions between health professionals. Vygotsky's Zone of Proximal Development (ZPD) provides a theoretical basis to the construction of cultural learning experiences, and the development of skills for first year students in the health science topics. This research project mapped the scaffolding of skills across the curriculum commencing in first year.

This undertaking used an action research design which utilised mixed methods and data sources such as student evaluation of teaching (SET) data, an online questionnaire, and semi structured interviews. Participants consisted of students, part time teaching staff and topic coordinators. The project was divided into a pilot phase and main phase in order to establish the construction of the constructive alignment matrix tool, as part of the main phase data collection.

The results indicated that there was some alignment of curriculum to learning outcomes and assessment within and between core topics. Namely, that to facilitate the development of the scaffolding of skills, there needed to be the development of tutor teaching packages in the first year topics. Further, it was evident that in the main, skills were incrementally developed across the core topic over the three years. Lastly, the presence of the graduate qualities was evident in the core topics.

Background on ZPD

The Zone of Proximal Development is a concept by Vygotsky of learning occurring within a scaffolding of experience in a socio-cultural context (Berk 2002; Santrock 2009). The theory of Vygotsky provides a theoretical framework for the development of experiences in first year topics (Verenikina 2004). To facilitate the learning of first year students their tutors need to provide a consistency of learning experiences within a supportive environment. This can be difficult in the health sciences given the variety

of background of tutors and their clinical focus. This curriculum review afforded the opportunity to reflect on the comments of students and tutors to establish the level of scaffolding provided within two first year topics.

The mapping of the topics allows for the explicit acknowledgment of the incremental skills developed across the curricular, against the contextual framework of constructive alignment and the theoretical background of ZPD. This new project would invite academics across the School of Medicine and the School of Nursing and Midwifery, to restructure their topics in accordance with the University directive for 4.5 unit topic, and the incorporation of the graduate qualities into all programs. This project would be both timely and advantageous for the BHS, as it would also allow for the future proofing of topics by explicitly outlining the future inclusion of aspects such as; internationalisation, indigenisation and greening of the programs to be simultaneously reviewed.

The research also enabled the casual tutors and permanent teaching staff to reflect upon the structure of the topics taught, and establishes the support that may be necessary to successfully scaffold the students experience. Further, this research project developed a series of tools that will assist in future topic revision and development. These tools provide an easy to use framework, enabling the incorporation of the graduate qualities to be evaluated against the assessment requirements, and the intended learning outcomes.

Flinders University scaffolding of experiences

Objectives

There were two key objectives for this project:

- Identify areas for change to ensure alignment of topic curriculum, learning outcomes, assessment and graduate qualities thereby explicitly linking outcomes for students
- Scaffolding the development of key graduate skills over the core topics

We used constructivist theory to provide a means for understanding the need for constructive alignment of topics with the ILO and with the graduate qualities (Medlin, Graves & McGowan 2003; Treleaven & Voola 2008). This theory also supplies a structure for the scaffolding process within a degree so that core topics in the BHS program can be designed to incrementally develop student capacity. It removes the need for one topic to furnish all the attributes or qualities of a graduate. This addresses the student comments regarding being over assessed in a topic, while providing an explicit linkage between the topics within the Bachelor of Health Sciences Program.

Methods

The research employed a mixed methods triangulation design and was divided over two phases (Jang et al. 2008). Mixed methods are helpful in the explorative and confirmative aspects of investigating topic content and teacher quality (Arnon & Reichel 2009). The first phase, a pilot study, drew on student feedback from student evaluation of teaching (SET) from two first year core topics. The two core topics

taught in first year semester one and two, were chosen as they are build upon ideas and concepts to provide a platform for future topics. Themes from the open field responses were analysed and then used to inform the development of an online questionnaire to the tutors of the two core topics. The pilot phase then informed the need for the main second phase, to accommodate the demand for topics to be constructively aligned in addition to the embedding of the graduate qualities (which will be discussed in another abstract submission).

Results

The pilot study determined the extent to which the topics HLTH1302 and HLTH1303 were internally constructively aligned, scaffolded skills between topics and explicitly provided and espoused the Flinders University graduate qualities. It was determined that the use of student feedback would provide the relevant data regarding assessments agreement with the intended learning outcomes.

The results from the pilot study of student and tutor feedback exemplify the extent to which the processes allowed for the review and revision of the current topics. It also highlighted the constructive alignment within topics, and the scaffolding between topics across the BHS. Additionally, it determined the extent to which the embedding of graduate qualities had occurred. Furthermore, this research mapped the key skills acquired across the BHS program. This information was forwarded to the topic coordinators to complete the action research cycle.

Implications

Reflecting on the research process there are a number of key points for consideration. Firstly, it is necessary to have staff buy-in to support the review process. This fact can not be understated, given the current time demands upon academic staff. Therefore, in order to assist academic staff with the review procedure, both authors facilitated the task by generating and partially completing various templates during data collection. The research recommended a number of changes to various topics to ensure that the skills provided aligned with the skill set required for second year and third year topics. The implementation of these recommendations occurred promptly having gained the support of academic staff. This made the project as time efficient as possible while assisting busy academics with what is seen a bureaucratic process.

The recommendation for the development of a tutor support package that provided the tutors with the support and skills they required to engage with 'at risk' students occurred using tutor review and input. Tutor guidelines included suggestions for; tutorial focus, topics of conversation and how to engage the class in these discussions. Also outlined is the role of the tutor in student learning, the role of the student in their learning, and that the explicit delivery of this information needed to occur in the first session to the students. The package also included a problem solving rationale and process for issues arising with students. Guidance is provided on the explicit rationale for the assessment, the marks given and its relationship to deep learning and reflective clinical practice. There does however, need to be a deeper understanding of the support required by international and indigenous students, if this part of the BHS degree is to be internationalised and indigenised.

Evaluation of changes

The changes to the topic will be assessed using the SETs and feedback from the tutors in the staff weekly meeting. This will also allow for the tutors to assess the changes over the course of the topic, rather than waiting until the SETs at the end of the topic.

Tutors will also be asked to actively assess the understanding of the students, regarding the assessment process and tasks being completed by engaging on a weekly basis with the students in these areas. This process will highlight any unfolding issues and provide a time and venue for their discussion. The students were also interviewed and asked for feedback on the assessment process, alignment and tasks. The interviews occurred after the students had completed the topics to avoid any issues of compliant responses due to power differentials between the topic coordinator and the students.

This information was collated, reviewed and analysed by the research team as part of an expanded, ongoing quality assurance and scaffolding project across the entire BHS core topic program. This ensured; the scaffolding of the topic in the BHS program, the constructive alignment of the assessment, and the need to transition topics into a 4.5 unit format were completed by the research project. The development of a mapping framework will provide the BHS topics with a yearly review process (in another presentation).

Conclusion

In conclusion, this research project and its subsequent procedures and tools, has enabled educators to reflect upon the learning process involved in scaffolding students experience. The basing of the development of skills on Vygotsky's theory has enabled staff to develop a framework of the skills that improve over time and across the BHS program. It has also allowed for reflection on the constructive alignment within their topics, and that, in and of itself has been a valuable part of this process. Further, the linking of skills between topics has also gave topic coordinators an end goal and the realisation that their topic did not need to provide all skills. The opportunity for the tutors to provide formal feedback enabled them to be included in the topic revision process across the BHS. Further, the task of formally recognising the inclusion of graduate qualities in the curricula has been promptly executed by the development of the tools and the buy-in nature of this research project. This provided practical support for the topic coordinators by: providing consistency across topics in measurement, reporting and implementing change. Also the task was overseen by the researchers and this enabled the topic coordinators the freedom to reflect upon practices while providing the necessary data to complete this task.

Outcomes of FYHE session

What this session highlights for other first year practitioners is the use of available data such as Student Evaluation Teaching responses, to formulate a set of questions for our tutors. Using mixed methods data from front line teaching staff enabled the research team to objectively analyse the topic content and map the scaffolding of incremental skills and learning over the entire program. Working closely together, the two topics which have been used as examples in this presentation highlight the necessity for programs to work collaboratively together in order to gain a sense of continuing skill development. While revisiting the idea of scaffolding, the incorporation of Vygotsky's ZPD highlights the extent to which tutors and students

were provided with an opportunity, to discuss the supports needed to inspire achievement among first year students. The following session outline is designed to provide participants with the opportunity to consider whether scaffolding as part of their curriculum design.

Session outline

Whole group discussion ice breaker (5 mins): outline of Vygotsky's theory and its role in supporting first year students. Consider the questions how will the scaffolding of skills across the program benefit your students? Does thinking about learning change the way we teach first year students?

Facilitators (5 minutes): Outline of scaffolding and the BHS topics at Flinders University.

Paired discussion (10 mins): Ask pairs of participants to consider one or more of the following topics:

1. The potential value of scaffolding as First Year Teachers within their own institutions.
2. Existing scaffolding examples for staff working with first year students operate within their home institutions.
3. How the value of scaffolding which can then be extended across various programs.

Facilitators + Whole group discussion (10 mins): Draw together ideas from floor – what has come up that has been experienced in other innovative programs while also discuss whether participants consider merits of scaffolding skills development in first year programs.

- Barriers and facilitators to scaffolding
- Experience of others in the group to using scaffolding
- Merits of scaffolding across various programs

References

- Al-Mahmood, R., & Gruba, P. (2007). Approaches to the implementation of generic graduate attributes in Australian ICT undergraduate education. *Computer Science Education*, 17(3), 171-185.
- Arnon S & Reichel N, 2009 'Closed and Open-Ended Question Tools in a Telephone Survey About "The Good Teacher". An Example of a Mixed Method Study' *Journal of Mixed Methods Research*. Vol. 3, no. 2 pp 172-196
- Bath, D., Smith, C., Stein, S., & Swann, R. (2004). Beyond mapping and embedding graduate attributes: Bringing together quality assurance and action learning to create a validated and living curriculum. *Higher Education Research and Development*, 23(3), 313-328.
- Boud, D., & Falchikov, N. (2006). Aligning assessment with long-term learning. *Assessment & Evaluation in Higher Education*, 31(4), 339-413.
- Jang, E. E., McDougall, D. E., Pollon, D., Herbert, M., & Russell, P. (2008). Integrative Mixed Methods Data Analytic Strategies in Research on School Success in Challenging Circumstances. *Journal of Mixed Methods Research*, 2(3), 221-247.
- Medlin, J., Graves, C., & McGowan, S. (2003). Using diverse professional teams and a graduate qualities framework to develop generic skills within a commerce degree. *Innovations in Education and Teaching International*, 40(1), 61-75.
- Santrock J., (2009). *Life-Span Development* 11th edition McGraw-Hill.
- Su, Y. H., & Feng, L. Y. (2008). Assessing graduate attributes for employability in the context of lifelong learning: The holistic approach. *US-China Education Review*, 5(11), 1-10.
- Treleaven, L., & Voola, R. (2008). Integrating the development of graduate attributes through constructive alignment *Journal of Marketing Education*, 30(2), 160-173.
- Verenikina, I. (2004). From Theory to Practice: What does the Metaphor of Scaffolding Mean to Educators Today? *Outlines*, 2(2), 2-15.