Title

Scaffolding the cultivation of evidence-based practice

Abstract

Universities have a responsibility to help management students to develop skills in critical thinking and to adopt evidence-based practice. Using a case-study as an exemplar, participants in this professional development workshop will create a high-level action plan to build students' evidence-based practice skills. We will explore barriers that students face in cultivating an evidence-based practice, present three scaffolds that have been successfully used to overcome these barriers and explore alternative solutions that may benefit the workshop participants' students. Reflective of the online learning environment of the case-study, the scaffolds align with Community of Inquiry's three presences – social, teaching and cognitive.

Keywords

Academic Skills, postgraduate study, management students

Introduction

Many people undertake postgraduate study to enhance their professional capabilities and improve their career prospects (Saiti et al., 2017, Donaldson and McNicholas, 2004). However, arguably universities have a broader agenda than the cultivation of vocational skills (Moscardini et al., 2020). Universities have a responsibility to develop critical thinking skills in their students and to teach them how to adopt an evidence-based practice (Gaol et al., 2018, Travis, 2017).

Our postgraduate assignments measure critical thinking and evidence-based practice skills. But before the implementation of the scaffolds introduced in this workshop, these assignments tasks revealed a gap in our students' skill sets and approach. Just days before their assignment due dates, our students would send us emails with questions such as: "I just can't find any peer-reviewed articles! Help!", and: "What is a journal article? Can't I just use the PMBoK [an industry standard manual]? That's what I use at work!". Our students are accomplished professionals who study online (so-called 'earner learners') but their success at university was at risk due to their need for academic skills development, specifically: information search, referencing, critical analysis, and the skills required to synthesise their research and develop an evidence-based practice. In the project management discipline, this evidence-based approach is desperately needed as only 23% of organisations frequently achieve project success (Young and Sexton, 2018). Furthermore, the professional project management guides that inform much of project management practice are seen as insufficient to manage the 'lived experience' of project work (Pinto and Winch, 2016, Usher and Whitty, 2017, Louw and Rwelamila, 2012).

We responded to this challenge by creating a suite of scaffolds to cultivate our students' evidence-based practice skills. The scaffolds are a 'meet-up program', visualised teaching materials, and a gamified learning module. The students who use these scaffolds

benefit from critically applying contemporary research findings to their professional practice. This professional development workshop will share how these three scaffolds, which are aligned with the three presences of the Community of Inquiry perspective, cultivate evidence-based practice skills. Broadly, we see our students as being an online community of peers who need to develop these skills to successfully complete their assignments and improve their professional practice. We create social presence in this community through the 'meet-up program', cognitive presence through the gamified learning module, and teaching presence through a suite of visual teaching materials (refer Appendix A). Empirical data collection to link the scaffolding with outcomes has not yet been undertaken. However, this workshop will include anecdotal evidence regarding the impact this Community of Inquiry has had on our students.

Workshop Learning Objectives

1. To build participants' awareness of the challenges management students (particularly postgraduate) face in terms of information search, referencing, critical analysis, and the synthesis skills (evidence-based practice skills).
2. To show participants three practical scaffolds (meet-up program, visual resources and gamified learning module) that can be used in online classrooms to build students evidence-based practice skills.
3. To prompt participants to consider other scaffolds that create a cohesive suite of resources to build evidence-based practice skills.

Engagement

This 90-minute professional development workshop will be structured as per Table 1. The workshop will include interactive brainstorming sessions and demonstration of the three scaffolds which have been used by the presenters in the case-study program. Due to

workshop time constraints, it will not be possible for participants to create a scaffold, however, participants will create their own action plans (refer Appendix B) with a list of scaffolds that cultivate students' evidence-based practice skills.

Table 1: Workshop outline

Workshop Part/ Name	**Duration**	**Link to objectives**	**Engagement mechanism**
Part 1: Welcome and theoretical background; introduction to action plan	10 mins	1, 2, 3	Participant introductions
Part 2: The challenges students face in terms of evidence-based practice	15 mins	1	Collaborative brainstorming using chat; participants complete section 1 of their action plan
Part 3: Case-study scaffolding	20 mins	2	Question and answer as the three scaffolds (meet-up program, visualised teaching materials and gamified learning module) are shared; participants start completing section 2 in their action plan
Part 4: Explore other scaffolds (per presence type) to cultivate an evidence-based practice	10 mins	3	Collaborative brainstorming using chat; participants continue completing section 2 in their action plan
Part 5: Finish action plan and seek peer feedback	15 mins	3	Break-out rooms; participants paired to finalise their action plan and seek feedback from peer
Part 6: Share action plans	10 mins	2 & 3	Some participants asked to share their action plans; focus on selecting action plans that are for cohorts that may have different needs to case-study and where alternative scaffolds are being proposed.
Part 7: Wrap-up and close	5 mins	NA	NA

Takeaway

- Examples of evidence-based practice scaffolds (and how to create them) that have been impactful in an online learning environment.
- Action plan for cultivating evidence-based practice in workshop participants own program/courses.

Professional Development Workshop Overview

The following three sections provide a summary of the concepts and data that underpin parts 1, 2, and 3 of the workshop. The remaining parts of the workshop (parts 4 to 7) build on parts 1, 2 and 3 and therefore are not described in detail below.

Welcome and theoretical background; introduction to action plan (workshop part 1)

The three scaffolds introduced in this workshop are grounded in the seminal Community of Inquiry framework. This framework has three 'presences' that are considered essential for online learning: social, teaching and cognitive (Maddrell et al., 2017, Garrison, 2016). These three presences are used to provide a cohesiveness to the scaffolds (meet-up, visualised teaching materials and gamified learning module) used in the workshop case-study. First, social presence is cultivated through open communication and building the cohesiveness of the community of learners; it relies on students being able to present their authentic selves within the online classroom (Maddrell et al., 2017). Second, teaching presence is cultivated through the educator facilitating learning sequences, encouraging interaction and providing subject-matter expertise (Kilis and Yıldırım, 2018). Third, cognitive presence occurs when students can construct meaning through reflection and discussion (Maddrell et al., 2017). The Community of Inquiry framework is targeted at online learning. As such, it was chosen as the framework for our scaffolds and is pertinent given the COVID has seen many courses transition to online delivery.

Also of relevance to the case-study scaffolds, mature-age learners focus primarily on successfully completing summative assessment (Swan et al., 2006, Gibbs and Simpson, 2005). Gibbs (2019) describes students as being "strategic" and that "in many courses it has more impact on learning than does teaching". Therefore, as educators, we strategically use assessment to motivate the development of evidence-based practice skills.

The challenges students face in terms of evidence-based practice (workshop part 2)

We will describe the demographics of the students from the case-study program to inspire the brainstorming regarding the barriers students face in developing an evidence-based practice. Thirty-seven percent of students entering our project management programs do not have an undergraduate degree and therefore may not have foundational academic skills. Where they do have an undergraduate degree (47%), this has often been completed many years previously. Also, anecdotally, some students have been awarded a higher degree, but this has been completed in a non-Western setting. For students without Western tertiary education experience, or who have had a significant time lapse since its undertaking, academic skills support is often required to enable success (Heagney and Benson, 2017, Pozdnyakova and Pozdnyakov, 2017, Willans and Seary, 2011, Stone, 2019).

Many of our students also have unique needs as they are working full-time, with 95% studying part-time, and over 75% enrolled fully online. The majority of the cohort is classified as mature-age with 78% of students over thirty years of age. Literature highlights the many demands facing mature-age students studying business (Charlton, 2016, Hill, 2017) and the need that support is embedded and contextualised to their learning (Stone, 2019). For students like this and many others facing their own unique challenges, we need to scaffold their evidence-based skills directly within course learning journeys.

Case-study scaffolding (workshop part 3)

To achieve Workshop Learning Objective 2 and to support Learning Objective 3, we will share the scaffolds we have used in the case-study program with workshop participants (refer Appendix A). As introduced above, mature-age students are motivated by assessment (Swan et al., 2006, Gibbs and Simpson, 2005). As such, assessment is the foundation for the scaffold design in the case-study program. In the program, there are two key pieces of assessment. A literature review related to a workplace problem the student has encountered. The other is a critical analysis which requires students to use the literature to evaluate and improve workplace situations. Both tasks require information literacy and higher-order thinking skills.

The social presence pillar of the framework is achieved through the use of a meet-up program. This scaffold is a peer to peer learning initiative. While traditionally meet-up programs focus on course content, in our program the peer facilitator focuses on cultivating evidence-based practice skills. Each week, the student leader facilitates a synchronous Zoom session amongst students. The session includes thirty-minutes of focused discussion on a specific evidence-based practice skill, followed by thirty-minutes of open questions and peer discussion. For those who cannot participate synchronously, the meet-up leader moderates peer-to-peer support through the online forums.

Our time-poor earner learners appreciate engaging, time-efficient learning mechanisms. As such, we bring teaching presence to students through storyboarding, scripting and animating short videos to explain key concepts related to evidence-based practice in the context of the assignments. For students who prefer static resources, courses also have visualised tips and hints guides to explain to students how to deconstruct assessment tasks. These visualised tips and hints guides are an advancement on the more traditional text-based instruction sheets that do not possess the engagement value of these visualised teaching materials.

To cultivate cognitive presence, we developed an interactive game-like experience ‘set yourself up for success’ in Articulate e-learning software to enable students to get instant feedback on their understanding of the key pillars of evidence-based practice anytime, anywhere. This innovation enables students who cannot participate in provided synchronous engagement with their peers or the teaching team to confirm that they have understood the course assignments. The gamified style of the resource encourages students to complete the activity and therefore increase their chance of demonstrating evidence-based practice through their assignments.

Reference list

CHARLTON, H. 2016. *Experiencing learning across academic-practice boundaries; An Interpretative Phenomenological Analysis of Human Resource Management practitioners engaged in part-time postgraduate study.* Northumbria University.

DONALDSON, B. & MCNICHOLAS, C. 2004. Understanding the postgraduate education market for UK-based students: a review and empirical study. *International Journal of Nonprofit and Voluntary Sector Marketing,* 9**,** 346-360.

GAOL, F. L., NAPITUPULU, T. A., SOEPARNO, H. & TRISETYARSO, A. Learning Framework in the Industrial Age 4.0 in Higher Education. 2018 Indonesian Association for Pattern Recognition International Conference (INAPR), 2018. IEEE, 227-232.

GARRISON, D. R. 2016. *E-learning in the 21st century: A community of inquiry framework for research and practice,* New York, Taylor & Francis.

GIBBS, G. 2019. How assessment frames student learning. *In:* BRYAN, C. & CLEGG, K. (eds.) *Innovative assessment in higher education: A handbook for academic practitioners.* USA: Routledge.

GIBBS, G. & SIMPSON, C. 2005. Conditions under which assessment supports students' learning. *Learning and teaching in higher education***,** 3-31.

HEAGNEY, M. & BENSON, R. 2017. How mature-age students succeed in higher education: implications for institutional support. *Journal of Higher Education Policy & Management,* 39**,** 216-234.

HILL, M. B. R. 2017. *Examining the Experiences of Stress, Support, and Coping of Full-Time Working Professionals Completing a Part-Time MBA*, University of Hartford.

KILIS, S. & YILDIRIM, Z. 2018. Investigation of community of inquiry framework in regard to self-regulation, metacognition and motivation. *Computers & Education,* 126**,** 53-64.

LOUW, T. & RWELAMILA, P. D. 2012. Project Management Training Curricula at South African Public Universities: Is the Balanced Demand of the Profession Sufficiently Accommodated? *Project Management Journal,* 43**,** 70-80.

MADDRELL, J. A., MORRISON, G. R. & WATSON, G. S. 2017. Presence and learning in a community of inquiry. *Distance Education,* 38**,** 245-258.

MOSCARDINI, A., STRACHAN, R. & VLASOVA, T. 2020. The role of universities in modern society. *Studies in Higher Education***,** 1-19.

PINTO, J. K. & WINCH, G. 2016. The unsettling of "settled science:" The past and future of the management of projects. *International Journal of Project Management,* 34**,** 237-245.

POZDNYAKOVA, O. & POZDNYAKOV, A. 2017. Adult students' problems in the distance learning. *Procedia Engineering,* 178**,** 243-248.

SAITI, A., PAPA, R. & BROWN, R. 2017. Postgraduate students' factors on program choice and expectation. *Journal of Applied Research in Higher Education,* 9**,** 407-423.

STONE, C. 2019. Online learning in Australian higher education: Opportunities, challenges and transformations. *Student Success,* 10**,** 1-11.

SWAN, K., SHEN, J. & HILTZ, S. R. 2006. Assessment and collaboration in online learning. *Journal of Asynchronous Learning Networks,* 10**,** 45-62.

TRAVIS, T. A. 2017. From the classroom to the boardroom: The impact of information literacy instruction on workplace research skills. *Education Libraries,* 34**,** 19-31.

USHER, G. & WHITTY, S. J. Embracing Paradox: utilizing design thinking in project management. Innovate, Influence and Implement-Proceedings of the Australian Institute of Project Management National Conference, 2017. 1-14.

WILLANS, J. & SEARY, K. 2011. I feel like I'm being hit from all directions: Enduring the bombardment as a mature-age learner returning to formal learning. *Australian Journal of Adult Learning,* 51**,** 119-142.

YOUNG, M. & SEXTON, P. 2018. The state of play in project management. Australia: KPMG, AIPM.

Appendix A: Framework for cultivation of academic skills

<table>
<tr><td colspan="4">Earner learners studying online with
limited evidence-based practice skills</td></tr>
<tr><td colspan="4">  </td></tr>
<tr><td rowspan="3">Community of Inquiry Framework</td><td>Social presence</td><td>Meet-Up Program</td><td>• Weekly peer-lead tutorial
• Focus on evidence-based practice skills (inc. information and digital literacies and critical thinking)</td></tr>
<tr><td>Teaching presence</td><td>Visualised Teaching Materials</td><td>• Animated videos
• Lecturer presentations
• Tips and Hints Guides</td></tr>
<tr><td>Cognitive presence</td><td>Gamified Learning Module</td><td>• ‘Tests’ students understanding of requirements
• Provides instant feedback to student</td></tr>
<tr><td colspan="4">  </td></tr>
<tr><td colspan="4">Succeeding in undertaking their
assessments for postgraduate study</td></tr>
<tr><td colspan="4">  </td></tr>
<tr><td colspan="4">Applying evidence-based practice to
Workplace situations</td></tr>
</table>

Appendix B: Action Plan for Scaffolding Evidence-Based Practice Skills

Action Plan for: **[insert course of program name]**

Section 1: Key challenges facing course/program students:

- Insert dot points of key challenges
- Insert dot points of key challenges
- Insert dot points of key challenges
- Insert dot points of key challenges

Section 2: Action plan to scaffold evidence-based practice capability:

Community of Inquiry Model	Strategies	Components to be developed/activated
Social presence	• Insert	• Insert • Insert • Insert
Teaching presence	• Insert	• Insert • Insert • Insert
Cognitive presence	• Insert	• Insert • Insert • Insert

Notes:

Insert notes as required to provide context to action