

Title: Research Skills Development: Embedding Innovation in Teaching and Learning

Track: Knowledge and Learning

Dr Svetlana Warhurst, University of Essex, United Kingdom

Dr Glen Croy, Monash University, Australia

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Abstract:

Research excellence is part of the mission statements of universities and business schools globally. Indeed, many universities identify ‘critical thinking’ as a key competency and a programme goal in graduate attributes and a ‘capacity for life-long learning’. Though, are our students research-capable and are they critical-thinkers? Ulker and Bakioglu (2019) argue that business education accreditation allows schools to reach and maintain research excellence and high-quality outcomes in education and societal impact. Continued focus on high-quality outcomes, demonstration of competencies by learners upon programme completion as well as technology competence (AACSB, 2022) are the key characteristics of the accredited schools. With assurance of learning requirements, there is an increased pressure for universities to be able to demonstrate that all graduates are achieving what might have previously been aspirational attributes. The developmental paper introduces findings from an international collaborative project on the adoption of an education innovation. The project involved the adoption of the research skill development (RSD) framework, and to champion it a UK university. The University-level project targeted ‘early adopters’ to develop academic practices for mapping research skills and autonomy levels in modules, and explicitly enhance the alignment with ‘research/critical thinking’ learning outcomes and graduate attributes. This paper discusses the challenges in making research skills explicit in modules for ‘early adopters’, and in directing and measuring students’ research skill development. It highlights challenges of innovation adoption by academics, development of communities of practice, and teaching partnerships with the library staff, academic skills advisors and module leaders. At this developmental stage, we are able to share early outcomes of the innovation adoption across the university. We propose to focus on project participants, in particular on selecting, supporting and activating educator capabilities to adopt innovation in undergraduate curriculum.

Keywords: Innovation Adoption, Research Skill Development, Undergraduate Curriculum.

Background

Developing critical thinking as learner competency has become necessary due to HE sector ongoing transformation, increasing diversity of enrolments and learner profiles (Lincoln and Kearney, 2019). The Research Skill Development (RSD) framework, developed by Willison and O’Regan (2007, 2012), is a two-dimensional conceptual model. The first dimension is the critical thinking skills students require for research, which are relevant to and underpin any curriculum and disciplinary context. Most valuable in the RSD framework is the second dimension of autonomy which makes explicit a continuum of research skill *development*, as compared to just a list of research skills. Learners’ RSD is viewed as a continuous cycle and

incremental in its nature and it is articulated through constructivist learning approach (Torres and Jansen, 2016). The framework is informed by Bloom et al. (1956) taxonomy, and the Australia and New Zealand Information Literacy Standards (2015). Torres and Jansen (2016) report a number of positive developments since the RSD framework adoption: adjustment of learning outcomes to make research skills development explicit, increase library staff engagement in curriculum review and design, improvement in assessment design and growth in the use of RSD-informed marking rubrics. Croy and Willison (2017, p. 74) found the benefits of using the RSD were “clarity in expectations and then students’ performance in relation to these expectations, time saved in explanations, marking and directed feedback, and an explicit reward for skill enhancement in future assignments”.

Pilot project

A University-level RSD pilot project to investigate developing students’ research skills was initiated in 2018-2019, followed by a period of wider university adoption. In the project, funded by the University’s Education Strategic Fund and the Dean’s Fund, we first focused on education-related innovation adoption and diffusion in universities. The project started with a series of workshops with potential adopters of the RSD innovation. After providing consent, workshop participants were invited to provide online reflections on their RSD experience and potential adoption. Guided reflection on participants’ thoughts and feelings (Gibbs, 1988, Kolb, 1984) was used, collecting responses from 14 participants (of a total of 21 attendees). The 14 participants were 9 Academic, 2 Learning and Development, and 3 Library staff. Of note, these 14 participants were those most likely to adopt the innovation (the RSD), or at least the most interested in it. Overall, the responses captured from participants were positive, although some uncertainty was revealed regarding the nature of the framework.

Overtime, the project involved the early adopters drafting and embedding RSD guided assessment rubrics. The early adopters were from the University’s Business School and the Law School with one module each at first, second and final year level within the respective undergraduate degrees. After this stage, a second reflection was requested, where five responses were received from the academics responsible for drafting these pilot rubrics, early adopters of the RSD framework (of 6 early academic drafters). These responses indicate that the RSD needs to be implemented slowly along other changes in teaching content and assessment strategies. One respondent commented that ‘it has been empowering to be able to take more control over the whole assessment and feedback process. Engaging with module leaders in the preparation of rubrics has been both a challenge and a success’. To note, the School of Health and Social Care (SHSC) was the latest department to adopt the framework in their curriculum post Covid-19 pandemic (2022-2023).

Findings and discussion

Findings from reflections indicate responses and outcomes were aligned with the Rogers (2004) innovation diffusion model. Whilst the pilot participants would more correctly be considered potential innovation adopters, rather than innovators themselves, it was found that they were motivated broadly by the aim of improving methods in teaching and learning (consistent with Hannan et al., 1999). Indeed, the strongest motivation expressed by RSD participants for adopting the RSD was a commitment to teaching and the desire to improve student learning.

One recurrent theme through the RSD reflections was a recognition of the necessity of developing research-based learning as standard (The Boyer’s Commission, 1998), and improving students’ skills, which could well be a response to ‘changes in student intake’

(Hannan et al., 1999). As one participant noted the RSD made her reflect ‘we might be expecting too much of Year 1 students’, and another stated ‘it made me realise that I do not spend as much time as I ought to be creating active learning tasks which aim to help develop a specific skill’.

Resonance was found with Findlow’s (2008) study of innovations to address policy agendas of ‘transferable skills’, ‘assessment’ and ‘widening access’ (Thompson and Purdy, 2009, p.314). Whilst not explicitly referred to by participants, these agendas are visible in responses referring to the wide diversity in student abilities and skills. One module leader stated that the ‘RSD Framework can best be applied to cohorts with very mixed abilities... students need explicit instructions... [and I think] that students, on average, would be more active during lectures and classes if they were designed at the appropriate level’. Participants welcomed a sense of how to do things differently, and that because of the RSD framework they could think about how to overhaul their teaching and assessment. For example, respondents described the benefits of learning about the range and level of skills required of students and understanding the need to aim activities at ‘what we would like an ideal student to be able to achieve rather than for average student’. In addition, the workshops were beneficial for offering the opportunity to reflect on ‘shifting away from looking at assessments purely as a way to assess skills and towards an opportunity to identify key skills that need to be developed in learners’.

No evidence was found of Thompson and Purdy’s (2009) obstacles to innovation adoption arising from conflicts between faculty interests in teaching and research, although concerns regarding time constraints did emerge. All the same, participants did not mention any barriers to successful innovation adoption which also undermine job satisfaction in higher education more generally, other than in the issue of time pressures. This is an interesting finding, as Findlow (2008) identifies a tension between innovation adopter’s aim responding to ‘genuine need’, and institutional demands for accountability, or Buss’ et al. (2017) importance of recognition. Other anticipated barriers, as highlighted in Rogers’ (2004) ‘innovation diffusion and adoption’ were uncommonly noted in the reflections. One that was noted was communication channels (Buss et al., 2017), referred to in plans of action including for a members of support staff to ‘be more proactive and make more effort to open dialogue’ and to ‘share experiences with others and come up with a collaborative way forward’. Evidently, even this ‘barrier’ was often actually presented as an opportunity to enhance the innovation adoption. Respondents appear to be intrinsically motivated to improve methods in teaching and learning, in particular a commitment to excellence in teaching and the desire to improve student learning (as per Hannan et al., 1999). Consistent with Hannan et al.’s (1999) research, RSD participants did not indicate extrinsic incentives act as motivating factors.

Challenges

In terms of adoption of the RSD, during the pilot stage of the project some members of library and learning support staff expressed mixed feelings about the project. One commented that the RSD is ‘easy to understand hard to implement’, whilst another has ‘excitement for the future, but also a sense of how far we need to travel to get there’. Hesitancy regarding the adoption of the RSD was also expressed by academic staff. For example, one stated ‘I want to check whether a different structure of classes and production of clearer learning outcomes and expectations for learners improves both learners’ engagement and their grades’. Generally, hesitant academic staff felt that they will need to see the outcome of the project to understand if it is a worthwhile investment of their time in developing and implementing the rubrics (as per Roger’s 2004 early and later adopters). For instance, one academic stated that: ‘I think I will have to actually go through the process once to see how this impacts weaker learners’.

Another participant indicates that reservations are directed towards the particulars of this specific innovation rather than towards innovation per se: 'I am willing to try anything. I am curious to see if something works and to find the winning situations when things just improve for everybody because I still feel that is possible'. This implies that staff are generally open to innovation with the reservation that their ultimate verdict on the utility of the rubrics is how effective they will be for learners and staff. Overall, however, is not clear how much resistance implied in the reflections is directed at the particulars of the change, and how much towards the idea of innovation itself (Collini, 2016).

Nonetheless, from both support staff and academics, there is no evidence of the 'deep structure conflict' that Thompson and Purdy (2009) suggest an innovation can create. A range of other challenges were identified, focusing on the detail of the implementation. First, there is a sufficiently positive attitude about the innovation and its adoption to then consider the specifics of how it will be adopted. Second, the specific challenges were also reflective of deeper consideration about the innovation and how it fits (or not) within the participants' usual practice.

The longer-term progress of adoption of the framework by the departments has been partly impacted by Covid-19 pandemic. Changes in staff deployed impacted how the curriculum is structured, in particular in the School of Health and Social Care. However, there are several observable indirect improvements introduced to 2022/23 and 2023/24 curriculum: The Law School lead by the Director of Education have revised the departmental undergraduate marking criteria to ensure explicit grade indicators showing progression in skill development and learner autonomy at each stage of degree level, aligned with the RSD framework. Addressing 'Evaluation and Reflection' dimension (see attached, RSD Pentagon), the Business School had revised and incorporated research evidence evaluation learner reflections in the second- and third-year modules assessments in International Business and Strategy curriculum; this is supported and consistent with research by Bearman and Ajjawi (2021), inviting learner reflection and rubric development.

The School of Health and Social Care has embedded RSD into the Year 1, 2 and 3 of the undergraduate curriculum, incorporating a strategic and iterative sequence of academic skills sessions directly into a range of modules, supported by team teaching with subject lecturers. In alignment with accrediting body requirements, a number of departmental faculty meetings took place seeking approval to embed RSD into the curriculum. The School mapped of the six RSD facets to modules and sessions, initially threading them through the Year 1 modules. Year 1 modules such as Person-Centred Care 1, Welfare, Wellbeing and Health had critical writing skills content embedded through collective efforts of the module leaders, subject lecturers, a learning development lead, and the library staff. In addition, extra-curricular activities were appreciated by learners who commented that such sessions should be made available as in-curricular compulsory for all learners to access. To overcome the challenges of the Covid-19 pandemic, senior academic staff developed critical writing skills workbooks which students relied on significantly in weeks 51 and week 52 to aid learners' transition from Year 2 and Year 3. The implementation of the RSD has been shown to be effective in developing a comprehensive and accessible research trajectory across a wide range of degree programmes and levels, and in developing a critical and analytical mindset. This empowered learners in understanding and applying framework in both academic and professional practices, conventions and values in their work.

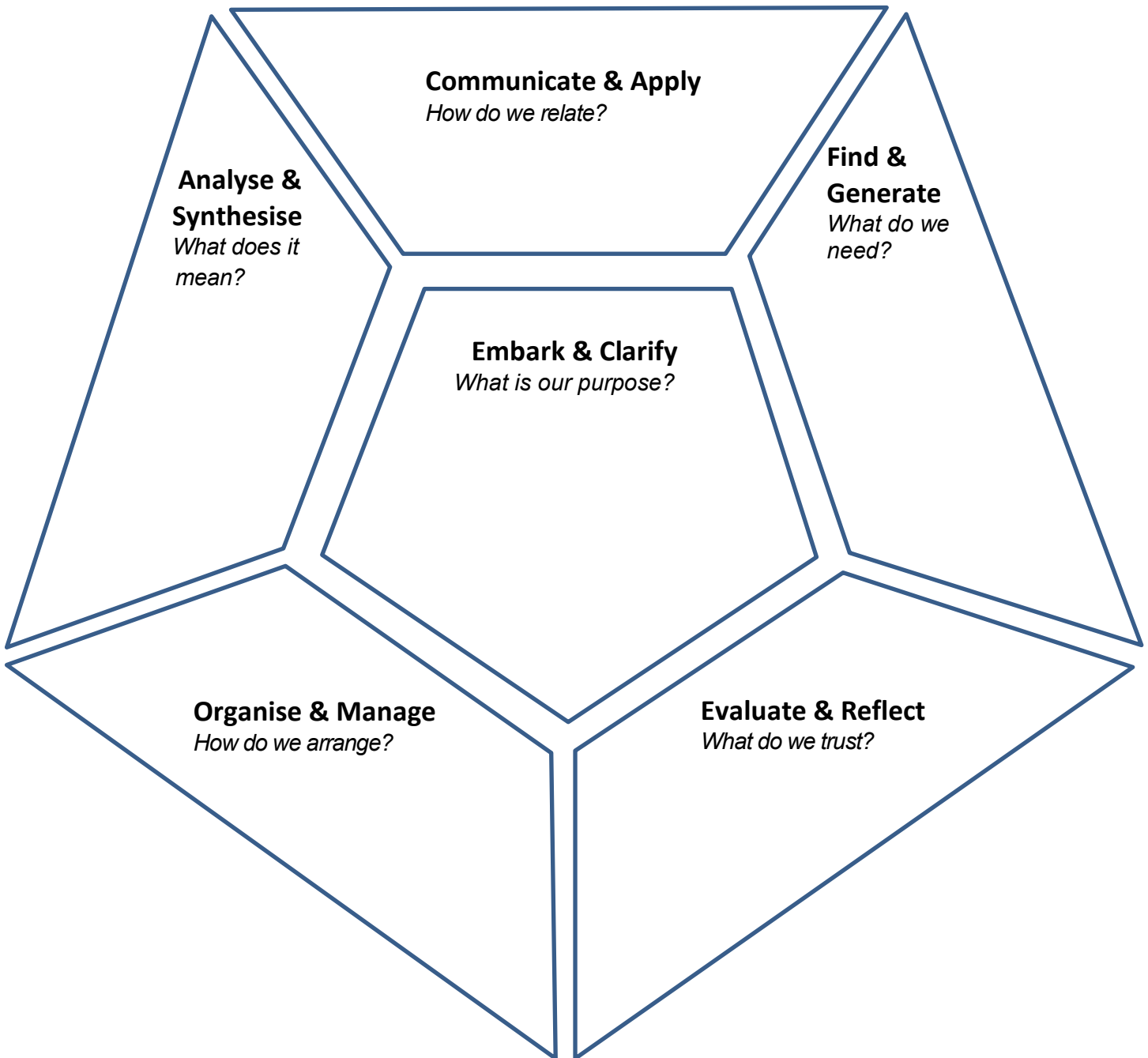
Conclusions and future directions

Broadly, project participants were welcoming of innovation, but reserved judgement on investing time until there is evidence of increased learner engagement and skills development. For the adopting group of participants, there are much more positive themes emerging, which, once the specific challenges are overcome. Collectively, participants recognised that there is a strong need to develop undergraduate learners' research skills, and this innovation is a means to address this need.

For the discussion, we propose to focus on project participants, in particular on selecting, supporting and activating educator capabilities to adopt innovation. From our experience, we feel there are lessons that would enhance future education innovation adoption practices. We are also looking to draw on others' experiences in the adoption or the promotion of education innovations to identify points of comparison to our experience. Following Jääskelä et al. (2018), we will outline our proposed initial diffusion attempts through a model of networked culture in staff-library communities of practice collaborations to further embed research skills development in the curriculum. To guide the diffusion, we will seek learner and module leader feedback through a series of focus groups. We shall seek to gather further participant feedback and evidence outcomes and impact on the quality of learning outcomes for the later RSD adopters across the university.

RSD pentagon

'When in doubt, return to the centre'



The Research Skill Development (RSD) pentagon is based on the six facets of the RSD as modified for Optimising Problem Solving (OPS) pentagon designed by Mechanical Engineering Communications Tutors, University of Adelaide, 2014. See www.rsd.edu.au for full version of RSD and <http://www.adelaide.edu.au/rsd/framework/frameworks/> for OPS. john.willison@adelaide.edu.au
The RSD Pentagon may be used as a Thinking Routine (R. Ritchhart & D. Perkins, 2008).

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