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Embedding Innovation in Teaching and Learning: A Pilot Study of the Research Skill Development (RSD) Framework Adoption

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Abstract:

Research is a necessary and inherent feature of universities, and a skill also attributed to their graduates. Indeed, universities specify research-capable graduates as an outcome of their courses in graduate attributes, such as 'capacity for lifelong learning'. Though, are our students research-capable? With assurance of learning and accreditation requirements there is an increased pressure for business schools to be able to demonstrate that all graduates are achieving what might have previously been aspirational attributes. The developmental paper introduces findings from an ongoing 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. Our University-level pilot targeted 'early adopters' to develop academic practices for mapping research skills and autonomy levels in modules, and explicitly enhance the alignment with 'research' course outcomes and graduate attributes. In this paper we discuss challenges in making research skills explicit in modules for 'early adopters', and in directing and measuring students' research skill development. We especially highlight challenges of on-line marking rubric development and adoption by academics, development of communities of practice, and teaching partnerships with the library staff, academic skills advisors and module leaders.

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

Background
The Research Skill Development (RSD) framework, developed by Willison and O'Regan (2007), is a two dimensional conceptual model. The first dimension is the critical 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. The autonomy dimension makes explicit a continuum of research skill *development*, as compared to just a list of research skills. In the framework, students' research skill development 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 started in 2018. 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. Stage one of the project was a series of workshops with potential adopters of the RSD innovation (February, 2018). After providing consent, workshop participants were invited to provide online reflections on their RSD experience and potential adoption. We used a guided reflection on participants' thoughts and feelings (Gibbs, 1988, Kolb, 1984), collecting responses from 14 participants (of a total of 21 workshop 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.

Stage two of the project involved the early adopters drafting 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 in July 2018. 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 rubric 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'. It was noted that coursework assignments should be written with the rubric in mind. Drafting and agreeing the rubrics was difficult at first, but with discussion early adopters were able to overcome this challenge. 'Engaging with module leaders in the preparation of rubrics has been both a challenge and a success'.

Preliminary findings and discussion
Preliminary findings from reflections indicate responses 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'.

Relatedly, resonance is found with Findlow's (2008) study of innovations to address government defined 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. As one participant states 'we as academics make certain assumptions about skills that students have already developed prior to coming to university, but that these may not always be correct, especially not for an entire cohort of students'. Another 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'.

Further 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 students'.

One respondent felt that the rubric will be beneficial to both students and markers. Focusing more on students, participants believe that the RSD will resonate with students in 'putting in perspective and words what is often vaguely explained'. Another participant felt that the project would make 'a large positive impact on the assessment and feedback elements that students receive'. For staff, it was generally felt that rubrics are a positive innovation, bringing 'an awareness of the limitations of our current practice' (mostly marking guides), and it being 'important to take up this opportunity/challenge'. Another saw the rubric as 'an excellent way to understand student learning and progress' with great potential.

Nevertheless, some respondents decided to reserve judgement and will let the RSD adoption play out and participate where they can.

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.

Motivations for participants to engage in the pilot project and development of the rubrics centred on the benefits to students, particularly in respect to feedback and research skill development. 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, 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'. Another member of support staff feels 'frustrated… On the one hand I know lecturers know students in general more than me but on the other hand, I know more about their literature search skills'. This suggests a greater need for different stakeholders to work more closely on implementation.

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 students improves both students' 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 students'. 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. That improvement in one area does not take away from something else. But it is only done by trial and error really as far as I can tell'. 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 students 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. These imply two things. 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 its fits (or not) within the participants' usual practice. These specific challenges included online marking using Moodle, the challenge of rubric crafting and especially criterion weightings, and securing buy-in from staff. Some found drafting and calibrating the rubrics difficult at first, although this was overcome through discussion within the adoption community and other support staff. Again, these challenges ultimately led to a positive outcome in that 'it was good to agree and there was a sense of achievement'.
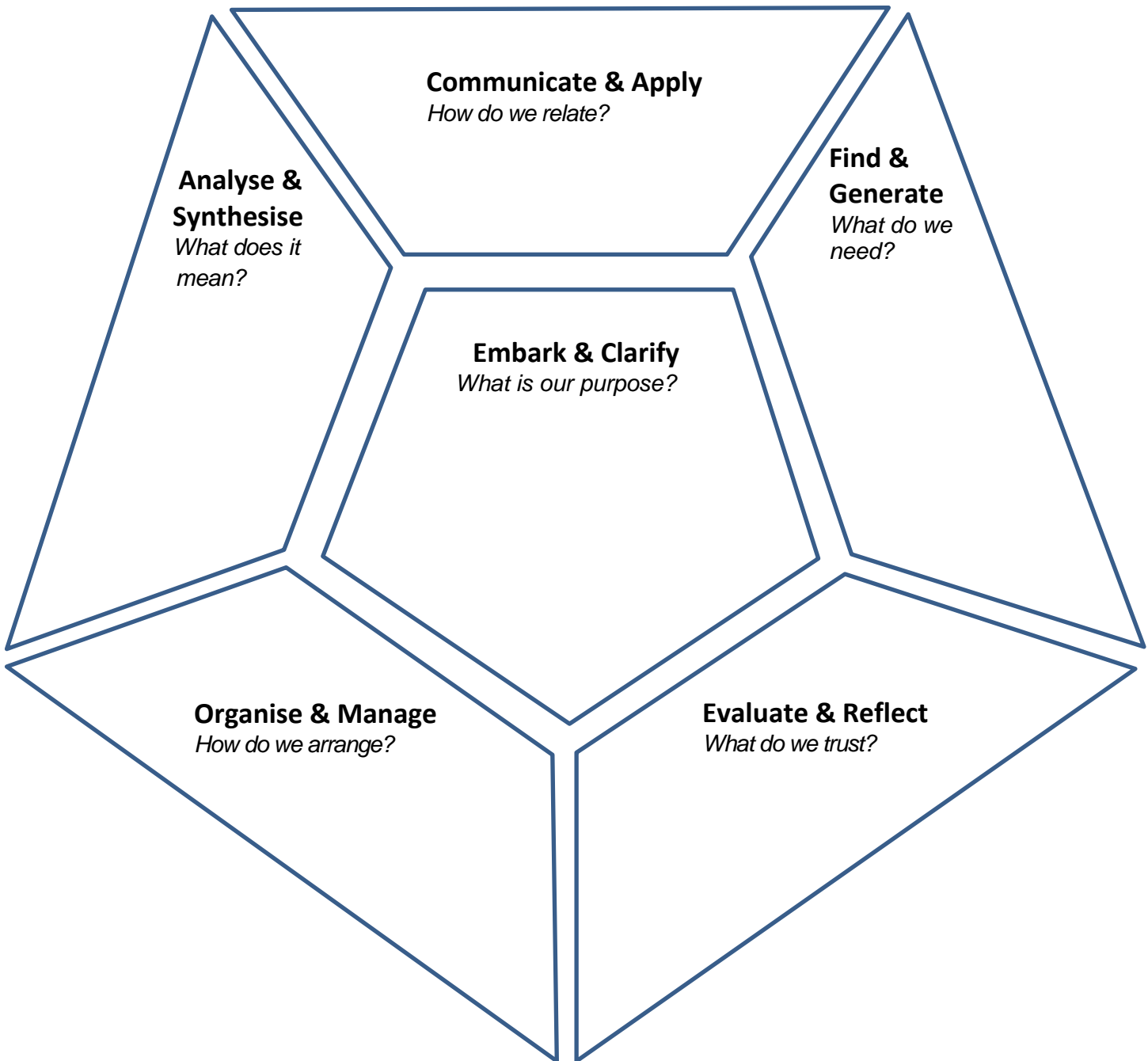
Conclusions/future directions

Broadly, participants in the Stage one project are welcoming of innovation, but are reserving judgement on investing time until there is evidence of increased student engagement and skills development, together with saving in staff time spent marking. Though, for the adopting group of participants (Stage two), there are much more positive themes emerging, which, once the specific challenges are overcome, will be able to demonstrate the needed evidence for the later adopters. Collectively, participants recognise that there is a strong need to develop undergraduate students' research skills, and this innovation is a means to address this need.

For the discussion, we propose to focus on the movement from the Stage one to the Stage two groups of participants (selecting, supporting and activating the early adopters). 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. Finally, following Jääskelä et al. (2018), we will outline our proposed Stage three initial diffusion attempts through a model of networked culture in staff-library communities of practice collaborations to embed research skills development in the curriculum. To guide the diffusion, we will seek student and module leader feedback on the use of the assessment rubrics through a series of focus groups.

RSD pentagon

'When in doubt, return to the centre'

Communicate & Apply
How do we relate?

Analyse & Synthesise
What does it mean?

Find & Generate
What do we need?

Embark & Clarify
What is our purpose?

Organise & Manage
How do we arrange?

Evaluate & Reflect
What do we trust?

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