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The Adaptive Subject Pedagogy Model: Understanding Pre-Service Teachers' Pedagogical Reasoning in Design & Technology

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Introduction & background

- The importance of theory- and research-informed teaching is well understood in the literature (Miles et al., 2016; Evans et al., 2017; Flores, 2018) but remains challenging for students and teachers (Flessner, 2012; McGarr et al., 2017).
- Two-fold challenge for Design & Technology ITE students: need to bring together different forms of knowledge as a feature of both technological capability AND of pedagogy as the act and art of teaching.
- Despite our best efforts as Teacher Educators, supporting students to create evidence-informed subject pedagogy remains challenging.

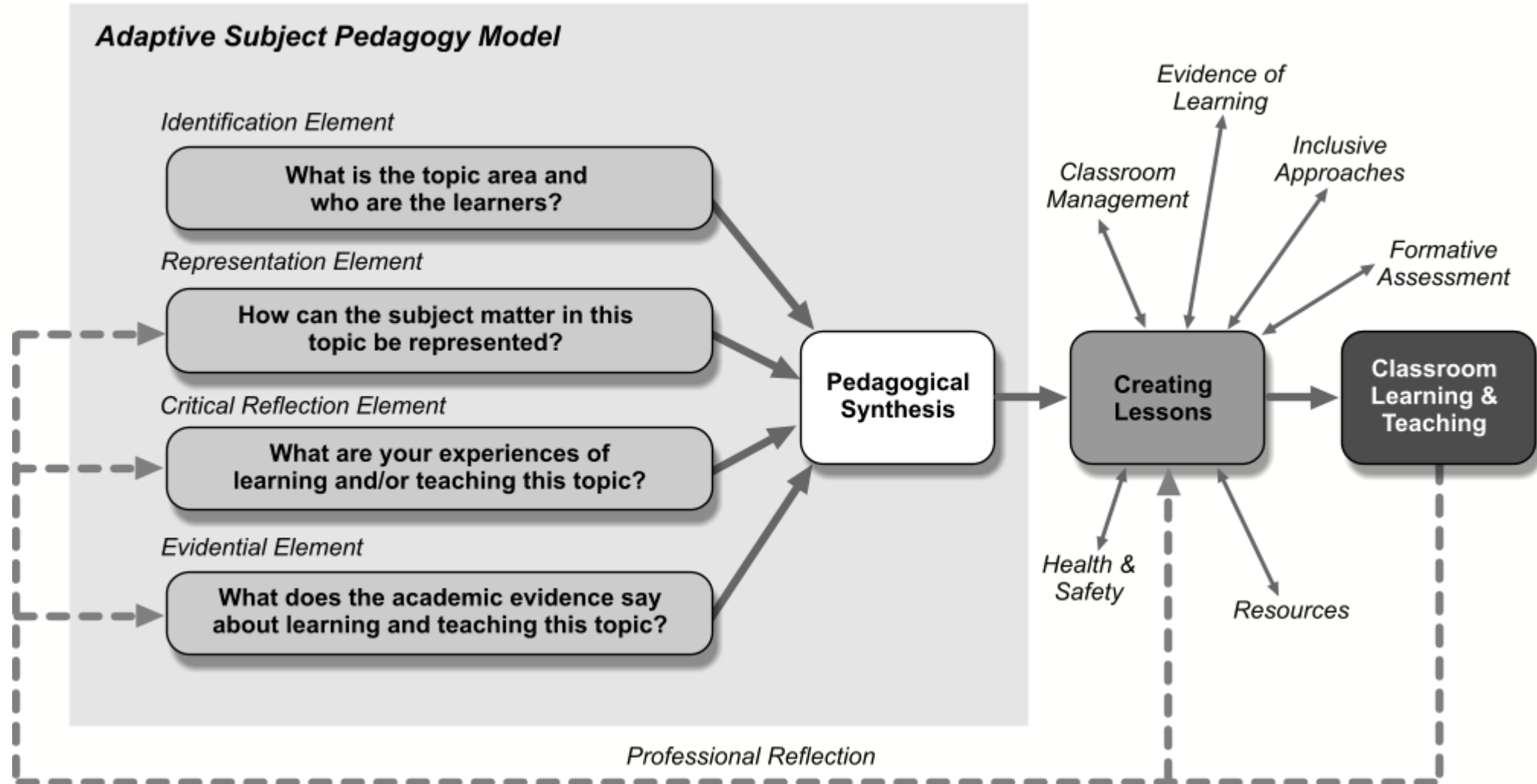


Our practice challenge

- Research & Scholarship project centred on work with our students on a 5-year integrated Masters Programme in ITE for Design & Technology (Currently in Phase 4)
- Adaptive Subject Pedagogy Model (ASPM) (Morrison-Love & Patrick, 2022), developed in response to challenges student had in:
 - Integrate different forms of evidence and knowledge into planning
 - Tendency towards behaviourist, linear-rationalist approaches to planning for teaching
 - Planning tended towards generic rather than subject-specific pedagogy
- Evidence shows that the ASPM can help students to improve their ideas for subject pedagogy, but some still struggle to connect with evidence and develop their pedagogical reasoning.

The Adaptive Subject Pedagogy Model

Version 6



Phase 4: Research question & methodology

- RQ: ‘What do students’ reflections on their use of the ASPM tell us about their pedagogical reasoning?’
- Purposeful approach to participant selection: Voluntary, Years 2, 3 and 4
- Two S-S Interviews, recorded with Zoom: Stimulated-recall (SR) method using students’ own assignments to support verbalisation of reasoning (Burden et al 2015; Lyle 2013)
- Transcripts thematically analysed (Clarke & Braun, 2017)
- Ethical dimensions:
 - Dependant relationship (interviews after assignment grading)
 - Power differentials
 - Interviews as ‘non-evaluative’



Findings: Theme 1

Shifting thinking about planning: from tasks to pedagogies

- Conversations supported linear lesson planning leading to a more technical approach for these students: 'tick boxy', greater flexibility with ASPM, ASPM used independently of lesson planning.
- Elements of ASPM not considered in isolation, with interrelationships between these becoming more prominent in thinking.
- Developing their own pedagogical expertise/knowledge: curriculum areas to understand more fully, were challenged by or had difficulty teaching; informed by classroom experience.
- Shift in thinking from plans as 'tasks to do' to thinking 'how am I going to teach this?' ('descriptions of classroom procedures' > 'how to enable learning')



Findings: Theme 2

It takes time: learning to like the ASPM

- Time emerged as important in both a practical and a developmental sense
 - ASPM frontload effort: lesson planning far more focussed/concise
 - Time to 'learn to like' the ASPM: Student A 'stopped resisting' when usefulness became clear, felt less daunted.
- Linking to placement: 'I think that's maybe something that the ASPM's missing, is you know, how do you link that to your environment and your kids rather than just high level.'
- Student B: Better cycles of the ASPM were those in which the pedagogical approach at the end was not what you thought it would be at the start.
- Importance of personal connection and beginning to thinking generatively.



Findings: Theme 3

The challenge of connecting with evidence

- Engaged with research in a different way and difficult in early stages: Student B: 'initially it was really, really difficult... but the more I've done it, and the more I've seen the outcome, the more I've seen my own progression working with the ASPM'. Over time, Student B came to enjoy engaging with literature and then 'using that to enhance your practice'.
- Personal connection to something in the research, often linked with pupil learning in their own classrooms and reflection from a range of experiences.
- Repositioning perspectives from the self as developing Teacher, to foregrounding the needs of pupils.
- Student A: Transformation of practice through developing pedagogical reasoning (from more deficit view of why do pupils not know).



Closing Remarks

Here, we reported upon the first two interviews in this phase of the scholarship and research and this builds upon our evidence to date:

- Personal connections, associated with idea of value, appeared to play a significant role for students in developing their use of the ASPM.
- Where students felt the process to be most effective, there were also key shifts over time:
 - (i) technical > adaptive/connected, classroom procedures > enabling learning
 - (ii) themselves as learners to their pupils as learners
 - (iii) challenges with published evidence to purposeful engagement
- **Going forward:** (i) Explore the extent to which these things are reflected in how other students are thinking across the programme, (ii) Version 7 of the ASPM, and (iii) The move to begin theorising from our evidence.



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