



## The Teaching-Research Nexus

A guide for academics and policy-makers  
in higher education

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### Examples from Australian universities

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#### Action Research into Effective Strategies for IT Education

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**Broad discipline area:**

Education

- IT Education

**Year level:**

- First year undergraduate to postgraduate

**TRN strategy:**

- Conducting and drawing on research into student learning to make evidence-based decisions about teaching

NOTE: This is a good example of pedagogic research that is also discipline-based research in the field of Education.

**Teaching and learning context:**

- Online self-paced learning (students can participate in synchronous online support sessions using Elluminate)
- Computer labs (optional sessions for those requiring face-to-face contact)
- Reflective learning
- Life-long learning

**Brief description of the initiative:**

This academic's approach to teaching core educational information technology undergraduate and postgraduate courses for the Bachelor of Education (Primary) and the Diploma of Education (Secondary) programs is informed by her research. Her PhD on the factors that influence people's engagement with technology used action research to develop a "metacognitive" model of pedagogy for teaching computer education. This model was developed and tested in the online ICT course *Educational Information Technology* for both the primary and secondary Education programs. Enrolment numbers ranged from 200 to 250 per semester.

This academic views teaching and research as a circular process involving rigorous action research through which she models, and provides explicit instruction on strategies for being a reflective practitioner who researches his/her own teaching

practice. She encourages her students to reflect on their own learning styles and to incorporate the model's principles into their own teaching styles, thus enlarging their repertoire of teaching strategies. The research focused on making evidence-based decisions about teaching strategies that facilitate the development of capable computer users. This lecturer challenges traditional teaching approaches in IT which emphasise providing learners with a set of skills, arguing that this field is changing so rapidly in that skills quickly become redundant. Instead, she focuses on developing students' confidence and capability to adapt to change and to go on learning whatever the context.

This model of computer learning was developed using three cycles of action learning phases: planning; acting; observing; and reflecting.

- Cycle one involved the researcher observing the effectiveness of the pre-existing course.
- During cycle two, students were presented with more options about how they engaged with the content. The course progressed from directive and linear to reflective and modular with choices as to when each module could be completed.
- Cycle three further refined the approach and prompted students to consider the nature of online learning. Independent learning was an explicit goal.

As these students were future teachers, this approach enabled them to have a greater appreciation and understanding of strategies that increase students' independence together with strategies for using IT to differentiate learning.

#### **Evidence of effectiveness and impact:**

This initiative was evaluated using data from survey instruments, observations and qualitative data drawn from the reflective journals of teachers and students. Feedback from the students was incorporated by restructuring the content in each topic in response to identified needs:

- for foundational understandings/skills
- to be challenged to set and achieve ambitious goals
- for learners to test out their knowledge.

This enabled greater choice in content and activities in which to engage. By the end of the project, individual goal-setting ensured students were actively engaged in selecting the most appropriate content to achieve their individual goals. Feedback from students suggests that the move away from the linear 'one-size-fits all' approach produces a relevant and challenging learning environment. This initiative enables pre-service teaching students to be confident that they can continue develop their skills and knowledge, and to integrate ICT throughout their professional careers.

#### **References:**

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- Phelps, R. (2003, October). *Developing online from simplicity toward complexity: Going with the flow of non-linear learning*. Paper presented at the NAWeb 2003: The Web-based Learning Conference, University of New Brunswick, Fredericton, NB, Canada.

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**For further details:**

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