Managing 'What Technology Where' Through Higher Level Constructive Alignment

What are the aims of this project?

Whilst we are becoming proficient at teaching computing students to evaluate technologies critically, they remain ill-equipped to decide which technologies suit industry problems. Each problem is novel, and demands a novel combination of technologies that simply cannot be taught beforehand. Our objective thus is to give students the knowledge to learn for themselves. We would appropriate Biggs' Constructive Alignment and Peirce's Pragmatism, as the pertinent starting points for this aim. From our principled evaluation, our anticipated outcomes would be an educational resource embodying an approach that could be applied across many other disciplines, and written up as a learned publication.

What is the background / rationale?

It is well-known in the computing industry that "for any particular problem, any one tool is an enormous aid to productivity. But any two of them together will kill you." Essentially each new problem presents a novel learning situation. We therefore need to ascertain how we can best equip students with the ability for self-managed, autonomous learning to cope with these life-long, challenging situations outside of the 'safe' environment of a university. Given that computing cuts across technological, cultural and social boundaries, it has a most wide ranging applicability/ transferability to other disciplines.

What are the benefits to student learning?

Our experiences from student assignment submissions demonstrate that they indeed find that "any two of them [tools] together will kill you." In many disciplines we expect students to 'analyse, compare and contrast, and identify', yet even the best submissions merely discuss each technology individually with little reference how they can be integrated to solve problems. Our study will promote learner autonomy in actually putting it to work. It will provide an exemplar that can be applied across the many other disciplines we teach at SHU, and spur the adoption of learner autonomy in our teaching throughout the institution.

How will this project be evaluated?

The rigour of the experimental design and analysis, and its dissemination and publication in a learned, peer-reviewed environment will demonstrate this evaluation as we have explicated above. We would also seek the advice of the CETL and CPLA, as well as those conducting fellow funded projects, colleagues and the students involved in this exercise as part of the evaluation to ensure it picks up on ongoing best practice, new knowledge and that our study remains relevant and contemporary.

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