

Authentic assessment as the cement of authentic learning in labs



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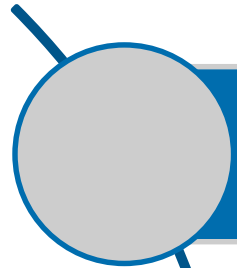
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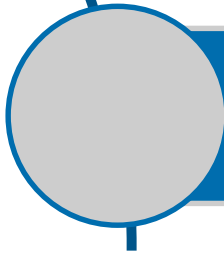


Chemistry Education Research Group

Authentic learning & assessment

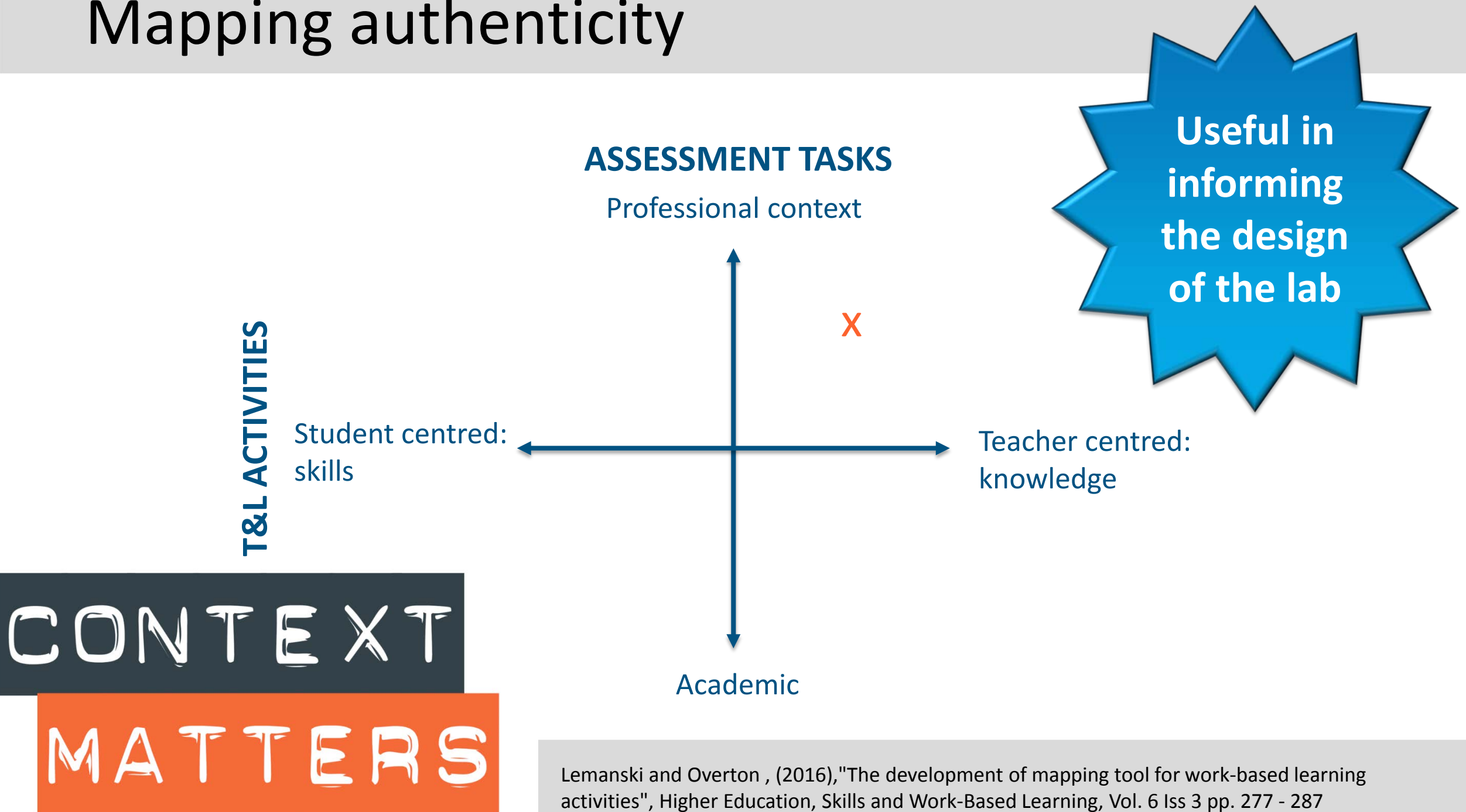


Authentic – genuine, real. Using and applying knowledge and skills in a real world setting



*In which students are asked to perform **real-world tasks** that demonstrate meaningful application of essential knowledge and skills (Meuller, 2014)*

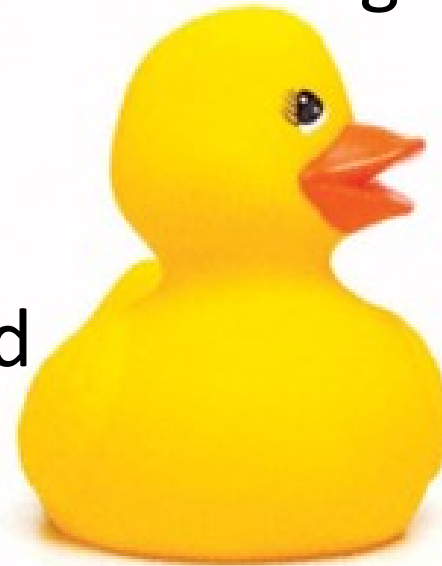
Mapping authenticity



Lemanski and Overton , (2016),"The development of mapping tool for work-based learning activities", Higher Education, Skills and Work-Based Learning, Vol. 6 Iss 3 pp. 277 - 287

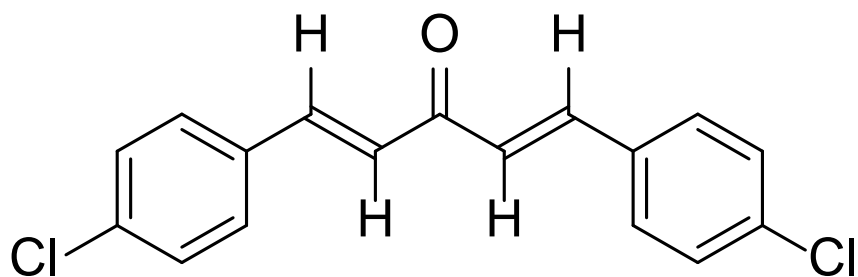
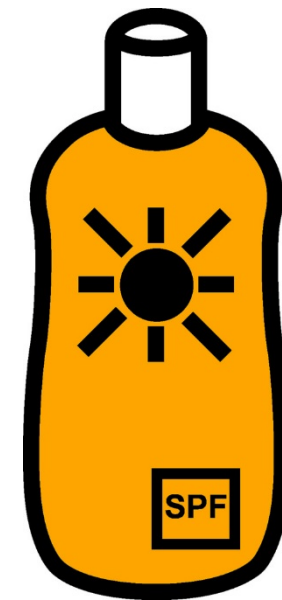
Principles of authenticity

- Assessment must be aligned to instruction (Biggs, 1994)
- Students demonstrate competencies through significant and meaningful tasks (Wiggins, 1993)
- Authenticity is subjective. Must be perceived as authentic to students to influence learning
- Task mimics professional role
- Teaching staff must be on board



From Claisen-Schmidt synthesis to developing sunscreen

- Traditional lab that worked well chemically (2nd year)
- Found a context and industrial partner
- Alter to teams, members make related compounds
- Directly assess properties
- Executive summary as part of the assessment



RATIONALE®

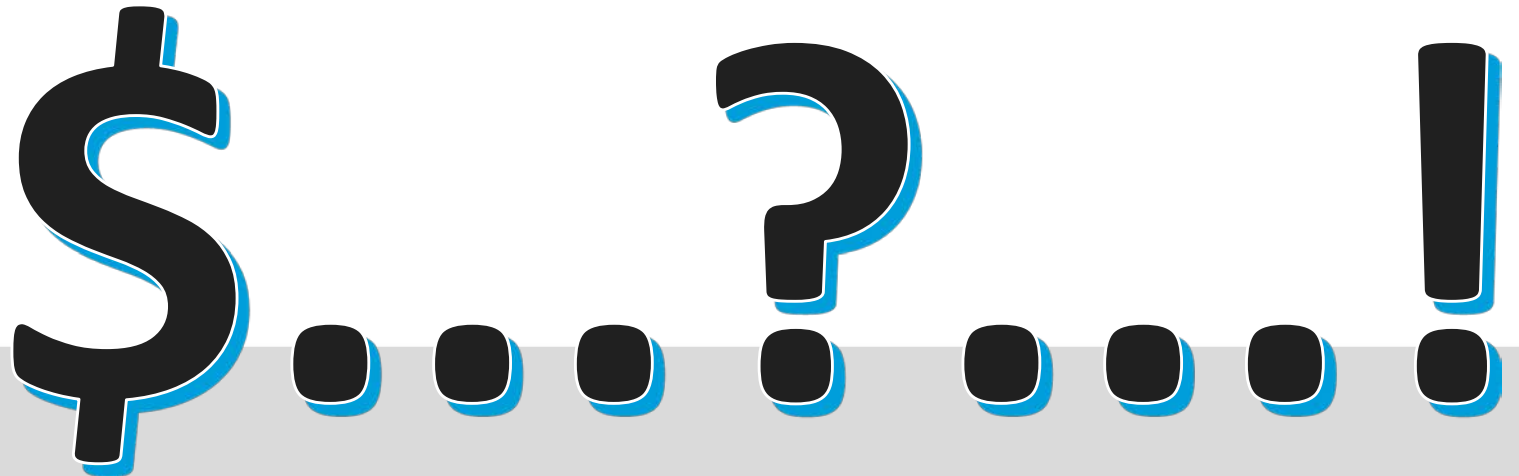


Not everyone appreciates the change

“The focus on the economics of chemistry, with particular regards to corporate profiteering, was horrible”

“the actual use of the product in protecting human health made secondary”

“this is a corruption of science...though I realise Monash probably doesn't care given the corporate funding it surely receives.”



Importance of writing assistance

Sunscreen prac

- Instructions
- Mixed results
- Plenty of great reports but missed the mark

Protein content in milks

- Instructions incl. an example of a rewrite of a poor executive summary
- Anecdotal feedback from demonstrators - more students grasped what an executive summary was.
- Exemplars to come in 2018



Students feedback: Food Chem

- One discussion recorded between students captures what we are trying to achieve with this initiative:

Student 1 *“it felt more relevant than my other units”,*

Student 2 *“yeah, more than anything I've done before”,*

Student 1 *“it's like a legitimate almost work experience type situation ... the methods that you learn, they feel applicable to the real world.”*

In summary

- Authentic assessment has a large role to play in delivering a great WIL lab experience
 - Informing modifications to the prac
 - Making students aware of workplace considerations
 - Engagement
- Authentic assessment doesn't have to be difficult
 - Students need support
 - Teaching staff are also likely to need support (applies to any new assessment)



Thanks

- Monash Science Faculty for funding the “Transforming Laboratory Learning” project
- The CERG group for support