Curriculum Design Pattern

Global Learning by Design

Name of Pattern	**Engineering Materials Wiki**
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Abstract

The Associate Degree in Engineering Technology (AD026) is a two year program offered in the School of Vocational Engineering. This program provides training in basic engineering skills, and can lead to a pathway into other engineering degrees. It is a first year, first semester course and students require a lot of support as they struggle with the volume and complexity of the text based learning resources.

The team redesigned the course to make it more activity based and engaging for students. This included the development of a self-paced learning guide and a Wiki based learning tool to enable students to work at their own pace to develop a better understanding of engineering materials and their application.

Rationale

This pattern provides

- A dynamic and engaging learning experience which will provide students with an opportunity to work at their own pace to explore complex concepts regarding engineering materials and their application.
- Design and develop an interactive course framework that will enable students, individually or in groups, to progressively construct knowledge of engineering materials and their application.

Learners

It is anticipated that this pattern could be applied to other courses where there is significant body of discipline theory to be understood and applied to various contexts.

The pattern could also be incorporated into the first year of other relevant Engineering degrees, which would ensure closer alignment with the associate degree.

Related patterns

NA

Category

Self-paced learning, technology assisted learning, online collaboration, blended learning.

Outcome/impact

- Students will develop a richer understanding of engineering materials and their application. They will gain confidence in searching for additional learning (online, library, video etc.) and in contextually evaluating and critiquing what they find.
- Students will be able to access the Engineering Materials Wiki through multiple channels and in multiple locations.
- Translate this work into a curriculum design pattern that can be adapted for other curriculum areas.
- It will also enable students to the Associate Degree student the capacity to direct their learning towards the way they would like their higher education to continue).

Alignment

It extends and focusses the broad skills and knowledge developed in this course. This is especially useful for Associate Degree students who will move into various higher education programs at third year level. It may also be useful for offshore students where they will be able to focus on their local context.

Challenges

Students who are used to a more traditional lecture based learning experience may have difficulty adapting to this new self-paced mode independent mode of learning.

Initially they will be supported through a more blended model where staff will be available to support them and the wiki activities will be interspersed throughout the course.

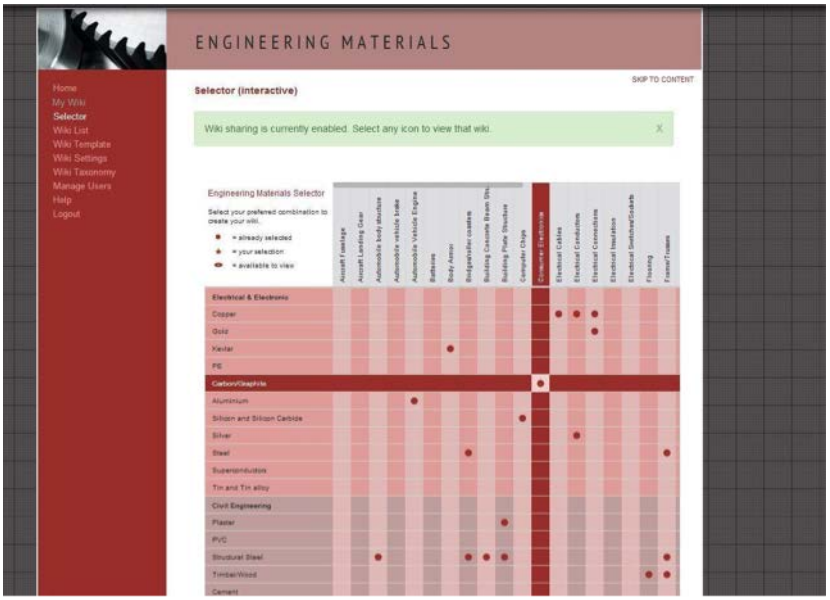
Ensuring that the students understand how to access and use the interface is very important. For this project we produced a series of short videos that walked them through the process.

Instructions/process

How do I go about adopting this?

- Use wiki tool within Blackboard classroom for your course
- Design a selector or commission a customisation of the Engineering Materials Wiki (preferably not Drugs in Sport as Flash is no longer supported).
- Select a primary and secondary focus—the secondary focus should be the customisation of the key learning outcomes of the course.
- Select sufficient aspects of the primary focus and secondary focus to produce a matrix of points that will give unique opportunity to all students—selections are on a first-come first-served basis—once a selection has been made no other student can make that selection. If sufficient matrix points can't be found, students can be grouped.
- Design how the wiki will be addressed in the course delivery (week-by-week, topic-by-topic ….) and build it into the Blackboard Classroom for the course, integrating with Grade Centre.

- Provide a video ‘how to’ (or text ‘how to’) to show students how to use the wiki and what is expected of their submissions.
- Provide a video ‘how to’ (or ‘how to’s) to ensure all staff are familiar with the functioning of the wiki tool.
- Provide an assessment rubric to guide students (self-assessment, peer assessment and academic assessment as required).



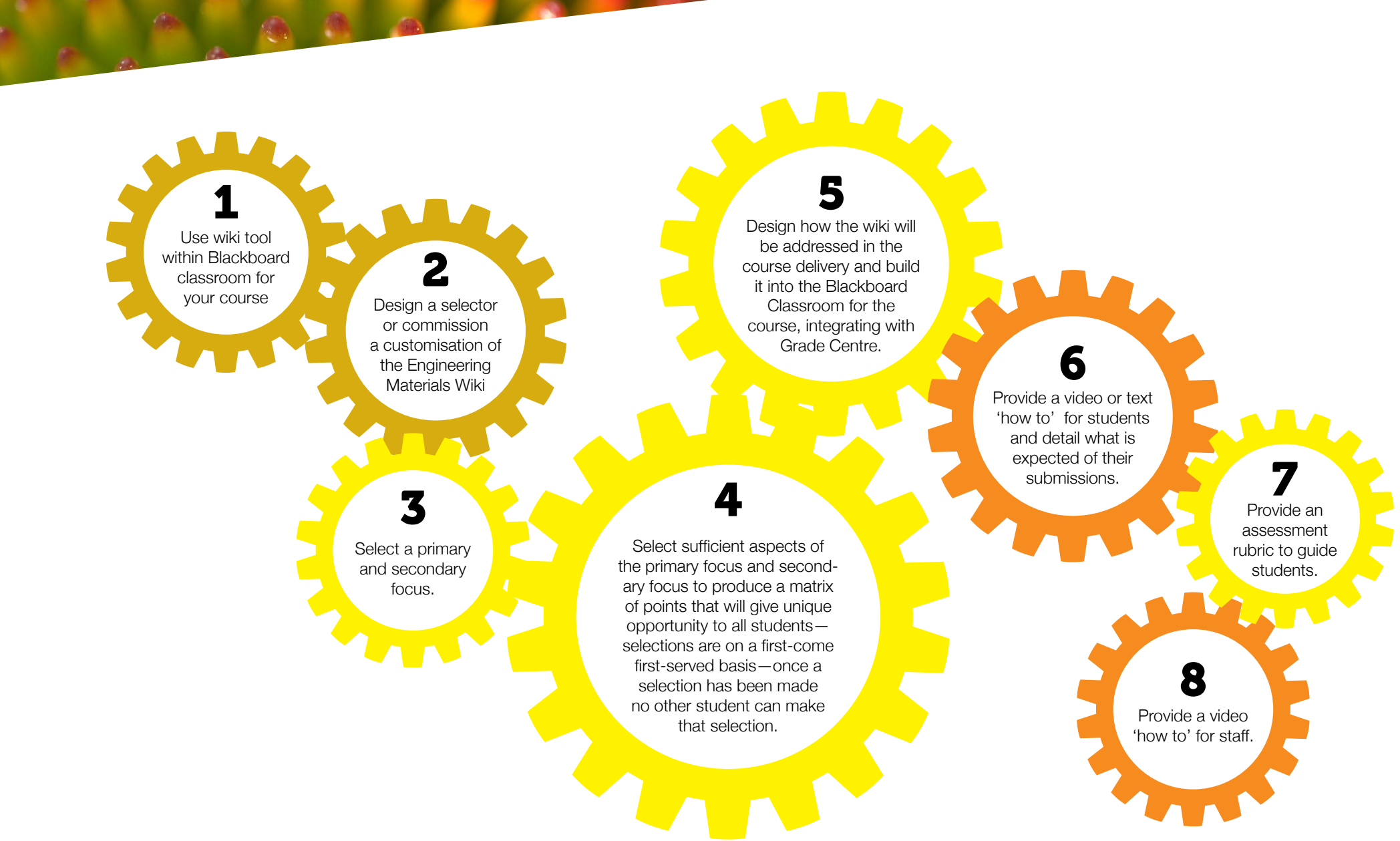
Resources

This wiki tool was created by EduTAG and they created all of the resources.

Reflection

The pattern will be trialled in Melbourne in sem 2 and in Vietnam in sem 3. It will be evaluated through student feedback and monitored levels of engagement.

As a pattern the concept is solid, however the use of a purpose built tool has issues in relation to re deployment. A similar concept could be implemented using the tools within the Blackboard LMS and a pattern based around the use of those tools may be a more sustainable model.


1
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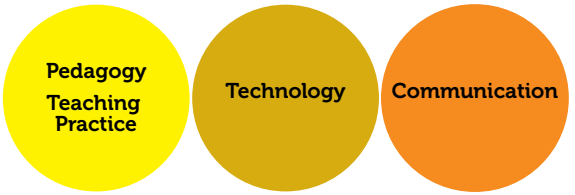
Design how the wiki will be addressed in the course delivery and build it into the Blackboard Classroom for the course, integrating with Grade Centre.
6
Provide a video or text 'how to' for students and detail what is expected of their submissions.
7
Provide an assessment rubric to guide students.
8
Provide a video 'how to' for staff.


Pedagogy
Teaching
Practice
Technology
Communication

Acknowledgements

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References

www2.tisip.no/E-LEN/tutorial/02.html

https://wiki.qut.edu.au/display/draw/Home

Laurillard, D (2012) *Teaching as a Design Science: Building Pedagogical Patterns for Learning and Technology*. Routledge, NY.