Planting the seeds for a sustainable future: A school based journey

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Overview of session

**Part One**
- Background to our sustainability journey
- Overview of our school and site
- Development of Sustainability Hub and school-based projects
- Examining our practice

**Part Two**
- Generating possibilities for practice – what can you take away?
The three main elements guiding our work about sustainability are:

- The environment – care and protection for our local and global environment. Includes restoration of our environment.

- Social/cultural/civic sustainability – the interconnected nature of our world, connections on a local and global level.

- Economic sustainability – ensuring that our actions and work foster economically sustainable actions for our local and global community.
Who are we? History of school and site

- P-12 college on the outskirts of Western Melbourne
- School was established in 1988 and is located on a 16 acre site south of Bacchus Marsh and is within close access to the Pentland Hills and Lerderderg State Forest.
- The school site is situated on a reclaimed open cut coal mining site.
The current school site was originally the maintenance site for a mining company. Buildings on the site included mining offices and sheds to service machinery and trucks. When transforming the site into a school, the buildings that were retained were converted into classrooms, a library, an art room, science room and a small gym. The ‘character’ of the school buildings (white corrugated iron) originated from these mining days.
Sustainability Hub and Projects

- The Sustainability Hub was established in June 2011 with the re-development of existing areas of school land and the construction of a central new building. Incorporating smart technology, the building is designed with sustainable practices in mind.

- The “HUB” is in this area of the school, providing a springboard for a range of interdisciplinary projects drawing from the organising ideas of Sustainability as outlined in the Australian Curriculum, and drawing on the key elements previously identified.
Curriculum design

- Goal of the process: to model and explore processes of curriculum design & development & to build capacity among teachers.

- Involves PSTs from a range of universities who are undertaking placement in the school.

- PSTs work together with staff on a process of curriculum design and development to see how they can incorporate sustainability perspectives and interdisciplinary approaches.

- Uses an Understanding by Design framework based on Wiggins
Stages of the process

1. Big Picture Brief - introducing the design process challenge in context.

2. Outcomes and unit ideas

3. Discipline overviews and lesson ideas

4. Detail and tweaking

5. Final products
This unit focuses on the essential elements that will introduce students to the idea of sustainability. A way of ‘looking into the future’ is by looking at the past, it is therefore important that students are to learn about the historical development of agricultural utilisation of the land, the use of tools and (later) machinery. This unit will incorporate the historical aspects of how humans have discovered, improved and engineered our techniques for sustenance, and building a society around the exploitation of natural and artificial resources cultivated from the land. The unit will also examine aspects of human lives that are inextricably linked to, and improved by, the progress of scientific and technological advancement.
Most importantly, however, this unit will encourage students to observe, hypothesize and eventually, implement ideas of ‘sustainability’, whereby all aspects of such ideas – including social, fiscal and environmental – will be closely studied. Working in teams students will investigate and explore ways to communicate their findings effectively and efficiently to a target audience by creating a factual print publication. This could take the form of a pamphlet, brochure, newspaper article or magazine spread.
Although for this unit we have focused on Bacchus Marsh, and rural Victoria, this unit can be used in any town/school by looking at an arising issue in your town, or a neighbouring town, or simply following the lessons that have already been given. The importance is placed on the students learning how communities, cities and towns, have grown and are still growing, towards a more sustainable environment, and emphasis should not be placed on the actual town which is being researched.
Skills and outcomes

- PSTs then identified outcomes and key questions relevant to their discipline areas, for example:

- **Historical skills that will be used:**

  - Identify and select different kinds of questions about the past to inform historical inquiry. (ACHHS166)

  - Identify and locate relevant sources, using ICT and other methods. (ACHHS168)
SUSTAINABILITY: ASSESSMENT BRIEF

A Problem has arisen in Bacchus Marsh and your community needs YOUR help!

Working in groups, you will create a print publication of your choosing to one of the following audiences:

- **Primary Producers (farmers)**
- **Consumers (your parents)**
- **Legislators (local councils/state government).**

The problem is, that Bacchus Marsh has grown significantly and has become unsustainable. This is due to the population growth out-stripping local food production and the lack of infrastructure. The production of electricity relies on non-renewable sources of energy. This is achieved by burning brown coal, which is extremely harmful to the environment - even more so than black coal! As you will soon discover...

**Primary Producers:** Local producers provide sustenance to the town and the surrounding areas - including Ballarat and gold mining sites. Due to the geographical location of Bacchus Marsh, this means they need to have state of the art machinery and technology to continue to provide for the constant growth of local population. The production of food is only part of the problem, the other lies in the distribution of the produce. Due to the great distances the
You are the CEO of a well established consultancy firm hired for your expertise in getting businesses out of trouble. You have been hired by Jurassic Quarry who have just compiled their annual report - and it isn't looking good! They are losing money, they are faced with making 150 staff redundant and on top of that they have to make the decision of whether they can continue to keep Jurassic Quarry open for business.
Teachers’ experiences and understandings of the hub

- Teachers’ invited to describe their understanding and experiences with the hub by participating in an anonymous, online survey.

- Survey contained both multiple choice and open-ended questions.

- Teachers who responded came from a range of subject areas and were predominantly from the secondary sector of the school (79%).
Entry points

- Of the respondents 21% rated their knowledge of sustainability perspectives and the way they may be integrated across the curriculum as very high. 50% of respondents said medium, 25% low to very low.

- 63% of respondents had used Hub for teaching and as a springboard for activities: eg writing, artworks, link in with in-class learning in Science, designing for development of new spaces/ additions to the existing space, wellbeing programs, biodiversity.

- Silences – who is missing?
Why the HUB?

- ‘showcasing what is occurring in the school’ – building community among students
- ‘real-life experiences and learning’
- ‘more participatory, holistic view of learning and provides scope for interconnections between discipline’
- ‘appreciation for the world around them’
- ‘builds skills in teamwork, communication, researching’
Building capacity

1) Mapping the sustainability outcomes to subject areas and outlines, including sample learning intentions/outcomes/plans linked to curriculum areas. Mapping from Early Years to VCE.

2) Learning from experienced others: in-house PL led by teachers who have experience demonstrating and guiding

3) Leading from Heads of Department: HODS bringing departments together to identify ways to integrate sustainability perspectives.

4) Individual research and reading

5) Time to work on curriculum development
Teacher identified next steps

- Fibre production plans in the greenhouse eg cotton/flax. Developing natural dyes for fabric using the plant material/vegies.

- Performance space for Drama

- Examples of conservation activities

- VCAL

- Health – compare/contrast vegetables home grown and the ones purchased in shops
Issues in implementation

- **Survey respondents:**
- Time to develop curriculum
- Teacher capacity in managing large classes of students in outdoor space
- Changing culture takes time.
Our reflections on the process

- Change management processes
- Focusing on student learning as way forward
- Building teacher community and shared vision
- Scaffolding process and offering support
- Sharing successes of practice
Creating possibilities for practice

- 30 mins using principles of Design Thinking in Roundtable groups
- Using the organising ideas from Australian Curriculum, and the ideas and projects we have explored in this session, define a challenge or focus for implementation in your context.
Defining a challenge or a way forward:

- Dreaming and imagining: what you dream could exist in your context. How might you make them a reality?
- Challenges—what might the challenges be? How might you overcome them?
Takeaway

- What?
- So what?
- Now, what?

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