Blended learning in the senior science classroom: creating opportunities for all learners

Cat Stone, Australian Science and Maths School
What is different about a classroom in Australia in 2015 and...

- 17th Century London?
- Mali?
- Australia in 2025?
21st Century Education - AITSL
DISCUSSION PROMPT 2

“New technologies could never replace great teaching.”
Blended Learning?
50 Education Technology Tools Every Teacher Should Know About

by WDC Team | Jul 23, 2014 | 46 comments

The future of education in Africa is mobile

United Nation's mobile learning specialist Steve Vosloo argues phones could be the future of education on the continent.
DISCUSSION PROMPT 3

3 things that you have learned.

2 things that you found interesting.

1 question that you still have.
5 MINUTE BREAK!
The Flipped Classroom Approach in Stage 2 Psychology

The story of how to two teachers tried to make it work!
What is a ‘Flipped Classroom’?
Theory and reality can be different?

**Theory**  →  **Reality**

All the penguins are engaged......and not looking for formal dresses online!
All the penguins are engaged......and not turning up to class 50 minutes late with McDonalds!
All the penguins are engaged......and did not go to bed at 4 am and using Red Bull to stay awake in class!

Theory and reality often different!

What was our reality?
Lack of internet access
Different pace of learning
Lack of motivation
Other assessments
In theory we didn't know what the walrus was doing!

We needed to understand what OUR role was in the classroom?

How do we know about student progress?

What is the role of the teacher during sessions? What ‘structures’ did we introduce and why?
- Ongoing formative assessment methods - why and how?
What does the ASMS ‘Flipped classroom’ look like?

Appetizers
These studies are designed to provide the foundation skills, knowledge and understandings needed for further study in this topic.

- Webinar 1: What is Learning?
- Webinar 2: Classical Conditioning
- Webinar 3: Classical Conditioning continued
- Webinar 4: Operant Conditioning
- Webinar 5: Schedules of Reinforcement in Operant Conditioning; Observational Learning

Entree
While providing some choice, these options have a focus on applying your skills, knowledge and understandings.

- Wizz Fizz Experiment

Side Dishes
Choose one of:
- Classical Conditioning Exercises
- Positive Reinforcement questions

Choose one of:
- Types of Reinforcement and Punishment
- Familiarising with Stimuli and Responses Worksheet

Side Dishes
Watch one of the following videos and complete the worksheet or write a summary of the key points:
- Operant Conditioning and The Big Bang Theory
- Extra credit: Discovering Psychology by Phillip Zimbardo

Toppings
Extra notes to help clarify some of the tricky concepts:
- Classical Conditioning explained
- Contiguity and Contingency explained

Main
While providing choice, these options have a focus on extending your skills, knowledge and understandings.

- Influential Learning Experiments

Side Dishes
Choose one or more of:
- Skinner’s Box
- Flash card game
- Schedules of Reinforcement grid

Side Dishes
Choose one of:
- Classical Conditioning and taste
- Session
- Designing a Project Learning in the real world
What is Learning?

- To gain knowledge or skill by study, experience, or being taught
- There are unlearnt behaviours and learnt behaviours
How do our students access this?

Everyday Experiences
Psychological Treatments
Social Applications
Exams
VC Settings
SITE CONTENTS

- The factors that influence learning through observation
- The distinction between the acquisition and performance of a learned response

Webinar 1: What is learning?
Webinar 2: Classical Conditioning (basics)
Webinar 3: Classical Conditioning (advanced components)
Webinar 4: Operant Conditioning (basics)
Webinar 5: Operant Conditioning (advanced components) and Observational Learning

Learning Activities

<table>
<thead>
<tr>
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<th>Main</th>
<th>Dessert</th>
<th>YouTube videos</th>
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<td>Skinner's Box</td>
<td>Learning Formative Test</td>
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<td>Flash Card Game</td>
<td>Learning Formative Test</td>
<td>Jaws</td>
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Documents
- Adventure Menu - Learning
- Learning Menu - Student Checklist
We started thinking....

- Tried to evaluate ‘Flipped classroom’ effectiveness - was it working for our students?
- Quantitative data collection - inconclusive and not valid

We did some more thinking........

- We did not feel proficient in implementing the ‘Flipped Classroom’ - were our students being supported?
- Large class - where were they up to?
- Portfolio of learning per topic presented to teacher to comment on progress - was this beneficial to students?
- Limits to time meant feedback was not valued by students - we had moved onto the next topic when feedback was received.
Differentiation is...

Altering your interactions with students or student tasks based on their:
READINESS
INTEREST
LEARNING STYLE
Find out ‘where they are starting from’.
‘About me’ letter - an opportunity to assess student readiness and interest. Could also assess literacy abilities and learning style (self-reported).

Exciting introductory activities to capture student interest in a topic
E.g. Whizz Fizz and Pavlov.
Gauge student progress

- Encourages student collaboration
- Immediate visual understanding of how students are progressing through the content
- Goal setting
Break times and Goal setting

- 100 minute session- 2x45 minute with a 10 minute break
- Each session starts with setting a goal- a specific, achievable and measurable goal. Written on post-its notes for our benefit and to encourage their commitment to goal.
Exit Cards

Formative assessment
“Who knows what?” and “Do I know this?”

Handwritten- preparation and practice for the final exam.
Small group tutorials

Based on readiness. Generally self-allocation. Allows for discussion.

Also highly collaborative and social working environment with task focus. Allows for opportunity to learn from others and to clarify own understandings by explaining/teaching others.
Post Test Reflections

Aim is to move knowledge from short to long term memory via reflection.

Knowledge to understanding.
One on One discussions

10 minute discussions with a focus
E.g.

● “What data are you using in your investigation and what does your data mean?”

● Critically reviewing a section of an assignment *together* using the rubric.

● Student choice - a chance to chat!
Questions and comments?