ITE Teaching and Learning CONFERENCE
Enhancing authentic learning capabilities

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Authentic learning
What is it?
What is it not?

9 elements of authentic learning
- Authentic context
- Authentic activity
- Expert performances
- Multiple perspectives
- Collaboration
- Reflection
- Articulation
- Coaching and scaffolding
- Authentic assessment

(Herrington, Reeves & Oliver, 2010)

Authentic context
A physical or virtual environment that reflects the way the knowledge will be used in real-life

Authentic context
- The context needs to provide the purpose and motivation for learning
- Ideas can be explored at length
- A design to preserve the complexity of the real-life setting
- Not sufficient to simply provide suitable examples from real-world situations to illustrate the concept or issue being taught

Authentic tasks
Tasks and activities that have real-world relevance
**Authentic tasks**

• Design activities that have clear goals and real-world relevance
• Tasks that require production of knowledge rather than reproduction
• Tasks that are complex and ill-defined
• Completed over a longer period

**Expert performance**

Access to expert thinking and the modelling of processes

**Expert performances**

• Access to the way an expert would think and act
• Access to learners in various levels of expertise
• Opportunities for the sharing of narratives and stories

**Multiple perspectives**

Different perspectives from different points of view

**Multiple perspectives**

• Not just a single perspective - such as a textbook
• Sufficiently rich learning environment to sustain repeated examination
• Different points of view

**Collaboration**

Joint problem solving and social support
**Collaboration**

- Teams or pairs rather than individuals
- Collaboration encouraged through technology (discussion, chats, debates, wikis)
- Tasks addressed to groups, not individuals

**Articulation**

Opportunities for students to speak about their growing understanding

**Articulation**

- Problems that need to be discussed
- Presentations to class
- Public presentation of argument to enable defence of position and ideas

**Reflection**

Opportunity to think about, reflect and make choices

**Reflection in action**

- The facility for students to move around their learning environment and to act upon reflection
- Not quiet and solitary - can be a two-way process
- Non-linear organisation of learning environment
- Opportunities to make choices

**Reflection on action**

- Journals
- Diaries
- Blog site or word processing
### Scaffolding and coaching

Support provided to the learner by the teacher and others in the learning environment

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### Coaching and scaffolding

- No attempt to 'transmit' knowledge
- Teacher’s role is supporting rather than didactic
- Collaboration where more able partners can assist

### Authentic assessment

Assessment is integrated with the task rather than separate testing

- Seamless integration of assessment and task
- Opportunities to enable students to craft polished performances
- Significant student time and effort in collaboration with others

### Example: Research methods

- Course: [Research preparation: Research methods](#)
- Max Angus & Jan Gray, School of Education, Edith Cowan University

### Focusing on the task

It’s the task that matters most!

Tom Reeves
Focusing on the task

Research investigated examples of courses or units that use authentic tasks as a framework for the completion of an entire semester course.

What are not authentic tasks?

Authentic tasks are more than stories and examples.

What is an authentic task?

a. $2x + 1 = 7$
   Solve for $x$

b. $\frac{1}{2} + \frac{3}{4} =$

c. Graph $y = \sin 2x$

Word problems

There are 25 people in a room. How many handshakes would there be, if everyone shook hands with every other person?

Decontextualized problems

Let $F$ be the vector field on $\mathbb{R}^3$ given by $F(x,y,z) = (2xz, -x, y^2)$
Evaluate
$\iiint_{V} F \cdot dV = (\iiint_{V} 2xz \, dV, -\iiint_{V} x \, dV, \iiint_{V} y^2 \, dV)$
where $V$ is the region bounded by the surfaces
$x = 0, y = 0, y = 6, z = x^2$ and $z = 4$

Programmed learning (c. 1978)

Answer 11 critical
12

The instances the student is asked to categorize in order to test mastery of a concept should be
from those used to teach the concept.

Turn to page 353
Programmed learning (c. 1978)

Answer 12 different

13

When two or more concepts form a relationship, this is a ________________.

Turn to page 355

Programmed learning (c. 1978)

Answer 13 principle

14

A principle consists of two or more (a) ________________ whereas a verbal chain consists of several (b) ________________ in an indicated order.

Turn to page 357

Instructional exercises

1. Read Wilson: 'The place and aims of reflection in learning'

2. Activity
   • What is meant by 'in-task reflection.' How does this relate to colloquial, academic, interpreted, reflection?
   • In relation to the Australian experience, how has reflection impacted on curriculum developed over the last 150 years?

Instructional exercises

• Watch the YouTube movie entitled: 'Motivational intervention'.
• As you watch make a list of the techniques being used by the counsellor:
  – What specific techniques were used?
  – Which techniques work?
  – What is the counsellor trying to do?

Word problems

If there are 26 sheep and 10 goats on a ship, how old is the captain?

Schoenfeld (1991)
“nonreason” - a willingness to engage in activities that don't make sense

Collins (1988): ‘suboptimal schemes’ for remembering information to pass tests

Word problems

Problem:
If a person jumps off a moving bus, how would that affect the speed of the bus?

"It depends on what the driver does"

"It depends on whether the other passengers notice"

"It depends on how heavy the person is"

"It depends on whether anyone cares about the person "

Some PBL problems

- Problem-based learning example
- *When Twins Marry Twins*

Thematic approaches

The four seasons
- Science
- Music
- Poetry/writing
- Mathematics
- Geography

Most video games

- Most games do not require a product

What are authentic tasks?

- have real-world relevance
- are ill-defined
- comprise a complex task to be investigated by students over a sustained period of time
- provide the opportunity for students to examine the task from different perspectives, using a variety of resources
- provide the opportunity to collaborate

Authentic tasks:

- provide the opportunity to reflect
- can be integrated and applied across different subject areas
- are seamlessly integrated with the assessment
- create polished products valuable in their own right
- allow competing solutions and diversity of outcome

Example: History

- Course: *Year 10 History - World War 1*
- Peter Morrissey, Coonabarabran High School
Example: Negotiation skills

- Course: Management - Employment relations
- Delicate dining
- Sandra Jones, RMIT, Melbourne

Example: Digital stories

- 1st year teacher education compulsory IT subject
- One major task over 7 weeks

Digital stories

Device
- iPods

Curriculum/Focus
- IT for Early childhood teachers

Task
- Create a podcast of an original story - a talking book created in PowerPoint and iMovie

The task

- 7 weeks in a 13 week semester
- Technology available to students:
  - iPods and microphones (1 x iPod per group of 2-3 students)
  - Video and still cameras - students used their own
  - Computers and software required for story-book construction: (e.g., PowerPoint, GarageBand, iTunes, iMovie, iPhoto, Word, ComicLife)

Writing the story

- Children’s author as guest speaker
- Research and choose topic
- Write and storyboard story

Sharing

- Groups publish story to the course website
- Students download each other’s stories to put into their course portfolios and resources
- Students present Powerpoint presentations in class, and submit stories on iPods for assessment
- Students create a reflective journal on the process and product (e.g., as podcast, blog, comic or webpage)
This was certainly a project which had it all, tears and laughter; frustration and excitement.

What a challenge, but what a great feeling of achievement we all feel now it's complete - well almost. We still need to transfer it on to the iPod and save it to Quicktime, but place a cake right??

We faced a LOT of problems, but by asking people and through trial and error we came up with a solution.

We have proved to ourselves that with a little trial and error, perseverance and a few tears, we can succeed.

You indeed, those tasks no longer scare me, because this has been a really challenging assignment but I did learn things I had never even heard of before, I guess that was the idea!

COGNITIVE TOOLS

- Brainstorming ideas in Inspiration
- Researching on internet
- Creating story pages in Powerpoint
- Creating movie in iMovie
- Inserting images
- Inserting sounds
- Scanning drawings
- Recording voiceovers
- Exporting files
- Importing files
- Adding sound effects
- Timing slide advances
- Creating movie files
- Uploading files to server
- Publishing podcasts
- Creating movie files
- Uploading files to iPods
- Other stories

Implications for teaching and learning

1. Academic tasks set in a real workplace setting (e.g., work sheets or IBL exercises completed on an internship or field trip)
2. Real tasks completed in a real workplace setting (e.g., practice in a school or hospital, restaurant, salon or studio)
3. Real tasks completed in an academic setting (e.g., complex 'cognitively real' tasks)

Learning to be

Learning about

Learning to do

Website to accompany presentations

Downloadable books, papers, links to sites and resources

http://web.me.com/janherrington/ITE2010/