

A Learning Design to Deliver a Personalized and Collaborative Distance Learning Experience

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Overview

- Looking at a taught Masters course through the lens of authentic learning theory
- Reflecting on design research as an approach to evaluating and improving upon course design and development
- A few challenges with delivering this sort of course

Learning Technology Unit

- Director, Learning Technology Unit (LTU), Faculty Medical and Health Sciences (FMHS), University of Auckland.
- Unit exists to support the Faculty in its flexible and distance learning requirements.
- More details about our unit on the FMHS website.

<http://www.fmhs.auckland.ac.nz/faculty/ltu/>

CLINED 711

- CLINED 711 is a fully distance course to teach health professionals / academics involved in clinical teaching how to convert a traditional course for either flexible or distance delivery.
- CLINED 711 was first offered in 2007 as an option in either the Diploma or Masters in Clinical Education.
- ClinED 711 is a 15 point paper with 120 points required for the Masters (60 taught / 60 research dissertation)

<http://www.fmhs.auckland.ac.nz/faculty/cmhse/pg.aspx>

Student Characteristics

- UOA teaching staff & clinical educators
 - Academics teaching within the Faculty
 - General practitioners, nurses, pharmacists, psychologists, surgeons
- Demographics matter
 - Traditional expectations around teaching
 - Limited time for study
 - Working odd hours
 - Professional identity

Learning Design Principles

- We originally designed ClinED 711 to engage students in authentic learning activities i.e. activities that we as instructional designers engage in as part of our work.
- This approach resulted in a personalized and collaborative learning environment.
- However, authentic for us just meant genuine tasks.

Learning Design Principles

- Here we examine ClinED 711 in terms of authentic learning theory.
- Others can see how the elements of an authentic learning environment might be instantiated.
- We can also look at what the instantiation means in terms of a research approach.
- Overall the question is whether we could have done better with respect to design & research.

Authentic Learning

- Herrington and Oliver (2000) have suggested that authentic learning can be delivered in a learning environment that features nine situated learning design elements. These are:
 - (1) Provide authentic context that reflects the way knowledge will be used in real life;
 - (2) Provide authentic activities;
 - (3) Provide access to expert performances and the modeling of processes;
 - (4) Provide multiple roles and perspectives;

Authentic Learning

- Herrington and Oliver:
 - (5) Support collaborative knowledge construction;
 - (6) Promote reflection to allow abstractions to be formed;
 - (7) Promote articulation to enable tacit knowledge to be made explicit;
 - (8) Provide coaching by the teacher at critical times and scaffolding and fading teacher support; and
 - (9) Provide for integrated assessment of learning within the tasks.
- See also Reeves, Herrington and Oliver (2000).

Authentic Learning

- Students progress through the ClinED 711 learning about e.g.
 - Learning theories
 - Instructional design models;
 - Instructional design practice; and
 - Quality in eLearning.

<http://cecil.auckland.ac.nz>

<https://www.coursebuilder.cad.auckland.ac.nz/flexiblecourses/755/publish/1/index.html>

Authentic Learning

- Providing an authentic context that reflects the way knowledge will be used in real life – situated learning element (1) – along with providing students with authentic learning activities – situated learning element (2) – are both fundamental to the approach that we took to developing and teaching ClinED 711.
 - Needs Analysis Document
 - Course Development Document
- Students therefore take responsibility for their learning / are actively engaged.

Authentic Learning

- Students are assessed on the completion of their Needs Analysis Document and on the completion of their Course Development Document (amongst other things).
- Assessment is, therefore, authentic and integrated with the students' learning (situated learning design element 9).

Authentic Learning

- With respect to social participatory learning – situated learning element (5) – learners engage in collaborative exercises through participating in online discussions and through engaging in peer critique exercises.
- Reflective practice and articulation of personal perspectives on teaching – situated learning design elements (6) and (7) – are encouraged through peer critique activities, self-reflection activities and through comprehensive feedback provided by the course tutor

Authentic Learning

- The tutor provides coaching at critical times and scaffolding and fading teacher support – situated learning design element (8) –through e.g. giving detailed feedback throughout the course in accordance with detailed marking rubrics and through gradually expecting more of students to the point where students now have to design and teach a module.

Authentic Learning

- Since the introduction of student led modules after the first iteration of the course in 2007, students on ClinED 711 progress from being relative novices in the area of instructional design to having to design and teach one of three modules (out of a total of eight modules) that had previously been tutor-led in the first iteration.

Authentic Learning

- The student-led modules were created as collaborative tasks in which a pair or small groups of students (up to 4) would be assigned to one of the three designated modules.
- Students were provided with only a brief introduction to the module together with a set of learning objectives that they have to assist their peers to achieve.

Authentic Learning

- Each module lasts 2 weeks:
 - Of the 20% of the total course mark allocated to the student-led module task, 12% is for the creation of a web-based module resource;
 - 5% is allocated to moderating module tasks and online discussions engaged in by peers as they undertake the module; and
 - 3% to accurately evaluating the success of the module design, resource, and moderation.

Authentic Learning

- The use of student led modules means that students take a different perspective – situated learning design element (4) – on their learning through having to create a module for their peers.
- Student led modules also place learners in the position of observing real life learning put into practice – situated learning principle (3) – and learners are exposed to thinkers with different levels of expertise.

Authentic Learning

- Finally, creating an authentic learning environment entails providing access to expert performances and the modeling of online teaching processes (situated learning element 3).
- Students on ClinED 711 experience expert performance and the modeling of instructional design processes / teaching practices through the work of the tutor who teaches on ClinED 711.

Authentic Learning

- Students progress through the course in terms of an exemplary learning design that was developed and implemented by the course tutor.
- Students are supported throughout the course via email, through tutor contributions to the discussion in the social network and through receiving feedback from the tutor on assessments.

Authentic Learning

- The tutor on ClinEd 711 models excellent teaching practices. The 2007 external assessor wrote that, “the creative and practically-oriented assessment tasks are to be lauded. It seems that the course teachers are modeling excellent tutoring techniques.”
- The standard of tutoring on ClinED 711 has remained very high with the 2009 external assessor reporting on the course with equally strong praise for both the course design and the teaching.

Course Evaluations

- We have evaluated CLINED 711 on various levels:
 - Participants' reactions (post-course evaluation and one-year follow up interview).
 - Participants' learning (post-course evaluation and one-year follow up interview).
 - Participants' use of new knowledge and skills (one-year follow-up interview).

We Really Did Do Well

- 26 student evaluations over a five year period.
- The course evaluations have been almost wholly positive in terms of the university's standard evaluation questions.
- Most notably 25 of the 26 students reported that ClinED 711 had helped them to enhance their teaching practice.
- Students remained very positive about the course at the one year follow up interviews.
- Two exemplary external reviews.

Authentic Learning

- ClinED 711 does provide an authentic learning experience where authenticity is understood with reference to Herrington and Oliver's work (2000).
- ClinED 711 also results in a personalized learning experience.
- Finally, there is a high degree of collaboration due to the nature of the authentic tasks.

Personalised Learning

- Personalised learning meets the individual learning needs of a diverse range of students whilst encouraging independent learning (Johnson, 2004) through learners taking greater responsibility for their own learning and through learners being more actively engaged in the learning process (Hannafin & Land, 1997; Ong & Hawryszkiewicz, 2003).

Personalized Learning

- Teachers can facilitate personalised learning by adopting teaching strategies that meet the needs, abilities and aptitudes of each student thereby providing for an individual learning pathway (Sun & Williams, 2004).
- This can be achieved through shifting responsibility from the teacher to the student for discovering, organizing, analyzing and synthesizing content (Brush & Saye, 2000; Downes, 2005).

Collaborative Learning

- It is notoriously difficult to define collaborative learning (as opposed to say co-operative learning).
- “The broadest (but unsatisfactory) definition of 'collaborative learning' is that it is a *situation in which two or more people learn or attempt to learn something together*” (Dillenbourgh, 1999).
- Reciprocity is perhaps the key.

Could We Have Done Better?

- We would not change anything about the design or delivery of ClinED 711 at this point. Discuss!
- However, if we had articulated the principles for authentic learning then our design research would have examined the instantiation of these principles and yielded different research results.
- Research may, therefore, have benefited from articulating and instantiating this theory.

Design / Development Research

- Researchers with development goals are focused on the dual objectives of developing creative approaches to solving human teaching, learning, and performance problems while at the same time constructing a body of design principles that can guide future development efforts (Reeves, 2000)

Design / Development Research

- We can specify a set of principles for creating an authentic learning environment.
- However, the principles per se are “unassailable and untestable”.
 - We haven’t shown a specific relation or clear correlation between the instantiation of the principles and student learning / learning outcomes.
- An embodied conjecture is a conjecture about how theoretical propositions might be reified within designed environments to support learning.

Design / Development Research

- Sandoval (2004):
 - We need to articulate these principles at a greater level of specificity so that we can make more exact judgments about their worth;
 - Judgments about the worth of a design principle can be made through examining intermediate outcomes (certain behaviors such as posting to discussion forums) and intervention outcomes (achieving learning outcomes / implementing learning in practice).

Design / Development Research

- For example, our theoretical proposition might be that collaborative learning enhances student understanding
- This can be reified in terms of the principle that peer critique exercises will lead to enhanced understanding.
- Intermediate outcome (quality of peer critiques) and intervention outcome (final submission evidences multiple perspectives).

Design / Development Research

- For example, our theoretical proposition might be that an authentic learning environment will enable students to enhance their teaching practice.
- This can be reified in terms of the principle that an authentic activity will result in students acquiring the appropriate knowledge and skills to enhance their practice.
- Intermediate outcome (document completion to standard X) and intervention outcome (successfully puts learning into practice)

Design / Development Research

- What is the worth of design research?
- What do we actually find out?
- Are embodied conjectures just an attempt to be “scientific”.
- We’re interested in looking at these sorts of questions to progress our theoretical framework.

Challenges

- Development time
 - Significant for complex learning design and ongoing for revisions to course.
- Teaching time
 - 135 discussion forum postings for 2007;
 - 124 blog entries with 204 comments for 2008;
 - Marking multiple tasks against comprehensive rubrics.
- Student conflict
 - 1 instance of significant student conflict around an assessed collaborative task.

Challenges

- Lack of scalability
 - This course can be delivered in this format because student numbers are low. The course could not be delivered in current format to e.g. 30 / 40 / 100 students.
- Research intensive
 - Considerable amount of time needs to be spent analyzing data in order to determine if specific design conjectures ultimately benefited students.

Thanks for Listening

- Learning Technology Unit Website
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Select Bibliography

- Blake, A., & Doherty, I. (2008). An Instructional Design Course for Clinical Educators: First Iteration Design Research Reflections. *Journal of Learning Design, 2(2), 104-115.*
- Brush, T., & Saye, J. (2000). Implementation and evaluation of a student-centered learning unit: A case study. *Educational Technology Research and Development, 48(3), 79-100.*

Select Bibliography

- Dillenbourg, P. (1999). What do You Mean by Collaborative Learning ? In P. Dillenbourg (Ed.), *Collaborative-learning: Cognitive and Computational Approaches* (Vol. 1, pp. 1-19). Oxford: Elsevier.

Select Bibliography

- Doherty, I., & Blake, A. (2009). Student-Centred Learning: A Case Study in Teaching Clinical Educators Instructional Design Skills. In J. O'Donoghue (Ed.), *Technology-Supported Environments for Personalised Learning* (pp. 212-234). Hershey, P.A.: IGI Global.
- Downes, S. (2005). Elearning 2.0. *eLearn Magazine*.

Select Bibliography

- Doherty, I., & Blake, A. (2007). *Teaching Instructional Design Principles to Clinical Educators: A Design Research Approach*. Paper presented at the World Conference on Educational Multimedia, Hypermedia and Telecommunications 2007, Vancouver, Canada.
- Guskey, T. R. (2000). *Evaluating Professional Development*. Thousand Oaks, California: Corwin Press Inc.

Select Bibliography

- Hannafin, M. J., & Land, S. M. (1997). The foundations and assumptions of technology-enhanced student-centered learning environments. *Instructional Science*, 25, 167-202.

Select Bibliography

- Herrington, J., & Oliver, R. (2000). An instructional design framework for authentic learning environments. *Educational Technology Research and Development, 48(3), 23-48.*
- Reeves, T. C., Herrington, J., & Oliver, R. (2005). Design Research: A Socially Responsible Approach to Instructional Technology Research in Higher Education. *Journal of Computing in Higher Education, 16(2), 96-115.*

Select Bibliography

- Johnson, M. (2004). Personalised learning - an emperor's outfit? . Southampton: Institute for Public Policy Research.
- Ong, S. S., & Hawryszkiewycz, P. I. (2003). *Towards personalised and collaborative learning management systems. Paper presented at the 3rd IEEE International Conference on Advanced Learning Technologies (ICALT'03) Athens, Greece.*

Select Bibliography

- Reeves, T. C., Herrington, J., & Oliver, R. (2002). *Authentic activities and online learning. Paper presented at the HERDSA 2002.*

Select Bibliography

- Sandoval, W. A. (2004). Developing Learning Theory by Refining Conjectures Embodied in Educational Designs. *Educational Psychologist*, 39(4), 213-223.
- Sun, L., & Williams, S. (2004). *An instructional design model for constructivist learning. Paper presented at the World Conference on Educational Multimedia, Hypermedia and Telecommunications, Chesapeake, VA.*