



Faculty of Education and Social Work

The University of Sydney

EDPC5021 Introduction to the Learning Sciences

Unit of Study Outline

Session 1, 2012

Last revised: Mon, 25 Feb 2013 13:22:40 +1100

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Unit of Study Details

Credits: 6

Prerequisites: none

Preparation:

Teaching Staff Details

Unit of study coordinator: Dr. Lina Markauskaite

Room and building: 249 A35

Phone number: 90365320

Email: lina.markauskaite@sydney.edu.au

Arrangements for student consultation:

Appointments with Prof. Reimann can be arranged by e-mail only (peter.reimann@sydney.edu.au).

What is the unit about

Rationale

Technology affects how we learn, and what we consider worth learning, in many subtle and not so subtle ways. With the realisation that cognition is both situated and distributed, computer and communication media can no longer be considered mere conduits for information transport, but key players in learning, communication, and knowledge building. This course seeks to identify and compare important conceptual frameworks that shed light on the relationship between technology and learning, building on work in the learning sciences (psychology, education, cognitive and neurosciences). Modern educational technology use will be analysed from a number of perspectives, including classical information theory, psychological media and communication theories, activity theory, socio/cultural learning theory and models of distributed cognition.

Desired outcomes

As a result of successfully completing this unit of study students should be able to:

1. Demonstrate a basic understanding of the main contemporary learning theories
2. Apply a subset of these theories based on a more in-depth understanding
3. Describe the current state of the art in educational technology
4. Use a number of educational technologies for group learning
5. Apply concepts from the learning and communication sciences to assess the potentials and problems of technological developments
6. Apply conceptual knowledge to a number of authentic group projects

Topics

- Core theories of technology-enhanced learning
- Core psychology concepts in multimedia learning
- Cognitive learning theories: Representations and symbolic processing
- Instructional systems and design methods aligned with cognitive learning theories

- Situated learning
- Learning in a community
- Learning environments and design approaches aligned with situative view of learning
- Motivation and identity
- Overview of research approaches in the Learning Sciences
- Experiments in learning with technology
- Qualitative Research: Interaction and conversation through technology
- Design-based research
- Modelling cognition and learning

Timetable and Teaching Mode

The Faculty of Education and Social Work requires attendance of at least 90 per cent of all seminars, workshops or lectures. Where a student is unable to attend at the required rate evidence of illness or misadventure may be required and the student may be required to undertake extra work. Students should discuss the circumstances of their absence(s) with the co-ordinator of the unit of study.

The course will be conducted in blended/flexible mode. Most elements of the course will be accessible from outside the campus via Internet (eg. readings, assignments, group activities) and these will be delivered through Google Docs and the Adobe Acrobat Connect Pro system. There will be a 2 hour seminar session per week over 13 weeks. All but first session can be attended via Internet, i.e. does not require physical presence.

Schedule

Week	Content	Readings
Week 1 (week beginning Monday 5th March 2012). The first meeting will be exceptionally on Tuesday, 6 Feb, 5-8 pm. All other meetings are Mondays 5-7 pm.	Introduction to the learning sciences, overview of course content, approach and learning environments. Please note that this will be a face-to-face meeting on Tuesday 6th March 2012, from 5 to 8 pm, in Room 229 (computer lab), Education Building A35.	Alexander, P. A., Schallert, D. L., & Reynolds, R. E. (2009). What is learning anyway? A topographical perspective considered. <i>Educational Psychologist</i> , 44(3), 176-192.
Weeks 2 to 13	Key topics of the learning sciences and group projects.	See attached unit overview

Week	Content	Readings
	In addition to meeting at uni, all sessions are also available for online participation, conducted weekly on Mondays from 5 to 7pm. The online learning environment will be introduced in the first meeting.	
Week 15	Group assignment submission.	See attached unit overview

Assessment

Assessment policies

All assessment in this Unit of Study occurs in conformity with the policies of the Faculty of Education and Social Work. This is outlined in the Handbooks and web-site of the Faculty of Education and Social Work. Please refer to this on such matters as:

- Marking and grading
- Questioning a mark
- Submitting an assignment
- Exams
- Seeking an extension
- Penalties for late submission of work
- Plagiarism and academic honesty
- Seeking special consideration
- Seeking leave of absence
- Student appeals process

All students enrolled in this Unit of Study are expected, without exception, to make themselves familiar with these policies. They are available at the following web-site:

http://sydney.edu.au/education_social_work/current_students/assistance_forms/policies.shtml

All assignments must be submitted with the Faculty cover-sheet attached and filled out. This is available either from the Office of the Faculty (Level 3, Education Building) or from the Faculty of Education and Social Work web-site.

The University of Sydney has adopted severe but fair procedures for dealing with plagiarism. It is imperative that students understand what constitutes plagiarism. The threat of being accused of plagiarism is generally relieved by expert referencing of your assignments. If you are not sure how to reference well, please refer to the publications of the Faculty mentioned above, and in particular the following web-site:

<http://sydney.edu.au/policies/showdoc.aspx?recnum=PDOC2012/254&RendNum=0>

Assessment tasks in this unit of study

Task	Weight	Word count	Due date	Outcomes	National Teaching Standards
Individual text contributions based on readings	50%	500-600 words every two weeks	Weekly from Week 2 to end of term	Outcomes 1-6	
Learning Journal	25%		Weekly from Week 2 to end of term	Outcomes 1 to 6	
Group topic essays	25%		Weekly from Week 2 to end of term	Outcomes 1 to 6	

1. Individual text contributions based on readings

Due date for completion: Weekly from Week 2 to end of term

Submission instructions:

The assignment will be submitted online. The link will be provided in class.

Detail:

See attached unit overview.

Assessment criteria:

See attached unit overview.

Additional notes:

See attached unit overview

2. Learning Journal

Due date for completion: Weekly from Week 2 to end of term

Submission instructions:

The assignment will be submitted online. The link will be provided in class.

Detail:

See attached unit overview

Assessment criteria:

See attached unit overview

3. Group topic essays

Due date for completion: Weekly from Week 2 to end of term

Submission instructions:

The assignment will be submitted online. The link will be provided in class.

Detail:

See attached unit overview

Assessment criteria:

See attached unit overview

Grading criteria

	HD	Dist	Cr	Pass	FAIL
Organisation & conceptualization of assessment task	Consistently strong and ongoing demonstration and evidence of superior organisational and conceptual skills. The work is extremely well conceived, coherent, logical, original and lucid as well as professionally prepared	Consistently strong and ongoing demonstration of very good organisational and conceptual skills. The work is well conceived, coherent, logical and lucid as well as professionally prepared	Strong organizational & conceptual skills and evidence that the task is logical and coherent and professionally prepared	Demonstrates task organization and conceptual understanding in a style which is mostly logical, coherent and flowing	Attempts are made to demonstrate a logical & coherent understanding of the assessment task but some aspects may be confused or undeveloped
Subject/discipline content & knowledge	Impressive and original depth of understanding of the content and discipline is displayed. Information is gathered from a wide range of current & relevant sources beyond the core materials	Thorough and comprehensive understanding of the content and/or discipline gathered from a wide range of current & relevant sources beyond the core materials	Considers topics and issues in the broader disciplinary context. Evidence of having read current and relevant sources beyond the core materials	Clear understanding of topic. Demonstrates understanding of materials presented in core texts and readings	Limited understanding of topic with serious gaps or errors. Demonstrates little evidence of having read materials presented in core texts & readings
Clarity of expression (including accuracy, spelling, grammar, punctuation, use of language, expression of ideas)	Superior clarity in presentation and expression with attention to detail in all aspects evident	Fluent and succinct communication style appropriate to the assessment task. Grammar, spelling, use of language and punctuation is appropriate and accurate. Reflects Faculty's style guide (refer 'little blue book')	Communication is mainly clear, fluent and appropriate to document. Grammar, spelling, use of language and punctuation is accurate. Reflects Faculty's style guide (refer 'little blue book')	Communication is appropriate to the assessment task and is mostly fluent and clear. Grammar, spelling, use of language and punctuation mostly accurate. Reflects Faculty's style guide (refer 'little blue book')	Meaning apparent but not always fluently or clearly communicated. Grammar, spelling, language and/or punctuation may display minor errors. Some evidence of applying faculty's style guide
Critical analysis and articulation of argument	Convincing synthesis of evidence, critical analysis and understanding of multiple perspectives to formulate a coherent argument.	Considered use of evidence and consistently demonstrates application of critical analysis. Justifies relevant conclusions and their implications	Credible argument making relevant use of evidence, analysis and understanding. Able to apply concepts and draw and justify conclusions	Demonstrates some evidence of analytical and evaluative skills. Able to apply fundamental concepts and draw and justify conclusions	Little or no evidence of analytical and evaluative skills. Fails to draw on fundamental concepts and to justify conclusions
Problem solving	Solves or argues possible solutions to complex problems & addresses challenging tasks/situations. Uses innovative methods and higher order cognitive skills to solve complex problems and	Solves or argues possible solutions to complex problems and addresses challenging tasks/situations using imagination/creative and from a variety of perspectives	Solves complex problems and addresses challenging tasks/situations using creative techniques and skills	Solves problems using imagination and a limited range of creative techniques	Very little evidence of basic skills for problem solving and addressing key assessment tasks

	HD	Dist	Cr	Pass	FAIL
	present original alternatives				
Critical appraisal of the literature	Scholarly critique of a diverse array of literature. Generates, develops, uses and justifies own ideas or original concepts based on a wide range of relevant sources.	Scholarly critique of the literature using a variety of relevant sources to develop own ideas.	Substantial critical appraisal of the relevant literature to develop own ideas.	Evidence of critical appraisal of literature, with a recognition of different perspectives	Literature is presented uncritically and in a purely descriptive way.
Referencing	Uses recommended referencing style consistently and accurately in text of work and reference list. Effective use of relevant quotations and scholarly referencing at all times	Uses recommended referencing style consistently and accurately in text of work and reference list. Effective use of relevant quotations and scholarly referencing at all times	Uses recommended referencing style consistently and accurately in text of work and reference list. Effective use of relevant quotations	Uses recommended referencing style with minimal errors. Effective use of relevant quotations	Many errors or no use of conventions in referencing. Fails to meet University's academic honesty policy.
Synthesis of theory, research and practice	Critical assessment and analysis of the relationship between theory, research and practice. Possible insightful and/or original deployments of theory or theoretical concepts. Implications for personal and professional practice are carefully considered and explored. Work potentially worth dissemination and/or postgraduate study	Insightful critique or consideration of relationship between theory, research and practice. Personal / professional implications for practice considered	Critical or evaluative discussion/thinking about links between theory, research and practice	Beginning to develop critical reflection and analysis of practice through theory and research. Relevant concepts etc applied in a generally appropriate and thoughtful way	Very little or no consideration of the relationships between theory, research and practice.
Methodology & Design	Clearly justifies the selection of appropriate methodology based upon a deep understanding of research processes. Displays highly critical & reflective understanding of research design informed by theory	Selects the most appropriate methodology. Displays critical understanding of research design & analysis of methods.	Selects an appropriate methodology. Displays some critical understanding of research design & analysis of methods	Attention is given to the selection of a methodology & the method chosen is appropriate to the task but limited critique of research design.	Issue of research design & methodology not addressed and/or inappropriate methodology used and/or little planning used to complete the task
Data/information gathering/processing/data analysis/evaluating	Selects & processes data appropriately with confidence & imagination. Accurate, reliable systematic collection and processing of data. Appropriate application of suitable methods of analysis	Selects & processes data appropriately with confidence & imagination. Accurate, reliable systematic collection and processing of data. Appropriate application of theory in the analysis.	Selects appropriate data & processes using relevant tools Some application of theory to analysis	Makes a reasonable selection from data & applies processing tools	Random information gathering. Inappropriate use of processing tools
Interactive & group skills (include teamwork, negotiation & empathy)	Interacts effectively and respectfully within a learning or professional group. Makes a positive and active contribution to group processes and products at all times. Recognises, supports and/or is proactive in leadership activities. Negotiates and handles conflict appropriately.	Interacts effectively within a learning or professional group. Recognises or supports or is proactive in leadership. Negotiates and handles conflict appropriately.	Interacts effectively within a learning group, giving and receiving information and ideas and modifying responses where appropriate.	Interacts effectively within a learning group, Offers and/or supports initiatives. Recognises and assesses alternative options	Has problems working with others/ avoids work with others. Does not contribute or contributes inappropriately in groups.

Student evaluation

We welcome feedback on this Unit of Study. Please take the time to offer constructive written feedback at the end of the semester. The teaching team is committed to the participation of learners in the process of planning and evaluation of courses. The following changes have already been made to this Unit of Study as a result of student feedback:

This unit aims to provide students with authentic learning experiences relevant to their professional interests. Some readings and specific focus of the assessments are negotiated with students. Their suggestions and feedback during the course are particularly appreciated.

References and readings

Textbook

- Sawyer, R. K. (Ed.). (2006). *The Cambridge Handbook of the Learning Sciences*. New York: Cambridge University Press.

Readings and references

- See attached unit overview for weekly readings

There are reference attachments listed in the printable documents section below.