UNSW Course Outline

EDST5303 Learning, Problem Solving, and the Development of Expertise - 2024

Published on the 28 Jan 2024

General Course Information

Course Code : EDST5303
Year : 2024
Term : Term 1
Teaching Period : T1
Is a multi-term course? : No
Faculty : Faculty of Arts, Design and Architecture
Academic Unit : School of Education
Delivery Mode : Multimodal
Delivery Format : Non Standard
Delivery Location : Kensington
Campus : Sydney
Study Level : Postgraduate
Units of Credit : 6

Useful Links

Handbook Class Timetable

Course Details & Outcomes

Course Description

The major focus of this course is to examine how human cognitive structures are organised into

a coherent architecture enabling you to learn, think, reason and solve problems. The central role played by active learning in this architecture is emphasised. The course examines how expertise develops and how teaching strategies should be matched to individual needs to promote knowledge acquisition. In this course you will be introduced to cognitive load theory and learn about a number of applications of this theory to the classroom and other educational environments.

Course Learning Outcomes

Course Learning Outcomes
CLO1 : Identify and explain the structure and operation of human memory.
CLO2 : Discuss how knowledge is constructed.
CLO3 : Describe and explain how expertise develops and distinguish the differences between experts and novices.
CLO4 : Explain the evolutionary basis for knowledge.
CLO5 : Discuss the implications of human cognitive architecture for teaching and instructional design.

Course Learning Outcomes	Assessment Item
CLO1 : Identify and explain the structure and operation of human memory.	• Class test
CLO2 : Discuss how knowledge is constructed.	• Class presentation • Major essay • Class test
CLO3 : Describe and explain how expertise develops and distinguish the differences between experts and novices.	• Class presentation • Major essay
CLO4 : Explain the evolutionary basis for knowledge.	• Major essay
CLO5 : Discuss the implications of human cognitive architecture for teaching and instructional design.	• Class presentation • Major essay

Learning and Teaching Technologies

Moodle - Learning Management System

Learning and Teaching in this course

Rationale:

EDST5303 places a large emphasis on the role played by memory processes in effective learning

and instruction. The teaching in this course is based on an active learning philosophy. Student-centered activities will form the basis of the course, which will draw on the prior knowledge of the students and allow engagement in relevant and challenging experiences. The seminars are designed to be supportive and friendly, and include meaningful realistic learning tasks, as well as promote independent and collaborative study, and inquiry.

Teaching strategies:

- Small group learning to understand the importance of teamwork in an educational context and to demonstrate the use of group structures as appropriate to address teaching and learning goals;
- Explicit teaching including lectures and a range of learning strategies to foster interest and support learning;
- Structured occasions for reflection on learning to allow students to reflect critically on issues discussed;
- Extensive opportunities for whole group and small group dialogue and discussion, allowing students the opportunity to demonstrate their capacity to communicate.

These activities will occur in a climate that is supportive and inclusive of all learners.

Other Professional Outcomes

AUSTRALIAN PROFESSIONAL STANDARDS FOR TEACHERS

Standard		Assessment/s
1.1.2	Use teaching strategies based on knowledge of students' physical, social, and intellectual development and characteristics to improve student learning.	1, 3
1.2.3	Expand understanding of how students learn using research and workplace knowledge.	1, 2
1.5.2	Develop teaching activities that incorporate differentiated strategies to meet the specific learning needs of students across the full range of abilities.	1, 3

Assessments

Assessment Structure

Assessment Item	Weight	Relevant Dates
Class presentation	30%	Due Date: See Moodle
Class test	20%	Due Date: See Moodle
Major essay	50%	Due Date: See Moodle

Assessment Details

Class presentation

Assessment Overview

A presentation to the class on a course related topic.

Time: 10 minutes

Students will receive feedback with 10 business days of submission.

Course Learning Outcomes

- CLO2 : Discuss how knowledge is constructed.
- CLO3 : Describe and explain how expertise develops and distinguish the differences between experts and novices.
- CLO5 : Discuss the implications of human cognitive architecture for teaching and instructional design.

Detailed Assessment Description

- Students are to record a 3 minute/1 powerpoint slide presentation on an application of a specific Cognitive Load Theory effect to a teaching area of their choosing.
- The presentation should be uploaded to Moodle for other students to view.

Assessment information

RUBRIC/FEEDBACK SHEET

EDST5303 UNSW SCHOOL OF EDUCATION

Assessment Task 1: Class Presentation

Specific Criteria	Fail -------- > High Distinction
Understanding of the question or issue and the key concepts involved • Understanding of the topic and its relationship to relevant areas of the course	
Depth of analysis and critique in response to the task • Variety and relevance of specific examples used • Comprehensive analysis of the application of specific methods and techniques discussed in this course	
Familiarity with and relevance of professional and/or research literature used to support response • Selection of a range of contemporary and eminent sources	
Structure and organisation of response • Follows a clear and logical sequence	
Presentation of response according to appropriate academic and linguistic conventions • Quality of presentation: use of media, interaction with audience	
General comments/recommendations for next time:	
Lecturer: Recommended: /20 (FL PS CR DN HD)	Date: Weighting: 30%
NB: The ticks in the various boxes are designed to provide feedback to students; they are not given equal weight in determining the recommended grade. Depending on the nature of the assessment task, lecturers may also contextualise and/or amend these specific criteria. The recommended grade is tentative only, subject to standardisation processes and approval by the School of Education Learning and Teaching Committee.	

Assignment submission Turnitin type

Not Applicable

Hurdle rules

A hurdle requirement or hurdle rule is a course requirement that must be fulfilled in order to pass the course. In all courses within the School of Education, all assessments (regardless of their weighting) are hurdle requirements. That is, all assessments in a course must receive a pass mark in order to pass the course. Where a student has failed to meet the requirements of an

assessment, they may still be deemed to have met the hurdle requirement if the failure was due to a late penalty and if the overall mark for the course is still greater than 50.

Class test

Assessment Overview

A 20 item multiple choice test on human cognitive architecture.

Time: 20 minutes

Students will receive feedback with 10 business days of submission.

Course Learning Outcomes

- CLO1 : Identify and explain the structure and operation of human memory.
- CLO2 : Discuss how knowledge is constructed.

Detailed Assessment Description

See Moodle for details.

Assessment Length

20 minutes

Assessment information

See Moodle for details.

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Major essay

Assessment Overview

Write an essay based on the material covered in the course focusing on its application to specific individual teaching areas. Length: 2500 words Students will receive feedback with 10 business days of submission.

Course Learning Outcomes

- CLO2 : Discuss how knowledge is constructed.
- CLO3 : Describe and explain how expertise develops and distinguish the differences between experts and novices.
- CLO4 : Explain the evolutionary basis for knowledge.
- CLO5 : Discuss the implications of human cognitive architecture for teaching and instructional design.

Detailed Assessment Description

- This essay should consist of an in-depth discussion of the theoretical and applied issues associated with a selected topic.
- Possible essay topics will be discussed further in class.

Assessment Length

2,500 words

Assessment information

RUBRIC/FEEDBACK SHEET

EDST5303 UNSW SCHOOL OF EDUCATION

Assessment Task 3: Major Essay

Specific Criteria	Fail -------- > High Distinction
Understanding of the question or issue and the key concepts involved • Understanding of the topic and its relationship to relevant areas of the course • Clarity and accuracy in use of key terms and concepts • Suitability of the topic	
Depth of analysis and critique in response to the task • Depth of analysis • Depth of critique of the issue • Depth of implications/recommendations for improvement of learning and instruction	
Familiarity with and relevance of professional and/or research literature used to support response • Effectiveness of examples to demonstrate instructional implications • Variety of implications demonstrated • Range of relevant research literature to support response	
Structure and organisation of response • Level of structure and organisation of response	
Presentation of response according to appropriate academic and linguistic conventions • Clarity, consistency and appropriateness of conventions for quoting, paraphrasing, attributing sources of information, and listing references • Appropriateness of overall structure and coherence of response • Clarity and consistency in presenting tables and figures • Clarity and appropriateness of sentence structure, vocabulary use, spelling, punctuation, and word length	
General comments/recommendations for next time:	
Lecturer: Recommended: /20 (FL PS CR DN HD)	Date: Weighting: 50%
NB: The ticks in the various boxes are designed to provide feedback to students; they are not given equal weight in determining the recommended grade. Depending on the nature of the assessment task, lecturers may also contextualise and/or amend these specific criteria. The recommended grade is tentative only, subject to standardisation processes and approval by the School of Education Learning and Teaching Committee.	

Assignment submission Turnitin type

This assignment is submitted through Turnitin and students can see Turnitin similarity reports.

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General Assessment Information

Students are required to follow their course convenor's instructions when submitting their work for assessment. All assessment task/s are to be submitted online via Moodle by 5pm. Students are also required to retain all drafts, original data, and other evidence of the authenticity of the work for at least one year after submission/examination. For more detailed information about submission, late penalties, special consideration, and the like, visit the School of Education website on policies and procedures: SED Policies and Procedures (unsw.edu.au).

Grading Basis

Standard

Course Schedule

Teaching Week/Module	Activity Type	Content
Module 1	Topic	• Introduction to the course
Module 2	Topic	• Human Cognitive Architecture - Working memory Long-term memory The role of schema construction and automation in the development of expertise Evolutionary and information processing principles guiding learning and teaching
Module 3	Topic	• Problem solving and the role of prior knowledge and expertise
Module 4	Topic	• Cognitive Load Theory
Module 5	Topic	• Instructional strategies - Instructional approaches to managing learner cognitive load Cognitive load implications of problem solving Alternatives to problem solving Tailoring learning tasks to learner cognitive characteristics
Module 6	Topic	• Technology and cognitive load theory (cognitive theory of multimedia learning)
Module 7	Topic	• Summary

Attendance Requirements

The School of Education has a minimum attendance requirement of 80% for classes, including lectures, tutorials, seminars, and other learning activities – irrespective of delivery mode. The

attendance requirement is a minimum threshold for engagement and ensures that programs meet the requirements of external accreditation authorities (i.e., NESA), and for a range of programs (e.g., initial teacher education programs and other accredited postgraduate coursework specialisations). Students must register their attendance according to the course convenor's directions.

General Schedule Information

This course outline sets out the description of classes at the date the outline is published. The nature of classes may change during the term after the course outline is published. Moodle should be consulted for up-to-date class descriptions. If there is an inconsistency in the description of activities between the University timetable and the course outline (as updated in Moodle), the description in the course outline on Moodle applies.

Course Resources

Prescribed Resources

Required readings

There are no set textbooks for this course, although the following will be frequently referred to:

- Sweller, J., Ayres, P. & Kalyuga, S. (2011). *Cognitive load theory*. New York: Springer.
- Specific articles are recommended for different lectures.
- Copies of the articles are provided on Moodle.

Course Evaluation and Development

- Student feedback helps to shape future iterations of the course.

Staff Details

Position	Name	Email	Location	Phone	Availability	Equitable Learning Services Contact	Primary Contact
Convenor	Ellen Lee		Ground Floor Morven Brown Building		Email to arrange an appointment	No	Yes

Other Useful Information

Academic Information

Due to evolving advice by NSW Health, students must check for updated information regarding

online learning for all Arts, Design and Architecture courses this term (via Moodle or course information provided).

Please see: https://www.unsw.edu.au/arts-design-architecture/student-life/resources-support/protocols-guidelines for essential student information relating to:

- UNSW and Faculty policies and procedures;
- Student Support Services;
- Dean's List;
- review of results;
- credit transfer;
- cross-institutional study and exchange;
- examination information;
- enrolment information;
- Special Consideration in the event of illness or misadventure;
- student equity and disability;

And other essential academic information.

Academic Honesty and Plagarism

Plagiarism is using the words or ideas of others and presenting them as your own. It can take many forms, from deliberate cheating to accidentally copying from a source without acknowledgement.

UNSW groups plagiarism into the following categories:

- Copying: Using the same or very similar words to the original text or idea without acknowledging the source or using quotation marks. This includes copying materials, ideas or concepts from a book, article, report or other written document, presentation, composition, artwork, design, drawing, circuitry, computer program or software, website, internet, other electronic resource, or another person's assignment without appropriate acknowledgement.
- Inappropriate paraphrasing: Changing a few words and phrases while mostly retaining the original information, structure and/or progression of ideas of the original without acknowledgement. This also applies in presentations where someone paraphrases another's ideas or words without credit and to piecing together quotes and paraphrases into a new whole, without appropriate referencing.
- Collusion: Working with others but passing off the work as a person's individual work. Collusion also includes providing your work to another student for the purpose of them plagiarising, paying another person to perform an academic task, stealing or acquiring another person's academic work and copying it, offering to complete another person's work or seeking payment for completing academic work.
- Inappropriate citation: Citing sources which have not been read, without acknowledging the

"secondary" source from which knowledge of them has been obtained.
- Duplication ("self-plagiarism"): Submitting your own work, in whole or in part, where it has previously been prepared or submitted for another assessment or course at UNSW or another university.

The UNSW Academic Skills support offers resources and individual consultations. Students are also reminded that careful time management is an important part of study. One of the identified causes of plagiarism is poor time management. Students should allow sufficient time for research, drafting and proper referencing of sources in preparing all assessment items. UNSW Library has the ELISE tool available to assist you with your study at UNSW. ELISE is designed to introduce new students to studying at UNSW, but it can also be a great refresher during your study.

Completing the ELISE tutorial and quiz will enable you to:

- analyse topics, plan responses and organise research for academic writing and other assessment tasks
- effectively and efficiently find appropriate information sources and evaluate relevance to your needs
- use and manage information effectively to accomplish a specific purpose
- better manage your time
- understand your rights and responsibilities as a student at UNSW
- be aware of plagiarism, copyright, UNSW Student Code of Conduct and Acceptable Use of UNSW ICT Resources Policy
- be aware of the standards of behaviour expected of everyone in the UNSW community
- locate services and information about UNSW and UNSW Library

Use of AI for assessments

As AI applications continue to develop, and technology rapidly progresses around us, we remain committed to our values around academic integrity at UNSW. Where the use of AI tools, such as ChatGPT, has been permitted by your course convener, they must be properly credited and your submissions must be substantially your own work.

In cases where the use of AI has been prohibited, please respect this and be aware that where unauthorised use is detected, penalties will apply.

Use of AI for assessments | UNSW Current Students

Submission of Assessment Tasks

Turnitin Submission

If you encounter a problem when attempting to submit your assignment through Turnitin, please telephone External Support on 9385 3331 or email them on externalteltsupport@unsw.edu.au

Support hours are 8:00am – 10:00pm on weekdays and 9:00am – 5:00pm on weekends (365 days a year). If you are unable to submit your assignment due to a fault with Turnitin, you may apply for an extension, but you must retain your ticket number from External Support (along with any other relevant documents) to include as evidence to support your extension application. If you email External Support, you will automatically receive a ticket number, but if you telephone, you will need to specifically ask for one. Turnitin also provides updates on their system status on Twitter.

Generally, assessment tasks must be submitted electronically via either Turnitin or a Moodle assignment. In instances where this is not possible, alternative submission details will be stated on your course's Moodle site. For information on how to submit assignments online via Moodle: https://student.unsw.edu.au/how-submit-assignment-moodle

Late Submission Penalty

UNSW has a standard late submission penalty of:

- 5% per calendar day,
- for all assessments where a penalty applies,
- capped at five calendar days (120 hours) from the assessment deadline, after which a student cannot submit an assessment, and
- no permitted variation.

Students are expected to manage their time to meet deadlines and to request Special Consideration as early as possible before the deadline. Support with Time Management is available here.

School-specific Information

Policies and Procedures

For more detailed information about School of Education policies and procedures visit the following website: SED Policies and Procedures (unsw.edu.au).

School Contact Information

School of Education. Arts, Design and Architecture. Ground Floor, Morven Brown Building (Map

Reference F20).

- T: +61 2 93851977
- E: education@unsw.edu.au
- W: https://www.arts.unsw.edu.au/education