澳門理工大學
Universidade Politécnica de Macau
Macao Polytechnic University

FACULTY OF APPLIED SCIENCES

DOCTOR OF PHILOSOPHY IN EDUCATIONAL TECHNOLOGY AND INNOVATION

LEARNING MODULE OUTLINE

Academic Year	2025/2026	Semester	1
Module Code	PETI8122		
Learning Module	Learning Theories and Technology Integration		
Pre-requisite(s)	Nil		
Medium of Instruction	English		
Credits	3	Contact Hours	45
Instructor	Wei Wei	Email	weiwei@mpu.edu.mo
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MODULE DESCRIPTION

The module aims to provide an updated view on a wide range of topics in relation to learning and instruction practice with a special reference to technology-enhanced learning, distance and online learning, mobile and game-based learning, and learning analytics. Moreover, it builds a foundation for researchers in these fields by clearly explaining the learning and instruction theories behind these technic innovations and its implications to the design of curriculum and learning activities, selection and editing of multimedia learning resources, design and implementation of assessment practice.

MODULE INTENDED LEARNING OUTCOMES (ILOS)

On completion of this learning module, students will be able to:

M1.	Develop knowledge of common learning theories and their implications to the design and use of emerging technologies in classroom condition (AHEP4-M4)
M2.	Develop knowledge of online educational and open learning technologies (AHEP4-M4)
M3.	Develop a critical understanding of the limits of emerging technologies in education and its implications to the design and use of them in both online and offline context (AHEP4-M4)
M4.	Understand the implementations of emerging technologies in the educational systems, including the facilitating and prohibiting conditions, perceptions of multiple stakeholders at all levels, and possible solutions to the challenges and problems (AHEP4-M5, AHEP4-M17)

These ILOs aims to enable students to attain the following Programme Intended Learning Outcomes (PILOs):

PILOs		**M 1**	**M 2**	**M 3**	**M 4**
P1.	Understand methodologies in conducting research in the field of EdTech		✓	✓	
P2.	Understand knowledge and in-depth understanding of a wide range of learning technologies				✓

P3.	Acquire essential knowledge and hands-on experience of analysis, assessment and solutions of EdTech related issues				
P4.	Acquire essential knowledge and application of EdTech-related methodologies in both online and offline learning environments			✓	✓
P5.	Initiate original research in EdTech related fields, both individually and collaboratively in a team				
P6.	Plan, design, execute and manage a scholarly research project				
P7.	Critically evaluate an advanced issue in EdTech related fields				
P8.	Communicate research findings, both orally to diverse audiences and in writing through publishing research papers of scholarly values				
P9.	Gather and disseminate knowledge at the postgraduate level and beyond		✓	✓	✓
P10.	Demonstrate advanced knowledge, competence and research capability in learning technologies and innovation				
P11.	Illustrate a global vision on knowledge advancement and dissemination	✓		✓	
P12.	To demonstrate professional integrity and the spirit of challenge				
P13.	To advocate professionalism in workplaces and the society at-large				✓
P14.	To communicate professionally and effectively both in speaking and in writing			✓	✓

MODULE SCHEDULE, COVERAGE AND STUDY LOAD

Week	Content Coverage	Content Hours
1-2	1. Introduction	6
	1.1. Educational research	
	1.2. Measurement of learning gains	
3-4	2. Community of Inquiry	6
5-6	3. Learning theories in open learning	6
	3.1. Learning autonomy,	
	3.2. Collaborative learning	
	3.3. Self-determination theory	
7-8	Cognitive Theory in Multimedia Learning	6
9-10	Engagement with online learning opportunities and resources	6
11-12	Challenges and obstacles in the adaptation of technology in classroom teaching	6
13	Summative assessment: construct validity, reliability	3

14-15	Learning oriented assessment practice	6

TEACHING AND LEARNING ACTIVITIES

In this learning module, students will work towards attaining the ILOs through the following teaching and learning activities:

Teaching and Learning Activities	M1	M2	M3	M4
T1. Lectures and tutorials	✓	✓	✓	✓
T2. Case studies		✓	✓	✓
T3. Group discussion		✓	✓	

ATTENDANCE

Attendance requirements are governed by the Academic Regulations Governing Doctoral Degree Programmes of the Macao Polytechnic University. Students who do not meet the attendance requirements for the learning module shall be awarded an 'F' grade.

ASSESSMENT

In this learning module, students are required to complete the following assessment activities:

Assessment Activities	Weighting (%)	AHEP4 LOs	ILOs to be Assessed
A1. Short essay	20	AHEP4-M17	M1, M2, M3
A2. Presentation	30	AHEP4-M17	M2, M3, M4,
A3. Assignment	50	AHEP4-M4 AHEP4-M5	M1, M2, M3, M4,

The assessment will be conducted following the University's Assessment Strategy (see www.mpu.edu.mo/teaching_learning/en/assessment_strategy.php). Passing this learning module indicates that students will have attained the ILOs of this learning module and thus acquired its credits.

REQUIRED READINGS

Lecture notes and slides.

REFERENCES

Reference book(s)

N.A.

Website(s)

1. Computers & Education https://www.sciencedirect.com/journal/computers-and-education
2. Internet and Higher Education https://www.sciencedirect.com/journal/the-internet-and-higher-education

3. International Journal of Educational Technology in Higher Education https://educationaltechnologyjournal.springeropen.com/
4. Distance Education https://www.tandfonline.com/toc/cdie20/current
5. Computer Assisted Language Learning https://www.tandfonline.com/toc/ncal20/current
6. Learning Media and Technology https://www.tandfonline.com/journals/cjem20
7. International Journal of STEM Education https://stemeducationjournal.springeropen.com/
8. Journal of Computing in Higher Education https://www.springer.com/journal/12528
9. Education and Information Technologies https://www.springer.com/journal/10639
10. Interactive Learning Environments https://www.tandfonline.com/toc/nile20/current
11. Journal of Research on Technology Education https://www.tandfonline.com/toc/ujrt20/current
12. Active Learning in Higher Education https://journals.sagepub.com/home/alh
13. ETR&D-Educational Technology Research and Development https://www.springer.com/journal/11423
14. Technology Pedagogy and Education https://www.tandfonline.com/toc/rtpe20/current
15. Journal of Educational Computing Research https://journals.sagepub.com/home/jec
16. ReCaLL https://www.cambridge.org/core/journals/recall
17. Journal of Science Education and Technology https://www.springer.com/journal/10956
18. International Journal of Computer-supported Collaborative Learning https://www.springer.com/journal/11412
19. Australasian Journal of Educational Technology https://ajet.org.au/index.php/AJET
20. Educational Technology & Society https://www.j-ets.net/

STUDENT FEEDBACK

At the end of every semester, students are invited to provide feedback on the learning module and the teaching arrangement through questionnaires. Your feedback is valuable for instructors to enhance the module and its delivery for future students. The instructor and programme coordinators will consider all feedback and respond with actions formally in the annual programme review.

ACADEMIC INTEGRITY

The Macao Polytechnic University requires students to have full commitment to academic integrity when engaging in research and academic activities. Violations of academic integrity, which include but are not limited to plagiarism, collusion, fabrication or falsification, repeated use of assignments and cheating in examinations, are considered as serious academic offenses and may lead to disciplinary actions. Students should read the relevant regulations and guidelines in the Student Handbook which is distributed upon the admission into the University, a copy of which can also be found at www.mpu.edu.mo/student_handbook/.