

Kerala University of Digital Sciences, Innovation and Technology



Ph.D. – Research Training Program (RTP)
2024 Admission onwards

KERALA UNIVERSITY OF DIGITAL SCIENCES, INNOVATION AND TECHNOLOGY(KUDSIT)
Thiruvananthapuram, Kerala, India
Ph.D. - Research Training Program (RTP) - 2024

Course Code	Course Name	Level	Credits
P0552401	Research Methodology	500	3
P0552402	Research Publication and Ethics	500	2
P0552403	Design Thinking and Translational Research	500	3
P0552404	Pedagogy Design	500	2
	Technical Course - 1	400/500	3
	Technical Course - 2	400/500	3
<i>Total Credits (Minimum needs to be earned)</i>			16

RESEARCH METHODOLOGY

Course Code	Course Name	Level	Credit
P0552401	Research Methodology	500	3
<p>Course Description: This course offers a comprehensive introduction to research methodologies, guiding students through the entire research process from problem identification to report writing. It covers various research types, research design, data collection, and statistical analysis. Advanced topics such as mathematical modeling and optimization techniques are also explored to enhance problem-solving skills.</p>			
<p>Course Learning Outcomes (CLOs): By the end of this course, students will be able to:</p> <p>CL01: Identify and articulate research problems, formulate clear research hypotheses, and conduct comprehensive literature reviews.</p> <p>CL02: Develop robust research designs and select appropriate methodologies, data collection techniques, and sampling methods.</p> <p>CL03: Analyze qualitative and quantitative data using statistical tools, interpret results, and draw meaningful conclusions.</p> <p>CL04: Prepare and present well-structured research reports, adhering to academic standards for writing and presentation.</p> <p>CL05: Apply research methods and statistical techniques to solve practical problems in various fields, including management and engineering.</p> <p>CL06: Recognize and adhere to ethical principles in conducting research, including issues related to plagiarism and data integrity.</p>			
<p>Program Learning Outcomes (PLOs):</p> <p>PL01: Demonstrate the ability to formulate, design, and conduct independent research that contributes to the advancement of knowledge in their field.</p> <p>PL02: Apply critical thinking skills to evaluate complex problems, synthesize information, and develop innovative solutions.</p> <p>PL03: Utilize appropriate research methodologies and tools to effectively gather, analyze, and interpret data.</p> <p>PL04: Communicate research findings effectively through written and oral presentations to diverse audiences.</p> <p>PL05: Uphold ethical standards and demonstrate professionalism in all aspects of research and academic practice.</p> <p>PL06: Collaborate with interdisciplinary teams to address complex challenges and drive innovation in their field.</p> <p>PL07: Encourage innovation and entrepreneurial thinking, applying research outcomes to develop new technologies, products, or services that address societal needs.</p> <p>PL08: Understand the global context of science, engineering, technology, and management, including the social, economic, and environmental implications of research and practice.</p>			

Mapping of course learning outcomes with program learning outcomes:

	PL01	PL02	PL03	PL04	PL05	PL06	PL07	PL08
CLO1	3	2	3	1				2
CLO2	3	2	3					1
CLO3	2	3	3	1				1
CLO4			1	3		1		
CLO5		3	2	1	1	2	3	3
CLO6					3			2

(Correlation: 1-Slight (Low), 2-Moderate (Medium), 3-Substantial (High))

Syllabus

Module	Content
1	<p>Introduction: Meaning, objectives and motivations in research, Characteristics and limitations of research – Components of research work - Criteria of good research, Research process – Types of Research, Fundamental, Pure or Theoretical/Empirical Research –Applied Research – Descriptive Research – Simulation / Evaluation Research –Experimental Research – Survey Research – Qualitative Research – Quantitative Research – Historical Research.</p>
2	<p>Research Problem Formulation: Research problem: Selecting and analyzing the research problem – problem statement formulation. Literature review: Conducting Literature Review, purpose, sources, and importance - literature review procedure. Objectives: Learning Objectives; Definitions; Formulation of the research objectives. Information Sources (Books, monographs, reviews, blogs), Information Retrieval, Role of libraries in Information Retrieval, Tools for identifying literature (digital resources and print media), Indexing and abstracting services, Citation indexes, Summarising the Review, Critical Review, Identifying Research Gap, Conceptualising and Hypothesising the research gap. Cause effect relationship, Formulation/Development of Hypothesis.</p>
3	<p>Research Design: Research Design – definition – essentials and types of research design – errors and types of errors in research design. Variables in Research – Measurement and scaling – Different scales– Construction of instrument – Validity and Reliability of instrument. Data Collection methods– primary and secondary data – Construction of questionnaire and instrument – validation of instruments. Sample size determination - Sample design and sampling techniques.</p>
4	<p>Data Analysis and Interpretation: Processing of Data: Editing of Data – Coding of Data – Classification of Data – Statistical Series. Qualitative vs Quantitative data analyses – Sampling, Sampling Error, Univariate, Bivariate and Multivariate statistical techniques Measures of Central Tendency, Dispersion, correlation and Regression, Test of Hypothesis- z test, t test, F test, ANOVA, Chi square, correlation and regression analysis, Error Estimation. Applications, Steps, characteristics, limitations, Analysis of</p>

	Variance and Covariance, Factor analysis – Discriminant analysis – cluster analysis – multiple regression and correlation multidimensional scaling – Conjoint Analysis - Application of statistical software for data analysis.
5	<p>Technical / Research Report Writing: Types of technical writing, audience analysis, and persuasion. Definition writing and analysis of material. Description of mechanisms and processes. Introduction to scientific writing: Preconceptions, purpose, process, product. Anatomy of a manuscript. Project Proposal Preparation - Graphic aids in technical reports - Data Presentation-Types of tables and illustrations, References – Styles and methods. Effective document writing using Latex.</p> <p>Research report – Different types – Contents of report –executive summary – chapterization –contents of chapter – report writing – the role of audience – readability – comprehension – tone– final proof – report format – title of the report. Guidelines for writing the abstract, introduction, methodology, results and discussion, conclusion sections of a manuscript.</p>
6	<p>Mathematical Modelling*: Basic concepts of modeling of Engineering systems – Static and Dynamic model – Model for prediction and its limitations. System simulation -- validation.</p> <p>Use of Optimization techniques – Genetic Algorithm, Simulated Annealing, Particle Swarm Optimization.</p>
6	<p>Application of Research methods in Functional areas of management**: Application of statistics in functional areas of management: Marketing: Marketing research, Demand forecasting, Finance: Performance evaluation of mutual funds, Investment analysis – Discounted cash flow techniques and Internal Rate of Return, Project decisions, Stock price fluctuations – Operations: Supply chain management, Inventory control HR: Analysis of job satisfaction, Identification of factors affecting productivity, Economics: Trend in food production, analysis of exports and imports, Analysis of price fluctuations</p>
<p>* For Faculty of Science, Engineering and Technology ** For Faculty of Humanities</p>	
<p>References</p> <ol style="list-style-type: none"> 1. Cooper, D.R., Schindler, P.S. and Sun, J., (2006), Business research methods (Vol. 9). NewYork: McGraw-Hill Irwin. 2. Creswell, J.W. and Creswell, J.D., (2017), Research design: Qualitative, quantitative, and mixed methods approaches. Sage publications. 3. Kothari, C.R., (2004), Research methodology: Methods and techniques. New Age International. 4. Krishnaswamy, K.N., (2006), Management Research Methodology: Integration of Principles, Methods and Techniques. Pearson Education India. 5. Sekaran, U. and Bougie, R., (2016), Research methods for business: A skill building approach. John Wiley & Sons 6. Anderson B.H., Duration, and Poole M., (1997) Thesis and assignment writing, Wiley Eastern. 	

7. Bordens K.S. and Abbott, B.b, (2008), Research Design and Methods, Mc Graw Hill,
8. Graziano, A., M., and Raulin, M., L., (2007), Research Methods –A Process of Inquiry, Sixth Edition, Pearson.
9. Leedy., P., D., (2005), Practical Research – Planning and Design, Eighth Edition, Pearson.
10. Emma Bell, Bill Harley, and Alan Bryman, (2022) Business Research Methods, Oxford University Press,6th Edition.

RESEARCH PUBLICATION AND ETHICS

Course Code	Course Name	Level	Credit
P0552402	Research Publication and Ethics	500	2
<p>Course Description: This course has total of 6 modules focusing on basics of philosophy of science and ethics, research integrity, publication ethics. Hands-on-sessions are designed to identify research misconduct and predatory publications. Indexing and Citation databases, Open access publications, research metrics (Citations, H-index, Impact Factor, etc) and Plagiarism tools will be introduced in this course</p>			
<p>Course Learning Outcomes (CLOs):</p> <p>CLO1: To understand the philosophy of science and ethics, research integrity and publication ethics.</p> <p>CLO2: To identify research misconduct and predatory publications.</p> <p>CLO3: To understand indexing and citation databases, open access publications, research metrics (citations, h-index, impact Factor).</p> <p>CLO4: To understand the usage of plagiarism tools.</p> <p>CLO5: To Learn about the Publication Ethics and Publication Misconduct.</p>			
<p>Program Learning Outcomes (PLOs):</p> <p>PL01: Demonstrate the ability to formulate, design, and conduct independent research that contributes to the advancement of knowledge in their field.</p> <p>PL02: Apply critical thinking skills to evaluate complex problems, synthesize information, and develop innovative solutions.</p> <p>PL03: Utilize appropriate research methodologies and tools to effectively gather, analyze, and interpret data.</p> <p>PL04: Communicate research findings effectively through written and oral presentations to diverse audiences.</p> <p>PL05: Uphold ethical standards and demonstrate professionalism in all aspects of research and academic practice.</p> <p>PL06: Collaborate with interdisciplinary teams to address complex challenges and drive innovation in their field.</p> <p>PL07: Encourage innovation and entrepreneurial thinking, applying research outcomes to develop new technologies, products, or services that address societal needs.</p> <p>PL08: Understand the global context of science, engineering, technology, and management, including the social, economic, and environmental implications of research and practice.</p>			

Mapping of course learning outcomes with program learning outcomes:

	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8
CLO1	2				3			2
CLO2	1	2			3			
CLO3	3		3					1
CLO4	1		2		3			
CLO5					3			1

(Correlation: 1-Slight (Low), 2-Moderate (Medium), 3-Substantial (High))

Syllabus

Module	Content
1	Philosophy and Ethics: Introduction to philosophy: definition, nature and scope, concept, branches - Ethics: definition, moral philosophy, nature of moral judgements and reactions.
2	Scientific Conduct: Ethics with respect to science and research - Intellectual honesty and research integrity -Scientific misconducts: Falsification, Fabrication and Plagiarism (FFP) – Redundant Publications: duplicate and overlapping publications, salami slicing - Selective reporting and misrepresentation of data
3	Publication Ethics: Publication ethics: definition, introduction and importance - Best practices / standards setting initiatives and guidelines: COPE, WAME - Conflicts of interest - Publication misconduct: definition, concept, problems that lead to unethical behavior and vice versa, types – Violation of publication ethics, authorship and contributor ship - Identification of publication misconduct, complaints and appeals - Predatory publisher and journals
4	Open Access Publishing: Open access publications and initiatives - SHERPA/RoMEO online resource to check publisher copyright & self-archiving policies - Software tool to identify predatory publications developed by SPPU - Journal finger / journal suggestion tools viz. JANE, Elsevier Journal Finder, Springer, Journal Suggester.
5	Publication Misconduct: Group Discussion: a) Subject specific ethical issues, FFP, authorship b) Conflicts of interest c) Complaints and appeals: examples and fraud from India and abroad Software tools; Use of plagiarism software like Turnitin, Urkund and other open-source software tools. Reference Management tools.
6	Databases and Research Metrics: Databases: Indexing databases, Citation databases: Web of Science, Scopus. Research Metrics: Impact Factor of journal as per Journal Citations Report, SNIP, SJR, IPP, Cite Score - Metrics: h-index, g index, i10 Index, altmetrics.

Module 1,2 and 3 are to be covered via Theory mode and Units 4,5 and 6 are to be covered via practice mode.

References:

1. Nicholas H. Steneck, (2007), Introduction to the Responsible Conduct of Research, Office of Research Integrity.
2. Paul Oliver, (2003), The Student's Guide to Research Ethics, Open University Press.
3. Adil E. Shamoo; David B. Resnik, (2003), Responsible Conduct of Research, Oxford University Press.
4. Kambadur Muralidhar, Amit Ghosh and Ashok Kumar Singhvi,(2019), Ethics in Science Education, Research and Governance Indian National Science Academy, ISBN: 978-81-939482-1-7.
5. Anderson B.H., Dursaton, and Poole M. (1997), Thesis and assignment writing, Wiley Eastern.
6. Bijorn Gustavii,(2008), How to write and illustrate scientific papers, Cambridge University Press.
7. Bordens K.S. and Abbott, B.b. (2008), Research Design and Methods, Mc Graw Hill.
8. Graziano, A., M., and Raulin, M., L., (2007), Research Methods – A Process of Inquiry, Sixth Edition, Pearson.

DESIGN THINKING AND TRANSLATIONAL RESEARCH

Course Code	Course Name	Level	Credit
P0552403	Design Thinking and Translational Research	500	3
Course Description: This course provides a comprehensive introduction to design thinking, focusing on empathy, ideation, prototyping, and testing to solve complex problems. Students will learn to understand user needs, generate innovative ideas, and develop practical solutions. The course also covers translational research to bridge theoretical and practical applications and includes insights into intellectual property rights and patent processes. Through case studies and hands-on activities, students will apply these methodologies to real-world challenges.			
Course Learning Outcomes (CLOs): By the end of this course, students will be able to: CL01: Apply the design thinking process to identify and solve complex, real-world problems. CL02: Utilize empathy tools to understand user needs and define clear problem statements. CL03: Generate and communicate innovative ideas using various ideation techniques. CL04: Develop and test prototypes, refining solutions based on feedback and iterative improvements. CL05: Understand the principles of translational research and apply them to bridge theoretical concepts with practical applications. CL06: Demonstrate knowledge of intellectual property rights, including the patent process, to protect innovative ideas and products.			

Program Learning Outcomes (PLOs):

- PL01:** Demonstrate the ability to formulate, design, and conduct independent research that contributes to the advancement of knowledge in their field.
- PL02:** Apply critical thinking skills to evaluate complex problems, synthesize information, and develop innovative solutions.
- PL03:** Utilize appropriate research methodologies and tools to effectively gather, analyze, and interpret data.
- PL04:** Communicate research findings effectively through written and oral presentations to diverse audiences.
- PL05:** Uphold ethical standards and demonstrate professionalism in all aspects of research and academic practice.
- PL06:** Collaborate with interdisciplinary teams to address complex challenges and drive innovation in their field.
- PL07:** Encourage innovation and entrepreneurial thinking, applying research outcomes to develop new technologies, products, or services that address societal needs.
- PL08:** Understand the global context of science, engineering, technology, and management, including the social, economic, and environmental implications of research and practice.

Mapping of course learning outcomes with program learning outcomes:

	PL01	PL02	PL03	PL04	PL05	PL06	PL07	PL08
CLO1		3				2	3	
CLO2		3				2		2
CLO3		3		2		2	3	
CLO4		3				2	3	
CLO5	3		2				3	2
CLO6					3		3	2

(Correlation: 1-Slight (Low), 2-Moderate (Medium), 3-Substantial (High))

Syllabus

Module	Content
1	<p>Fundamentals of Design Thinking: Design Thinking Process: Types of the thinking process, Common methods to change the human thinking process, Design thinking: Definition, Origin of design thinking, Importance of design thinking, Design vs Design thinking, Problem solving, the need of design thinking; An approach to design thinking, Design thinking Process model, Design thinking tools, Theories of Design Thinking, Practices of Design Thinking; Team Based Design Thinking. Case Studies: General, Engineering and Service applications Activities: Identify an Opportunity and Scope of the Project Explore the possibilities and prepare a design brief in concerned research areas.</p>
2	<p>Empathize and Define: Design thinking phases, how to empathize, Role of empathy in design thinking, the purpose of empathy maps, Things to be done prior to empathy mapping, Activities during and after the session, Understanding empathy tools: Customer Journey Map, Personas. Define: Methods of Define Phase: Storytelling, Critical items diagrams, Define success</p>

	<p>Activities: Apply the methods of empathizing and Define Phases Finalize the problem statement in concerned research areas.</p>
3	<p>Ideation: Challenges in idea generation, Visualize, Empathize, and Ideate method, Importance of visualizing and empathizing before ideating, Applying the method, Create Thinking, Generating Design Ideas, Lateral Thinking, Analogies, Brainstorming, Mind mapping, Synectic's, Development of work, Analytical Thinking, Group Activities. Ideation Tools: How Might We? (HMW), Storyboard,</p> <p>Activities: Apply the methods of Ideate Phase: Generate Lots of Ideas in concerned research areas.</p>
4	<p>Prototyping and Testing: What is a prototype? - Prototyping as a mindset, prototype examples, prototyping for products; Why we prototype? Fidelity for prototypes, Process of prototyping- Minimum Viable prototype.</p> <p>Activities: Apply the Methods of the Prototype Phase: Create prototypes for selected ideas in concerned research areas.</p> <p>Testing prototypes with users. Create a Pitch-Plan for scaling up-Road map for Implementation, Fine-tuning and Submission of the project report</p> <p>Activities: Collect feedback; iterate and improve the ideas Present your solution using the Storytelling method</p>
5	<p>Translational Research – Introduction: Definition, history, and significance of translational research. Differences and connections between basic, applied, and translational research. Importance of interdisciplinary approaches, team science, and collaboration strategies.</p> <p>Translating biomedical research into clinical applications (e.g., drug development, medical devices). From lab discoveries to engineering solutions (e.g., material science, nanotechnology). Development of new technologies (e.g., AI, robotics) from theoretical research.</p> <p>Challenges in Translational Research - Scientific, technical, and logistical challenges; funding and resource allocation.</p>
6	<p>Intellectual Property and Patents: Intellectual Property – The concept of IPR, Evolution and development of concept of IPR, IPR development process, Trade secrets, utility Models, IPR & Bio diversity, Role of WIPO and WTO in IPR establishments, Right of Property, Common rules of IPR practices, Types and Features of IPR Agreement, Trademark, Functions of UNESCO in IPR maintenance.</p> <p>Patents – objectives and benefits of patent, Concept, features of patent, Inventive step, Specification, Types of patent application, process E-filing, Examination of patent, Grant of patent, Revocation, Equitable Assignments, Licences, Licensing of related patents, patent agents, Registration of patent agents.</p>

	<p>Case Studies: Analysis of successful translational research projects in concerned research areas.</p> <p>Activities: Writing and presenting translational research proposals.</p>
<p>References:</p> <ol style="list-style-type: none"> 1. Tim Brown, (2009), Change by Design: How Design Thinking Transforms Organizations and Inspires Innovation, HarperCollins Publishers Ltd. 2. Roger Martin, (2009), The Design of Business: Why Design Thinking is the Next Competitive Advantage, Harvard Business Press. 3. Hasso Plattner, Christoph Meinel and Larry Leifer (eds), (2011), Design Thinking: Understand –Improve– Apply, Springer. 4. Idris Mootee, (2013), Design Thinking for Strategic Innovation: What They Can't Teach You at Business or Design School, John Wiley & Sons. 5. Jeanne Liedtka, Andrew King, Kevin Bennett, (2013) Book - Solving Problems with Design Thinking - Ten Stories of What Works, (Columbia Business School Publishing). 6. Maurício Vianna, Ysmar Vianna, Isabel K. Adler, Brenda Lucena, Beatriz Russo, (2011), Design thinking: Business Innovation, MJV Press. 7. Burgelman, Christensen, and Wheelwright, (2017), Strategic Management of Technology and Innovation, 5th Edition, McGraw Hill Publications. 8. Catherine J. Holland, (2007), Intellectual property: Patents, Trademarks, Copyrights, Trade Secrets, Entrepreneur Press. 9. David Hunt, Long Nguyen, Matthew Rodgers, (2007), Patent searching: tools & techniques, Wiley. 10. The institute of company secretaries of India, statutory body under an act of parliament, professional programme intellectual property rights, law and practice, September 2013 11. Martin Wehling, (2021), Principles of Translational Science in Medicine from Bench to Bedside, 3rd Edition, Academic Press 	

PEDAGOGY DESIGN

Course Code	Course Name	Level	Credit
P0552404	Pedagogy Design	500	2
<p>Course Description: This course aims to provide research scholars with a comprehensive understanding of pedagogical theories, models, and practices. It focuses on the design and implementation of innovative teaching methods and the assessment of educational outcomes. This course will also emphasize the development of scholarly research skills in pedagogy.</p>			
<p>Course Learning Outcomes (CLOs): By the end of the course, students will be able to:</p> <p>CL01: Understand and critically evaluate advanced pedagogical theories and models.</p> <p>CL02: Develop and apply innovative instructional strategies and teaching methods.</p> <p>CL03: Design curriculum and learning experiences that are student-centered and inclusive.</p> <p>CL04: Conduct rigorous research in pedagogy, including qualitative and quantitative methods.</p> <p>CL05: Analyze and apply assessment and evaluation techniques in educational settings.</p> <p>CL06: Develop reflective practices and engage in continuous professional development.</p>			

Program Learning Outcomes (PLOs):

- PL01:** Demonstrate the ability to formulate, design, and conduct independent research that contributes to the advancement of knowledge in their field.
- PL02:** Apply critical thinking skills to evaluate complex problems, synthesize information, and develop innovative solutions.
- PL03:** Utilize appropriate research methodologies and tools to effectively gather, analyze, and interpret data.
- PL04:** Communicate research findings effectively through written and oral presentations to diverse audiences.
- PL05:** Uphold ethical standards and demonstrate professionalism in all aspects of research and academic practice.
- PL06:** Collaborate with interdisciplinary teams to address complex challenges and drive innovation in their field.
- PL07:** Encourage innovation and entrepreneurial thinking, applying research outcomes to develop new technologies, products, or services that address societal needs.
- PL08:** Understand the global context of science, engineering, technology, and management, including the social, economic, and environmental implications of research and practice.

Mapping of course learning outcomes with program learning outcomes:

	PL01	PL02	PL03	PL04	PL05	PL06	PL07	PL08
CLO1	1	3	1	2	2			1
CLO2		3				3	3	1
CLO3		2			2	2	3	
CLO4	3	2	3	2	1			
CLO5	1	2	2	2				
CLO6		3			3			

(Correlation: 1-Slight (Low), 2-Moderate (Medium), 3-Substantial (High))

Syllabus

Module	Content
1	Introduction to Pedagogical Theories: Overview of Pedagogical Theories: Historical evolution of pedagogical theories - Key figures and milestones in pedagogy. Constructivist and Socio-Cultural Approaches: Vygotsky's theory of social learning -Piaget's stages of cognitive development. Critical Pedagogy and Feminist Pedagogy: Paulo Freire's critical pedagogy- The role of gender in pedagogy. Postmodern and Post-Structuralist Perspectives: Deconstructing traditional pedagogical narratives - The influence of postmodernism in education.
2	Instructional Strategies and Curriculum Design: Student-Centered Learning and Active Learning Strategies: Flipped classroom models -Collaborative and cooperative learning. Problem-Based Learning and Inquiry-Based Learning: Designing problem-based learning activities - Implementing inquiry-based approaches. Technology-Enhanced Learning: Using digital tools in teaching - Blended learning and online education. Curriculum Development and Design: Principles of curriculum design -Developing learning objectives and outcomes.

3	<p>Assessment, Evaluation, and Reflective Practice: Assessment Methods and Techniques: Formative vs. summative assessment – Authentic assessment strategies. Evaluation of Teaching and Learning: Techniques for evaluating teaching effectiveness - Student feedback and course evaluation. Reflective Practice in Teaching - Models of reflective practice -The role of self-assessment and peer feedback. Inclusive Pedagogy and Universal Design for Learning (UDL) -Principles of inclusive education -Implementing UDL in higher education.</p>
4	<p>Research in Pedagogy: Research Methodologies in Education: Qualitative vs. quantitative research methods -Mixed-methods research design. Designing and Conducting Pedagogical Research: Identifying research questions and hypotheses - Data collection and analysis techniques. Ethical Considerations in Educational Research: Ethical guidelines and standards -Issues of consent, confidentiality, and integrity. Presentation and Dissemination of Research Findings: Writing research papers and articles -Presenting at academic conferences.</p>
<p>References:</p> <ol style="list-style-type: none"> 1. Biggs, J., & Tang, C. (2011). Teaching for Quality Learning at University (4th ed.). Open University Press. 2. Brookfield, S. D. (2017). Becoming a Critically Reflective Teacher (2nd ed.). Jossey-Bass. 3. Freire, P. (2000). Pedagogy of the Oppressed. Continuum. 4. Lave, J., & Wenger, E. (1991). Situated Learning: Legitimate Peripheral Participation. Cambridge University Press. 5. Ramsden, P. (2003). Learning to Teach in Higher Education (2nd ed.). Routledge. 	