

ITL-830: Educational Assessment of and for Learning

Credit Hours:

3+0

Prerequisites:

None

Course Objectives:

This course provides an in-depth exploration of educational assessment through the lens of cognition-based frameworks. It critically examines how advancements in cognitive psychology, contemporary learning theories, and emerging technologies are transforming assessment design and practice. Students will engage with both traditional and innovative approaches, analyzing real-world examples and research-based prototypes to understand their theoretical underpinnings and practical applications. Emphasis will be placed on designing valid, reliable, and equitable assessments that capture the complexity of student cognition and learning processes. Key areas of focus include the fundamental purposes of assessment, strategies for eliciting higher-order thinking, the integration of technology for adaptive and personalized assessment, and the ethical dimensions of social justice, equity, and accessibility in assessment systems. By the end of the course, the students will be able to:

1. Understand key theories of cognition and learning relevant to assessment design.
2. Critically analyze the purposes and principles of educational assessment in different contexts.
3. Apply cognitive and learning theories to the design of fair and valid assessments.
4. Evaluate the role of technology in enhancing and personalizing assessment practices.
5. Address equity, accessibility, and social justice concerns in educational assessment systems.
6. Design, pilot, and justify a cognition-based assessment aligned with learning goals.

Course Contents:

- Foundations of Educational Assessment
 - Definitions, purposes, and principles of assessment
 - Assessment of vs. assessment for learning
 - Historical evolution and emerging trends
- Cognitive Psychology and Learning Theories in Assessment
 - Key cognitive theories and implications for assessment
 - Models of learning and their assessment applications
 - Cognitive constructs and measurement approaches

- Designing Fair and Valid Assessments
 - Principles of validity, reliability, and fairness
 - Strategies to elicit higher-order thinking skills
 - Case studies of cognition-based assessment design
- Formative and Summative Assessment Practices
 - Roles and strategies of formative assessment
 - Summative assessment for accountability and policy
 - Using feedback to enhance learning outcomes
- Technology-Enhanced Assessment
 - Digital tools, AI-driven assessments, and adaptive testing
 - Learning analytics for cognitive diagnostics
 - Gamification and interactive assessment environments
- Equity, Accessibility, and Social Justice
 - Bias and fairness in assessment design and interpretation
 - Accessibility considerations for diverse learners
 - Ethical dilemmas in technology-driven assessment
- Research and Innovation in Assessment
 - Analysis of recent research-based prototypes
 - Future directions: personalized learning, data-driven assessments
 - Critiquing and improving innovative models
- Capstone Project – Designing a Cognition-Based Assessment
 - Identifying objectives and cognitive targets
 - Developing tasks, rubrics, and scoring guides
 - Pilot testing and revising based on formative feedback
 - Presentation and theoretical justification of the design

Course Learning Outcomes:

At the end of the course, the students will be able to:

1. Explain the theoretical underpinnings of cognition-based assessment.
2. Differentiate between assessment of learning and assessment for learning.
3. Design assessments that elicit higher-order thinking and cognitive processes.
4. Critically evaluate existing and emerging assessment tools and prototypes.
5. Integrate technology to improve the validity, reliability, and accessibility of assessments.
6. Apply ethical principles to ensure fairness and inclusivity in assessment design.

Reference Materials/ Books:

1. Pellegrino, J. W., Chudowsky, N., & Glaser, R. (2001). *Knowing What Students Know: The Science and Design of Educational Assessment*.
2. Black, P., & Wiliam, D. (1998). *Assessment and Classroom Learning*.
3. Shepard, L. A. (2019). *Classroom Assessment to Support Teaching and Learning*.
4. Wilson, M. (2005). *Constructing Measures: An Item Response Modeling Approach*.
5. Bennett, R. E. (2011). *Formative Assessment: A Critical Review*.