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ONLINE LEARNING ENGAGEMENT WITH PEDAGOGICAL APPROACHES

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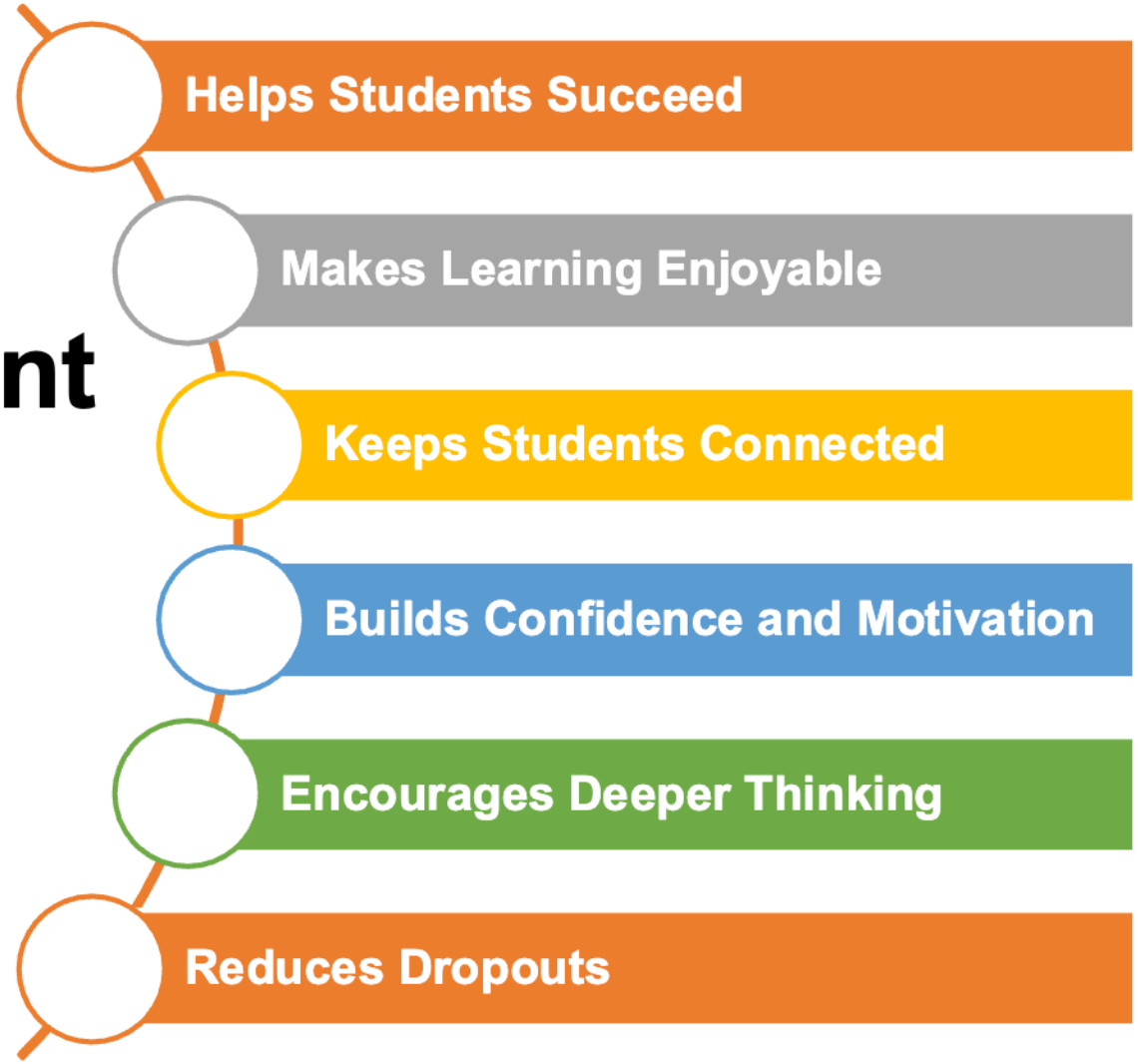
Why Engagement Matters in Online Learning?



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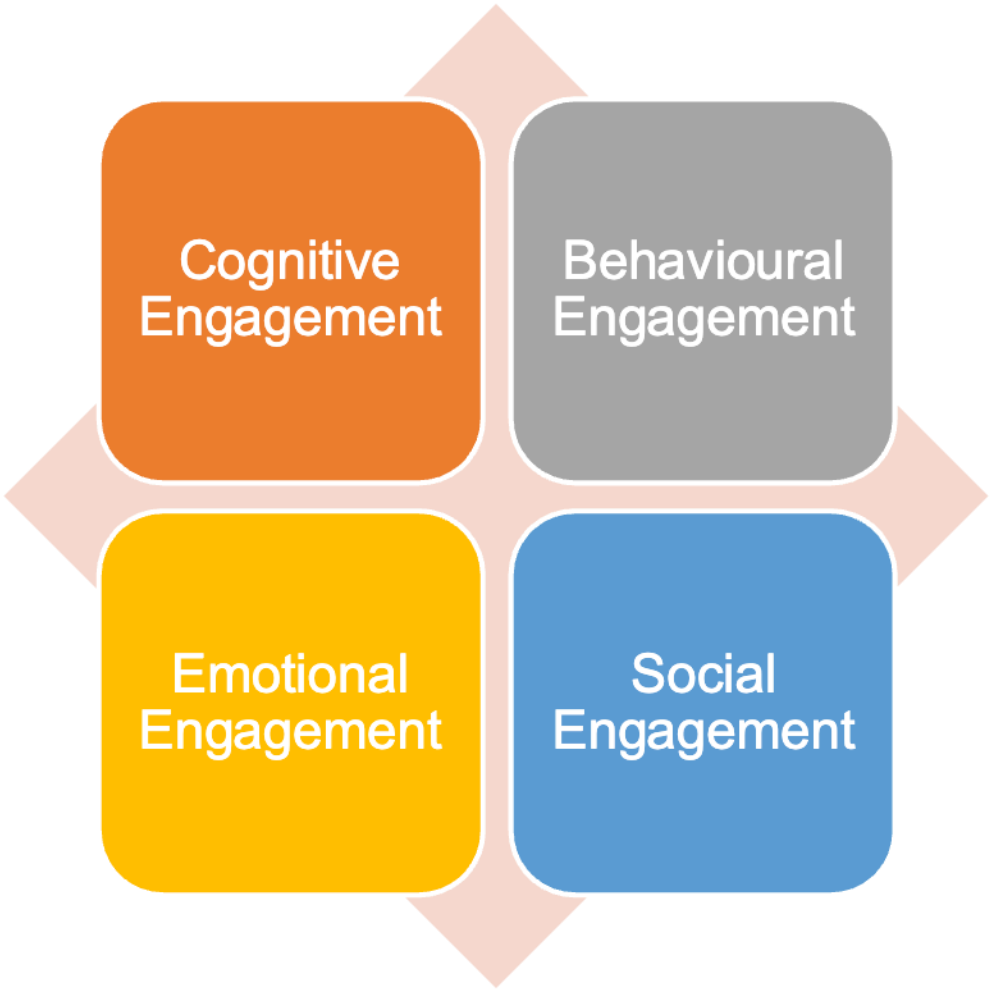

Dimensions of Learning Engagement

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Dimensions of Learning Engagement:
Cognitive Engagement

Involves how much students think deeply about the learning material.

It's about their mental effort to understand, analyse, and apply new knowledge.

Solving problems, critical thinking, and making connections between what's learned and real-world situations.

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Dimensions of Learning Engagement:
Behavioural Engagement

This refers to how active students are in the learning process.

It includes actions like attending classes, participating in discussions, submitting assignments, and engaging with course content.

Responding to quizzes, posting in forums, attending virtual study sessions, and submitting projects on time.

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Dimensions of Learning Engagement:
Emotional Engagement

It's about how students feel during their learning experience.

When students are emotionally engaged, they feel connected, motivated, and positive about their learning.

Feeling excited about learning new topics, enjoying discussions with peers, or feeling proud after completing a challenging task.

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Dimensions of Learning Engagement:
Social Engagement

This involves interaction with other learners and instructors.

Students who are socially engaged feel like they belong to a learning community.

Participating in group projects, collaborating on assignments, or discussing topics with classmates and instructors on discussion boards or chat rooms.

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Theories/ Models Supporting Online Learning Engagement

Hu, J., & Xiao, W. (2025). What are the influencing factors of online learning engagement? A systematic literature review. *Frontiers in Psychology*, *16*, 1542652. https://doi.org/10.3389/FPSYG.2025.1542652/XML/NLM

Community of Inquiry (CoI)

Cognitive Presence, Social Presence, and Teaching Presence (Garrison, 2016)

Self-Determination Theory (SDT)

Autonomy, Competence, Relatedness (Deci and Ryan, 2013)

Social Cognitive Theory (SCT)

Self-efficacy (Bandura, 1977), Self-regulated learning (Garrison, 1997; Kicken et al., 2009)

Transactional Distance Theory (TDT)

Transactional distance (Moore, 1993)

Technology Acceptance Model (TAM)

Perceived Usefulness and Perceived Ease of Use (Davis, 1989)

Community of Inquiry Theory (Garrison, 2016)

- This theory posits that in an online learning environment, learners can form a **community** that enhances learning efficiency through collaborative exploration, cooperation, and discussion.
- The COI theory encompasses three fundamental factors: **Cognitive Presence, Social Presence, and Teaching Presence**.
- Teaching Presence is considered the most influential factor – teachers' design and organization of course, facilitation of discussions, direct instruction, assessment and feedback, technical support, and other behaviours – significantly impact students' engagement in online learning.
- Social Presence – social respect, social sharing, open-mindedness, social identity, and intimacy – help alleviate feelings of loneliness and anxiety among students in online learning, thus enhancing their level of engagement.
- Cognitive Presence – knowledge absorption and construction – influences engagement in online learning.

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Self-Determination Theory (Deci and Ryan, 2013)

- The core factors of autonomy, competence, and relatedness are fundamental needs that can enhance learners' internal motivation and engagement.

- **Findings:**
  - Students with a stronger sense of autonomy and intrinsic motivation are more likely to actively participate in online learning activities and tasks.
  - Students with a stronger sense of relatedness can overcome feelings of isolation and alienation in online learning, as they maintain closer relationships with teachers, resulting in higher levels of engagement.
  - Perceived competence, which refers to learners' subjective perception and evaluation of their ability to complete online courses or tasks, exhibits a positive correlation with academic motivation and engagement.

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Self-Determination Theory (Deci and Ryan, 2013)

- **How these needs can be met in online learning environments?**
  - Teacher support plays a crucial role in meeting learners' needs – providing and recommending various types of digital resources to support students' learning anytime and anywhere, offering clear guidance on digital submission and technical issues, utilizing carefully designed learning materials, providing multimodal feedback to students in asynchronous forums, hosting real-time interactive courses through instant messaging software, and using visual aids such as images and emoticons to facilitate communication and create a positive mood.
  - A supportive online learning environment is conducive to meeting the needs of learners, particularly with easy-to-use online learning platforms and sufficient home equipment and resources.
  - Learners' self-regulated learning ability, digital literacy, and prior learning experience.

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Social Cognitive Theory (SCT)

- One of the core components of SCT is **self-efficacy** (Bandura, 1977)
- Self-efficacy refers to an individual's confidence and judgment in their ability to successfully complete tasks, which subsequently influences their decision-making, effort, and persistence.
- In the context of online learning, it pertains to learners' self-perceived ability to accomplish various online learning activities, access resources, complete courses, and achieve desired academic grades.
- ICT self-efficacy – the sense of self-competence (e.g., one's perception of their own online learning goals), the sense of self-effort (e.g., one's ability to concentrate on online learning), and the sense of environmental control (e.g., one's feelings about the online learning environment).
- Learners' self-efficacy in online learning is centred around their self-assessment of their ability to utilize technology effectively and adapt to technological learning environments.

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Social Cognitive Theory (SCT)

- **Self-regulated learning** is another crucial component of social cognitive theory (Garrison, 1997; Kicken et al., 2009).
- This theory suggests that learners can improve their performance by independently setting goals, monitoring their progress, adjusting learning strategies, and evaluating their outcomes.
- Self-regulated learning skills and abilities have a significant impact on learning engagement, particularly in online learning environments.
- Self-regulated learning abilities are composed of six aspects: goal setting, time management, environmental construction, task strategy, seeking help, and self-evaluation (Barnard et al., 2009).

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Transactional Distance Theory (Moore, 1993)

- A theoretical framework that illustrates how psychological and communicative distance between learners and instructors can impact learning outcomes.
- transactional distance – the gap in communication and understanding caused by physical distance between learners and instructors, which has been found to be closely related to learning engagement in numerous previous studies.
- In online learning, enhancing online interaction is the best way to motivate learners, stimulate their enthusiasm for learning, and improve their learning efficiency.

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Transactional Distance Theory (Moore, 1993)

- **Interaction** in the context of online learning can be categorized into:
  - Learner-Instructor interaction – bi-directional communication between students and teachers – such as asking questions, seeking support, and receiving encouragement from instructors.
  - Learner-Learner interaction – communication and collaboration among individual learners or in groups – such as exchanging ideas, discussing course-related topics, and providing feedback to their peers.
  - Learner-Content interaction – focuses on learners actively engaging with the course content, constructing meaning, and solving problems – such as reading course materials, completing assignments, and participating in simulations or online activities, allowing learners to make connections, apply knowledge, and develop a deeper understanding of the subject matter.

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Technology Acceptance Model (Davis, 1989)

- A theoretical model widely used to explain and predict individuals' willingness to adopt and use new technologies, particularly in online environments that rely on information and communication technology support.
- TAM suggests that the adoption of a new technology is primarily influenced by two core factors – Perceived Usefulness and Perceived Ease of Use.
- Perceived Usefulness – relates to how learners perceive that the technology can enhance their learning experience, improve their performance, or help them achieve their learning objectives.
- Perceived Ease of Use – reflects learners' perception of how easy or convenient it is to interact with the technology, navigate through the learning materials, and perform various tasks within the online learning environment.
- These highlight the importance of designing online learning systems that are perceived as useful and user-friendly to promote learner engagement and adoption of the technology.

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Online Learning Practices to Foster Engagement

Practice	Engagement Type(s)	Why It Works
Breakout rooms (Zoom, MS Teams)	Learner–Learner, Cognitive, Social	Promotes collaboration and peer discussion
Weekly "check-in" polls (e.g. Mentimeter)	Emotional, Learner–Instructor	Builds connection, lets students express concerns
Gamification (badges, points, leaderboard)	Cognitive, Emotional	Increases motivation and effort through rewards
Digital storytelling (Canva, Adobe Express)	Learner–Content, Cognitive	Encourages creativity and deeper content interaction
Interactive videos (Edpuzzle, H5P)	Learner–Content, Cognitive	Keeps attention, checks understanding during content consumption
Virtual peer review (Google Docs, Peergrade)	Learner–Learner, Cognitive	Builds accountability and critical thinking
Learning journals/blogs (Padlet, Blogger)	Emotional, Cognitive, Self-regulated	Encourages reflection and emotional expression
Asynchronous voice/video messages (Loom, Flipgrid)	Learner–Instructor, Emotional	Adds a human touch and reduces feelings of isolation
Self-assessment quizzes (LMS, Quizizz)	Learner–Content, Self-regulated	Allows learners to monitor progress and readiness
Scenario-based learning (Twine, LMS modules)	Cognitive, Learner–Content	Simulates real-life challenges to deepen learning
Discussion prompts with peer replies	Social, Cognitive	Builds shared knowledge through structured interaction
Student-led webinars or Q&A sessions	Learner–Learner, Cognitive, Autonomy	Shifts responsibility, promotes confidence and content mastery

Measuring Online Learning Engagement

Engagement Aspect	What to Measure	How to Measure	Tools/Instruments
Behavioural	Task completion, participation, login frequency	LMS tracking, assignment logs, attendance reports	LMS analytics, SCORM logs
Cognitive	Deep thinking, metacognition, application of knowledge	Discussion post analysis, quiz performance, reflective writing	Critical thinking rubrics, essay prompts
Emotional (Affective)	Interest, enjoyment, frustration, motivation	Surveys, emoji tagging, emotional check-ins	Student Engagement Scale, experience sampling
Social Engagement	Group interaction, collaboration, peer feedback	Peer review quality, discussion interactions, group contributions	CoI survey, social network analysis tools
Self-Regulation	Time management, goal-setting, self-monitoring	Learning journals, self-reports, progress trackers	SRL rubrics, reflection prompts
Learner–Instructor Interaction	Clarity, availability, responsiveness	Feedback logs, instructor ratings, message counts	CoI Teaching Presence survey items
Learner–Learner Interaction	Peer engagement, collaboration, discussion quality	Forum post count and quality, co-authored work	Social presence indicators (CoI), peer assessment rubrics
Learner–Content Interaction	Time spent, engagement with readings/videos	Click data, quiz completions, annotation activity	LMS page tracking, embedded video analytics
Technology Engagement	Ease of use, tool preferences, navigation behavior	Tech-use surveys, usability testing, bounce rate	TAM-based surveys, usability feedback forms
Satisfaction & Perceived Learning	Overall engagement experience, sense of achievement	Exit surveys, focus groups, Net Promoter Score	Course Experience Questionnaire/End of Course Survey, adapted CoI tool

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