

Turning Technologies Solutions

Learning Theories Supported

Learning Theories Overview

Theory	Overview	Researcher(s)
Immediate Feedback	Active involvement in the discovery process in addition to immediate feedback promotes retention and the correction of initially inaccurate response strategies.	Epstein Immediate Feedback Assessment Technique promotes learning and corrects inaccurate first responses
Engagement	Depict learner's psychological investment in learning. It is also increasingly used to describe meaningful student involvement throughout the learning environment.	Prensky Digital Natives, Digital Immigrants
Spacing Effect	Learners easily remember or learn items when they are studied a few times over a long period of time.	Greene Spacing effects in memory: Evidence for a two-process account
Peer Instruction	Learners are asked a question and formulate their own answers; they then discuss their answers in groups attempting to reach consensus on the correct answer. This process forces the learners to think through the arguments being developed, and enables them (as well as the instructor) to assess their understanding of the concepts even before they leave the classroom.	Mazur Peer Instruction: Ten Years of Experience and Results
Agile Teaching	The ability for the instructor to quickly adapt and change course pace, as well as alter course structure to suit the needs and abilities of the learner.	Bruff Teaching with classroom response systems: Creating active learning environments
Motivation	There are four steps for promoting and sustaining motivation in the learning process: Attention, Relevance, Confidence, Satisfaction (ARCS). For a learners' attention be aroused and sustained, there must be relevance of what is being learned, confidence built and a correlation between effort and results.	Keller Use of the ARCS Motivation Model in Courseware Design
Assessment FOR Learning	Assessments OF learning check to see if the learners have met required objectives versus Assessments FOR learning which are designed to check if the learner is making progress toward meeting objectives during the learning process. One is for accountability, while the other is used to support learning.	Stiggins Putting testing in perspective: It's for learning
Positive Reinforcement	Promotes the rapid questioning model and the positive reinforcement of correct responses. Closely monitor learner's responses and expectation of learning mastery.	Reid Practicing effective instruction: The Exemplary Center for Reading Instruction approach
Game Based Learning	Game Based Learning uses competitive exercises, either pitting the learners against each other or encouraging them to challenge themselves in order to motivate them to learn better.	Dede Immersive Interfaces for Engagement and Learning
Active Learning	Involvement of learners directly and actively in the learning process itself. This means that instead of simply receiving information verbally and visually, students receive and participate and do.	Bonwell and Eison Active learning: Creating excitement in the classroom
Learning Styles	Learning styles are not concerned with "what" learners learn, rather "how" they prefer to learn to include audio, kinesthetic and visual learning preferences.	Keefe Learning Style Theory and Practice
Socratic Questioning	The instructor poses questions that are more meaningful than those a novice of a given topic might develop on his or her own. The instructor creates and sustains an intellectually stimulating learning environment and acknowledges the value of the learner in that environment.	Hake Socratic pedagogy in the introductory physics lab

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Learning Theories & Polling Application Features

Theory	Suggested Application Features	Examples
Immediate Feedback	Chart with Correct Answer Indicator	By always providing a Chart and a Correct Answer Indicator, learners and the instructor are provided with both the immediate results and knowledge of the correct answer.
	Participant Monitor	To view learner specific responses, use a split/dual screen to view the Participant Monitor only on the instructor's laptop.
	Individual Reports	Provide learners with the "Results by Participants–Answer Detail" report using the page break feature as a study guide.
Engagement	Fastest Responder	Conduct a warm-up by having 2-3 questions related to previous materials in combination with Fastest Responder slides.
	Priority Ranking or Ranking Wizard	Involve learners in their own learning process. Use a Priority Ranking slide to allow learners to identify several topics they are interested in learning more about.
Spacing Effect	Continue Prior Session	Continue Prior Session can be used to collect the data from the various questions being spaced between class periods.
	Essay Slide	Provide learners with "think time" by either inserting a PowerPoint slide with only the question or use the Essay Slide to a TurningPoint Question slide.
Peer Instruction	Repoll	Ask the question initially without discussion and then after discussion use the Repoll function to ask again.
	Comparative Linking/ Comparative Linking Reports	Copy the question to show a Comparative Link between the first polling and second polling.
Agile Teaching	On the Fly Slides	On the Fly questions can be inserted enabling the instructor flexible questioning.
	Conditional Branching	Build Conditional Branching slides that will automatically move to specific slides based on the learners' responses.
	Moment to Moment	Check for understanding using the Moment to Moment slide having the learner self-evaluate their comprehension level.
Motivation	Countdown Timer/Response Grids	Use a Countdown Timer to motivate learners to answer quickly and display response/non-response grids to motivate participation.
	Leader Boards/Gaming Slides	Leader Boards spaced throughout a session will encourage competition.
	Point Values	Use positive and negative Point Values to encourage motivation based on total points.
Assessment FOR Learning	TurningPoint AnyWhere–Live Charts	Opened TurningPoint AnyWhere's Live Chart feature to allow learners to change their answer from 1 to 10 based on their comprehension level during instruction.
	Anonymous Polling	Use Anonymous Polling to encourage learners to respond without the stress of grading.
	Review Only	Change the chart settings to "Review Only" especially when there is a potential of a large percentage of incorrect responses during a pre-test which might lead to discouragement.
	Comparative Linking	Provide pre and post questions within one session and display the change using the Comparative Linking slide.
Positive Reinforcement	Correct Answer Indicator	Use a Correct Answer Indicator in both TurningPoint and TurningPoint AnyWhere.
	Fastest Responders/Leader Boards	Display Fastest Responder and Leader Boards frequently to reinforce correct answer choices.
	Point Values	Use all positive Point Values for both correct and incorrect answers. (Set the incorrect choices at a lower value.)
Game Based Learning	Team Slides Fastest Responder Wager Leader Boards Speed Scoring TPAW with Digital Games Team Scoring Reports	TurningPoint allows for the use of multiple gaming slides. An instructor could simultaneously have learners competing individually and as teams. Show the Leader Boards frequently. Encourage ongoing competition by posting the team scoring reports weekly.

Theory	Suggested Application Features	Examples
Active Learning	<p>"Need Help" answer choice</p> <p>On the Fly Questions/Custom</p> <p>Text Message/Feedback</p>	<p>Add an answer option of "I do not understand" so learners will not guess and notify the instructor that help is needed.</p> <p>Use the On the Fly Question feature in TurningPoint or Custom Question in TurningPoint AnyWhere to have learners pose questions for the entire group to respond.</p> <p>XR/ResponseWare users can utilize the feedback features to notify the instructor of questions and comments.</p>
Learning Styles	<p>Demographic Comparison Data Slicing</p> <p>Convert to Picture Slide</p> <p>Chart Colors--Correct/Incorrect</p> <p>Answer Now</p> <p>Video/Audio files with question slides</p>	<p>Use a Demographic Slide for students to identify their learning style, audio, visual, kinesthetic, and compare their performance on different questions.</p> <p>Utilize the Convert to Picture Slide feature for visual learners and add audio files to the question slides when possible.</p> <p>Set the chart settings to correct and incorrect which will visually show green/red chart.</p> <p>Use the Answer Now object to visually remind learners to respond.</p> <p>Include video and audio files within TurningPoint or with TurningPoint AnyWhere to appeal to the various learning styles.</p>
Socratic Questioning	<p>Custom Standards List</p> <p>Conditional Branching</p> <p>Continue Prior Session</p>	<p>Create a Custom Standard List for the difficulty level of questions. Allows reporting based on difficulty. Build on the learners growing expertise via adding questions within a lecture with increasing difficulty.</p> <p>Use Conditional Branching to advance through material that the learner has mastered.</p> <p>Use Continue Prior Sessions to progress monitor.</p>

Learning Theories Reference List

Theory	Overview
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Engagement	Prensky, M. (2001). Digital natives, digital immigrants. NCB University Press, 9(5), 1-6.
Spacing Effect	Spacing Effects on Implicit Memory Tests <i>Journal of Experimental Psychology: Learning, Memory, and Cognition</i> , Volume 16, Issue 6, November 1990, Pages 1004-1011 Robert L. Greene
Peer Instruction	Mazur, E. (1997). <i>Peer Instruction: A User's Manual</i> , Prentice Hall. ISBN 0-13-565441-6
Agile Teaching	Bruff, D. (2009). <i>Teaching with classroom response systems: Creating active learning environments</i> . San Francisco: Jossey-Bass.
Motivation	Keller, J.M., & Suzuki, K. (1988). Use of the ARCS motivation model in courseware design. In D. H. Jonassen (ED).
Assessment FOR Learning	Stiggins, R. J. & Chappuis, S. (2005). Putting Testing in Perspective: Its for Learning. <i>Principal Leadership</i> , 6(2). Wellman, B., & Lipton, L. (2004).
Positive Reinforcement	Reid, E. R. (1986). Practicing effective instruction: The exemplary center for reading instruction approach. <i>Exceptional Children</i> , 52, 510-519
Game Based Learning	Immersive interfaces for engagement and learning. Dede C. Graduate School of Education, Harvard University, Cambridge, MA 02138, USA. chris_dede@harvard.edu
Active Learning	Bonwell, C.; Eison, J. (1991). <i>Active Learning: Creating Excitement in the Classroom</i> AEHE-ERIC Higher Education Report No.1. Washington, D.C.: Jossey-Bass
Learning Styles	Keefe, J.W. (1985). Assessment of learning style variables: The NAASP task force model. <i>Theory into. Practice</i> , 24, 138-144.
Socratic Questioning	<i>American Journal of Physics</i> , 66, 64-74. Hake, R.R. (1992). Socratic pedagogy in the introductory physics lab. <i>Physics Teacher</i> , 30, 546-552