IR RECIPES

Peer Instruction

Overview

Many view teaching as a transfer of information from instructor to student during lecture. learner listens and feverishly takes notes. In this unidirectional flow-of-information system, students aren't provided opportunities to do higher-order cognitive tasks (e.g., application, analysis, evaluation, synthesis) known to support learning. Sound familiar?

Simple, cooperative, discussion-based active learning strategies can be used to create those opportunities. Strategies include jigsaw, think-pair-share, and the focus of this IR Recipe, **Peer Instruction (PI)**. Peer Instruction is a cooperative-learning technique that promotes critical thinking, problem solving, and decision-making skills (Schell et al., 2018).

Implementation for Instructional Redesign

Below are the 7 steps of PI modified from Mazur (1997) and Parmalee et al. (2020), as well as key features of PI implementation modified (reordered) from Schell et al. (2018) originally published by Dancy et al. (2016). These suggestions leverage the features of an audience response system, like TopHat, to encourage participation and to facilitate learning.

Seven Steps of PI

1. Provide 10 to 15 min mini-lecture or pre-class reading.
2. Pose a question. * (Use an audience response system such as TopHat.)
3. Prompt learners to think individually about the question for 30 to 60 seconds.
4. Prompt learners to vote individually. ** (Use the audience response system.)
5. Prompt learners to discuss the question with one or more classmates citing evidence to support their opinion.
6. Repoll (i.e., prompt learners to vote again). Afterward, reveal the response chart.
7. Explain correct and incorrect answers.

Key Features of PI Implementation

1. Students are not graded on in-class PI activities.
2. PI is interspersed throughout class period.
3. Conceptual questions are posed.
4. Multiple-choice questions that have discrete answer options are posed.
5. Students have dedicated time to think and commit to answers independently.
6. Students discuss their ideas with their peers.
7. Students commit to an answer after peer discussion.
8. Instructor makes adaptation to instruction based on student responses.
9. Activities draw on student ideas or common difficulties.

* The question must be challenging enough that between 30 and 80% of learners answer correctly. If under 30% respond correctly, the instructor should consider revisiting content.

** Do not show a response graph. Learners often select the most popular response versus the correct answer when prompted to revote (Perez et al., 2010; Vickrey et al., 2015).

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How to Assess Impact and Effectiveness

A variety of simple, yet useful, strategies are available to gather data for evaluation of Peer Instruction efficacy.

Student Learning

Review student performance on assessments or assessment items from your course that align to relevant content.

- Track topics and associated learning outcomes addressed using the PI strategy.
- Identify exam or quiz questions, projects, papers, etc., that assess student learning of that aligned content.
- Conduct an analysis of how students performed on those aligned assessment items. Did they do better/worse compared to prior terms/other topics/your expectations?

SALG Survey

Employ a survey to ask students about their perceptions of learning and their thoughts on the strategy.

- The Student Assessment of Learning Gains (SALG) survey (Seymour et al., 2000) is a published tool for measuring student perceptions of learning and experience in a course.
- Create a custom course survey at https://salgsite.net. Consider items such as, "How did you feel the use of PI in the course supported your learning?" or, "How did discussing challenging questions with peers after first thinking on your own help or hinder your learning?"

SGID

Request a Small-Group Instructional Diagnostic (SGID) from the Drake Institute to collect valuable mid-semester feedback.

- Request a SGID by e-mailing drakeinstitute@osu.edu with your name and course taught. *
- An instructional consultant meets with you to discuss your needs and interests in feedback.
- The consultant visits your class and (after you've left the room/space) asks your students a number of questions about the course, your instruction and what is helping or hindering learning.
- The consultant generates a report and provides you with guidance on how to respond to the results.

References

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*Read more: https://drakeinstitute.osu.edu/instructor-support/getting-feedback-your-teaching