Research-based teaching tip

Immediate feedback

Ask students to explain their logic, and give immediate corrections and feedback to student answers and comments in-class.

Rationale:

Giving immediate feedback to student responses, correcting and clearing up inconsistencies in student logic, and asking for explanations to answers increases student performance.

Evidence:

- Repetition alone doesn't necessarily lead to increased performance, and feedback can increase the accuracy of performance.[1,2]
- Effective learning requires instructors to note and correct errors in knowledge and logic.[2]
- Instructional explanations increase learning outcomes compared to those who don't receive them.[3]
- Immediate feedback increases information acquisition and retention of material.[4,5]
- Immediate feedback increases the probability of correctly answering question in the future, especially if answered incorrectly and corrected in the first iteration.[5]

Implementation:

In a lecture or small group situation, immediate feedback can be accomplished by responding to and asking for students' logic and explanations in front of their peers or class[6].

Sources:

[1]Trowbridge MH, Carson H. 1932. An experimental study of Thorndike's theory of learning. Journal of General Psychology 7:245-253.

[2]Ericcson KA, Krampe R, Tesch-Romer C. 1993. The role of deliberate practice in the acquisition of expert performance. Psychological Review 100:363-406.

[3]Renkl A. 2002. Worked-out examples: instructional explanations support learning by self-explanations. Learning and Instruction 12:529-556.

[4]Epstein ML, Lazarus AD, Calvano TB, Matthews KA, Hendel RA, Epstein BB, Brosvic GM. 2002. Immediate feedback assessment technique promotes learning and corrects inaccurate first responses. Psychological Record 52:187-201.

[5]Epstein ML, Epstein BB, Brosvic GM. 2001. Immediate feedback during academic testing. Psychological Reports 88:889-894.

[6]Eddy SL, Converse M, Wenderoth MP. 2015. PORTAAL: a classroom observation tool assessing evidence-based teaching practices for active learning in large science, technology, engineering, and mathematics classes. CBE Life Sciences Education 14:1-16.