Summary:

* Previous studies show that students in active classes learned more, were more engaged and had more positive attitudes, but most instructors still use traditional methods
* However, past studies do not measure students’ inherent response to active engagement and used different course materials for active vs passive engagement.
* This study had 2 groups of university students doing an introductory physics course. With 2 lessons per week, the same instructor covered a different topic for each lesson, one with active engagement and the other with lecture-style passive engagement
* Students would do a survey judging their feeling of learning (FOL) , as well as complete a test of learning (TOL) after each class period.
* Course materials used for both active and passive engagement are identical, and both instructors were equally fluent and experienced, in contrast to previous studies
* For passive engagement, instructors presented slides, gave explanations and solved example problems. For active engagement, students solved example problems in small groups while the instructor roamed the room offering assistance.
* Students in the passive lecture felt that the class involved them as a listener more than those in the active class
* Students had a higher FOL for the passive lecture, but they scored a higher TOL for the active class
* Research suggests this is due to the cognitive fluency of lectures mislead students into thinking that they are learning more than they actually are, and novices in a subject have poor metacognition and thus are ill-equipped to judge how much they have learned.
* The authors postulate a third reason that students who are unfamiliar with intense active learning in college are unaware that the increased cognitive struggle accompanying active learning is actually a sign that the learning is effective.