

# THE EFFECT OF TEAM-BASED ACTIVE LEARNING AND EMBEDDED TUTORS IN THE FIRST COURSE IN ACCOUNTING

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## ABSTRACT

We evaluate the impact of active learning mode on student performance in the first course in accounting as compared to a traditional instructor-led passive mode. We find positive results for active learning mode only in the final cumulative exam, indicating its impact on the long-term knowledge retention. We also test the effect of embedded (in-class) tutors in the active learning mode. The averages of all three exams of sections with embedded tutors are all significantly higher than those with no embedded tutors. When controlled for the time spent with traditional outside tutors, the role of the embedded tutors remains significant in Exams 1 and 2.

**Keywords:** Active learning, embedded tutor, first accounting course

## INTRODUCTION

The first course in accounting provides a foundation to overall educational success and yet students in this course struggle to learn “the language of business” as evidenced in a wide body of teaching and learning research in the accounting discipline (Alanzi and Alfraih, 2017). This first course in accounting challenges students who may lack relevant work experience to comprehend industry jargon embedded in a seemingly arbitrary set of accounting standards toward practical problem-solving. Mere memorization techniques soon prove inadequate as exercises become increasingly challenging across assessments exposing a need for *deep learning* (Phillips & Graeff, 2014; Riley & Ward, 2017). Instructors are therefore challenged to deploy innovative pedagogies toward ensuring knowledge retention as these problem-solving skills provide a critical basis of academic success in business courses of higher education.

Well known pedagogical approaches include passive learning and active learning. While traditional instructor-led lecture and problem-solving drives passive learning, active learning challenges the student to lead in solving problems, engaging in discussion, and reflecting on the learning (Bonwell and Eisen, 1991; Misseyanni et al., 2018). Students may actively recall and apply techniques to complete tasks and correct their mistakes through trial and error in an active learning assignment for instance. Such applied learning experiences are intended to impart deep learning in contrast to passively accumulating knowledge through traditional lecture or “*teaching by telling*” (Freeman et al., 2014).

Active learning in this study includes primarily the use of collaborative learning activities, such as team-based learning and embedded tutors following a short lecture. In team-based learning, instructors assign problem-sets or cases to a group of students to be completed both inside and outside of class. Student will

often seek collaborative support in the form of outside individual or group tutoring. An active pedagogy less explored, however is “embedded-tutoring”, which refers to peer-to-peer tutoring in the classroom.

This IRB approved study will use related students’ exams’ performances and embedded tutor participation data to evaluate the impact of active learning methods on student performance in the first course in accounting as compared to a traditional passive learning methodology. We utilize six sections of enrolled student data and measure their exam performance throughout. Of the six sections, four are taught using an active learning mode and two sections using a passive mode. We secondly test the effect of embedded tutors in two of the four active learning modes with an overall 2x2 experiment design. We expect that students in the active learning mode will perform better on exams, demonstrate a stronger application of knowledge, and attain greater retention than those in passive learning mode. We also expect that embedded tutors will enhance the effect of active learning toward improved critical knowledge retention on the cumulative final exam.

We find results for active versus passive learning in the direction as predicted only in the third and final exam suggesting greater overall retention. Embedded tutors also play an important role in the active learning mode as the exam averages of sections with tutors are significantly higher than those with no tutors. The role of the embedded tutors was significant especially in the first and second exams when controlled for the time spent with tutors.