Active learning spaces: Student perceptions of engagement, space, and instructor involvement in an apparel production and merchandising course.

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Active learning classroom spaces will be mainstream by 2022 in most colleges and universities (Brooks, 2017). These unique spaces have movable tables and chairs along with whiteboards, monitors, and technologies which support student-centered group learning, see Figure 1. Active learning spaces improve student engagement and learning outcomes while also encouraging interaction, collaboration, and life-long learning in the classroom (Coorey, 2016). Courses designed for active learning require a change in the instructor's role from being a provider of knowledge to a facilitator and the students role of being a listener is changed to an active participant in their education (Drew & Mackie, 2011). This change can be a challenge for both the instructor and the students, especially in the beginning. Active learning instructors facilitate student learning by walking around the classroom and providing student motivation and guidance during the class activities (Drew & Mackie, 2011). Instructor training is key as the teaching pedagogy shifts from lecture teaching to student-centered learning (Armbruster, Patel, Johnson, & Weiss, 2009). Students no longer can be passive in the classroom but must come prepared to engage in their peer groups on an activity. Typically, students will have required readings prior to class, then come to class prepared to discuss and engage with their peers to complete the activities (Coorey, 2016). Activities are geared to applying their knowledge by solving problems, engaging in stimulated industry activities, reviewing case studies, and completing cooperative learning activities which involve higher order thinking tasks and engagement levels (Nilson, 2016; Umbach & Wawrzynski, 2005). Overall, activity learning promotes a student learning environment that leads to metacognitive development if the students feel engaged with the course (Nilson, 2016; Umbach & Wawrzynski, 2005). Therefore, the following hypotheses were investigated: (1) student perceptions about active learning space will positively influence student engagement in the course, (2) in active learning spaces, student instructor ratings will positively influence student engagement in the course, and (3) in active learning spaces, students' engagement levels will positively influence students' perceptions of team-based learning.
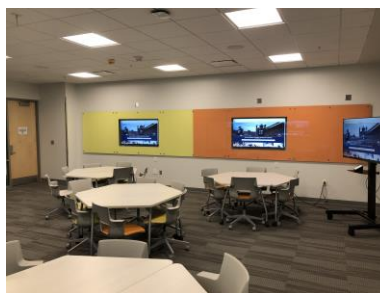

Figure 1. Active learning classroom space.

The study was conducted with a sophomore level apparel production management course that was taught in an Engaged Active Student Learning (EASL) classroom. This EASL classroom featured moveable clustered seating, glass boards, and multiple monitors to promote a flexible and open student-centered environment. The instructor had received specific training for teaching in the EASL classroom, had taught in an EASL classroom before, and had training and experience with active learning courses. Class enrollment was 47 students and a total of nine peer groups with four to six students per group were formed. Various active learning activities were used throughout the course, including cooperative, collaborative, and problem-solving, to reinforce course concepts with simulated industry task activities. Instructions were provided in class and students worked in peer groups to complete the activity while the instructor walked around class to answer questions and engage students, as necessary. At the end of the activity, the instructor recapped the activity, so the entire class could benefit from the knowledge gained from all the groups.

The study had IRB approval and an anonymous online survey with established reliable measures to measure student's perceptions of the active learning space, instructor involvement, engagement, and team-based learning was sent to all enrolled students of the course. All questions were on a 5-point (1=strongly agree to 5=strongly disagree) scale. A total of 37 students (78.7% response rate) completed the survey. Scale reliability was confirmed ($\alpha > .80$) for all variables. Sample majority had a mean age of 19.8 years, Caucasian (78.4%), sophomore (67.6%), and a merchandising major (78.4%). One-way analysis of variance (ANOVA) was conducted for the study. The results showed a significant relationship between student perceptions of the active learning space and student engagement in course [$F_{(12, 24)} = 6.061$, $p < .001$, $\eta^2 = .75$]. Similarly, student instructor ratings have a significant relationship with student engagement in the course [$F_{(3, 33)} = 6.366$, $p < .001$, $\eta2 = .37$]. Surprisingly, among the team-based learning skills{interpersonal skills [$F_{(15, 21)} = 3.54$, $p = .04$, $\eta2 = .72$], self-directed learning [[$F_{(15, 21)} = 2.09$, $p = .06$, $\eta2 = .6$], and cooperative learning skills [$F_{(15, 21)} = , 1.24$, $p = .32$, $\eta2 = .5$]} only interpersonal skills were found to have significant relationship with student engagement levels.

Based on the researchers results, active learning spaces increase student engagement in the course. Students were engaged during their course work and could interact with their peers more during the class. These group interactions allowed them to perform higher order thinking tasks and learn from their peers while feeling engaged with the course content. Additionally, the student's perceptions of the instructor's level of involvement impacted the student engagement. Instructors should take note of these results as their preparation and enthusiasm impacts the student's engagement in an active learning space. Student engagement also improved interpersonal skills in team-based learning. Students who were engaged were more accepting of group feedback and showed care and concern for their group members. Overall, active learning spaces can provide a positive experience for students and instructors to become for engagement in the course content. Future research will continue for additional terms to see if there are any changes over the course of the next year in engagement and team-based learning. Additionally, learning outcomes will need to be considered and compared to prior non-active learning terms.

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