

KAREN KETTER, KINSEY TAYLOR GUTHRIE, and NATALIA OMELCHENKO, Dept of Natural Sciences and Mathematics, West Liberty University, West Liberty, WV, 26074. Active learning approach is a key component of effective education.

New pedagogical approaches shifted education from unified instructions about basic facts and concepts to student-centered learning. A growing number of studies support the superiority of active learning approaches in the classroom over traditional instruction. During the active learning portion of a class, students may discuss and solve problems, or engage in various cooperative learning activities. Studies of student motivation can be an indicator of student achievement, as motivation plays an important role in the development of critical thinking skills and learning strategies. In the current study, we compare traditional and more innovative approaches to teach non-major biology classes that are offered in our institution (A- student-centered learning, no significant active learning component, B- student-centered learning, active learning component, C- traditional approach). In order to determine the effectiveness of different teaching strategies, we adapted a previously developed questionnaire concerning student motivation toward science learning (SMTSL) which examines 5 factors of motivation (self-efficacy, active learning, science learning value, achievement goal, and learning stimulation). A comparison of the 3 approaches indicates significant differences in self-efficacy ( $p < 0.0107$ ) and active learning ( $p < 0.0107$ ) between the significant active learning approach and traditional approach. The statistical analysis also demonstrated that observed differences could not be attributed to the academic standing of the students. In conclusion, the data indicate the importance of a significant active learning component for general education biology courses.