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Outcome-Based Education as Mediator of the Effect of Blended Learning on the Student Performance in Statistics

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Abstract : The higher education has adopted the outcomes-based education from K-12. In this approach, the teacher uses any teaching and learning strategies that enable the students to achieve the learning outcomes. The students may be required to exert more effort and figure things out on their own. Hence, outcomes-based students are assumed to be more responsible and more capable of applying the knowledge learned. Another approach that the higher education in the Philippines is starting to adopt from other countries is blended learning. This combination of classroom and fully online instruction and learning is expected to be more effective. Participating in the online sessions, however, is entirely up to the students. Thus, the effect of blended learning on the performance of students in Statistics may be mediated by outcomes-based education. If there is a significant positive mediating effect, then blended learning can be optimized by integrating outcomes-based education. In this study, the sample will consist of four blended learning Statistics classes at Jose Rizal University in the second semester of AY 2015–2016. Two of these classes will be assigned randomly to the experimental group that will be handled using outcomes-based education. The two classes in the control group will be handled using the traditional lecture approach. Prior to the discussion of the first topic, a pre-test will be administered. The same test will be given as posttest after the last topic is covered. In order to establish equality of the groups' initial knowledge, single factor ANOVA of the pretest scores will be performed. Single factor ANOVA of the posttest-pretest score differences will also be conducted to compare the performance of the experimental and control groups. When a significant difference is obtained in any of these ANOVAs, post hoc analysis will be done using Tukey's honestly significant difference test (HSD). Mediating effect will be evaluated using correlation and regression analyses. The groups' initial knowledge are equal when the result of pretest scores ANOVA is not significant. If the result of score differences ANOVA is significant and the post hoc test indicates that the classes in the experimental group have significantly different scores from those in the control group, then outcomes-based education has a positive effect. Let blended learning be the independent variable (IV), outcomes-based education be the mediating variable (MV), and score difference be the dependent variable (DV). There is mediating effect when the following requirements are satisfied: significant correlation of IV to DV, significant correlation of IV to MV, significant relationship of MV to DV when both IV and MV are predictors in a regression model, and the absolute value of the coefficient of IV as sole predictor is larger than that when both IV and MV are predictors. With a positive mediating effect of outcomes-base education on the effect of blended learning on student performance, it will be recommended to integrate outcomes-based education into blended learning. This will yield the best learning results.

Keywords : outcome-based teaching, blended learning, face-to-face, student-centered
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