Creating Interactive Classrooms Using the Flipped Model with Supplemental Instruction: Flipped Again by COVID

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Abstract: Successful mastery of concepts taught in mathematics courses proves essential to the pursuit of any STEM degree. Post-Secondary institutions play an important role in producing STEM professionals and Historically Black Colleges and Universities (HBCUs) play a major role in producing minority STEM graduates. Today, many students enter institutions with some fear and or deficits in mathematical skills and concepts. The flipped classroom approach was implemented in a pre-calculus course with the use of supplemental instructors to build math confidence, bolster student success and enhance students’ meta-cognitive skill. During the Spring 2020 Semester, COVID flipped the flipped classroom and additional strategies needed to be implemented. Overall, students’ who completed the Pre-Calculus course with the Flipped Classroom model had a higher GPA each semester in which the grades were collected for the evaluation. More specifically, when an Independent T-Test was conducted between Flipped and Non-Flipped grades at the .05 level of significance, results indicated that there was a statistically significant difference in course grades at the end of the Fall 2017, Spring 2019, Fall 2019 and Spring 2020 semesters, but not the Spring 2018 and Fall 2018 semesters.