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 deficits in mathematical skills and concepts. In addition to the deficit, students lack the knowledge of how to be successful in a college math course. Key patterns noticed in the students who struggle are 1) not consistently and earnestly completing assigned work 2) not utilize resources (i.e. instructor’s office hours and tutoring services) and 3) failing to appropriate effective means of study. Here we discuss engaging students through the use of flipped classrooms and Supplemental Instructors to not only address the mentioned issues but to also enhance students’ meta-cognitive skills. (Received September 18, 2019)