
**Categories:** Active Learning, Student Centered Learning, Flipped Classroom, Learning Skills, STEM, HBCU

**Summary**

This article examines the implementation of a hybrid Flipped Classroom approach to instruction in a required Physiological Psychology course at an HBCU in the mid-Atlantic region. The study discussed herein was motivated, in part, by ongoing concerns over the lack of persistence among minority STEM students and the subsequent racial disparity within the numbers of those graduating with STEM degrees. Further, the article considers the underlying learning skills that the authors felt may have been at the root of the aforementioned problem.

According to the authors, the extant literature on learning suggests that academic success at the higher educational level requires strong foundational learning skills. Unfortunately, many students have had limited training in effective learning or study skills prior to entering college. Indeed, most rely on those skills that the literature had identified as least effective and efficiency. As an example, the authors point to highlighting, which rarely helps students learn or remember crucial information in a meaningful way. In contrast, the literature on learning skills points to a variety of methods that have far greater positive impact on student success: practice testing, distributed testing, elaborative interrogation, and self-explanation.

Based on the aforementioned literature, the authors developed a hybrid Flipped Classroom model that would improve student academic performance and, in part, do so by helping inculcate effective learning skills in their students. The course they chose, Physiological Psychology, was heavily focused on instruction on the process of “synaptic transmission” and represented a good example of the type of course that students indicated that they did not like or viewed as especially tough. Additionally, professors who taught the course reported that students struggled to achieve requisite grade performance.

The model constructed by the authors focused on the employment of two of the effective learning skills listed above. The first of these was self-explanation. According to the authors, in self-explanation, students study by explaining, on their own, the individual steps used in the process of solving a given problem. The authors also heavily employed practice testing, which allowed students and instructors to assess understanding of knowledge as it was being learned in a low or no-stakes context. These two elements represented what the authors viewed as an enhancement of a standard Flipped Classroom, which their model reflected through the use of online instructional videos and class sessions focused on active learning.

The Flipped Classroom process was utilized in approximately one-fourth of their class sessions. One week prior to a flipped session, the authors posted online lectures pertaining to synaptic transmission on a YouTube site. Flipped class sessions began with a ten minute practice test in which students were...
asked draw and label posted terms on a blank sheet” in order demonstrate understanding of the process of synaptic transmission. After the allotted time, the professors put the correct answers on a screen so that students could grade their work and then turn in their sheets. Subsequent to multiple practice tests and viewing online lecture videos, the students were asked to record a video in which they taught the lecture material to an imaginary class. Upon completion, students uploaded their respective video to the course Blackboard page, so that the instructors could watch the videos. The professors followed up on these efforts in the next class session by discussing their evaluation of the submitted videos. All students who turned in lecture videos received maximum credit.

According to the authors, their enhanced Flipped Classroom model had a positive impact on student learning. Most importantly, the grades in the course in which the model was applied were significantly higher than those in traditionally taught courses; grades rose from approximately 65.88% (not satisfactory for the purpose of degree requirements) to 74.51% (satisfactory). Additionally, a large majority of student survey responses noted that the techniques were helpful in one or more ways. In contrast, only four percent of responses viewed the techniques employed in the enhanced Flipped Classroom as not helpful in any manner.

Conclusions

According to the authors, the traditional approach to college learning places too much emphasis on student study outside of the classroom and, in doing so, fails to recognize that students often lack the skills to study effectively. In order to address this problem, the authors constructed an enhanced Flipped Classroom model that centered on the use two effective learning strategies: practice testing and self-explanation. Based on their study, the authors concluded that the two techniques had a statistically significant, positive impact on student learning outcomes. Moreover, student responses to surveys, as well as their performance, suggested that the techniques employed played an important role in producing the aforementioned improvements.

Applications

The utility of this article in improving teaching and learning at U.D.C. is limited by a lack of clarity and poor organization. Moreover, one might reasonably question just how enhanced of a model of the Flipped Classroom the authors have developed. This is true not only in the sense that the enhancement that they created amounted to an apparent total focus on practice testing and self-explanation, but also because the Flipped Classroom was employed in only a minority of their class sessions. That said, the article nonetheless offers some useful ideas. The strength of the article would seem to be the thought that it puts into student learning skills weaknesses. In this sense, the use of practice testing and self-explanation would seem to represent a beneficial approach to improving study learning skills at U.D.C. These techniques may not be particularly innovative to some faculty. For those who have not investigated or employed these techniques, however, they merit consideration, as does the article’s broader discussion of learning skills.
Citations of Interest


