

FLIPPED LEARNING IN AN UNDERGRADUATE STATISTICS COURSE: A CASE STUDY FROM THREE PERSPECTIVES

Matthew J. Zagumny, Sarah Jones, Chadwick Mathis, and Jovan Ferdinand
Department of Counseling & Psychology, Tennessee Tech University, TN, US
mzagumny@tntech.edu

We present a case study of a Flipped Learning (FL) undergraduate statistics course in psychological science from the perspectives of two students, a graduate teaching assistant (GA), and the professor. Take-home lessons as well as pros and cons are presented. Comparisons of student performance data across semesters are presented.

The current course was initially designed in Spring 2020 as an asynchronous-online course with video lectures and digitally submitted assessments. When in-person learning returned, the course was modified to a FL environment. Prior to participating in the weekly FL space, students are required to view online video lectures and take notes. During class time, twice weekly, groups complete practice exercises from their own data sets that provide scaffolding for later graded assessments. As questions arise during these practices, the professor identifies “teachable moments” for brief personalized conversations/lectures. The flexible, personalized nature of this FL approach is evidenced by the GA’s comment, “... the [FL] classroom has allowed multiple interactions with students, allows me to answer questions, provide further explanations ... and build trust” (Graduate Teaching Assistant).

To clarify and define FL, the Flipped Learning Network (2014) developed a formal definition of FL to include four pillars: (a) Flexible Environment, (b) Learning Culture, (c) Intentional Content, and (d) Professional Educator. The current FL course presents examples of how instructors can incorporate these four pillars in their courses. The positive results of these pillars are evidence in both of the undergrad students’ statements:

- As a non-traditional student, I have experienced most of my education from a didactic classroom; having the opportunity to be a part of a Flipped Classroom has been a unique practice in learning. I have found three major benefits to a flipped classroom and two concerns. Benefits: 1. Provides for a more balanced lifestyle, 2. Deeper connection with the material, 3. Greater community with classmates/colleagues. Concerns; 1. Potential for confusion with underclassmen coming from a didactic classroom. 2. Potential to unintentionally have a bias towards underserved communities. (Undergraduate #1)
- The flipped classroom approach allows me to rewatch the videos if needed to better understand the content; while allowing for innovative ways to reinforce the material that is being taught. A student needs to be self-motivated in an FL environment or they will be left behind. Watching the videos before going to class then conducting experiments in class, reinforced the material exponentially. (Undergraduate #2)

The effectiveness of this FL course is evidenced with a mix of qualitative and quantitative data. Qualitative data includes phenomenological interviews about FL course experiences from three different perspectives. Quantitative evidence includes comparisons between Flipped Learning sections of this course and traditional, didactic learning sections on both student homework and exam performance as well as course evaluation data.

REFERENCES

Flipped Learning Network (FLN). (2014). *The four pillars of F-L-I-P*.
<https://flippedlearning.org/definition-of-flipped-learning/>