Analysis of Attendance Trends at the Valparaiso University Hesse Center

Nate Izewski
Faculty Advisor: Professor Tiffany Kolba

Introduction
This project seeks to help the Valparaiso University Hesse Center optimize its resources to better support students in need of academic assistance. Located in Gallagher Hall, the Hesse Center offers help sessions and walk-in tutoring for students in mathematics, statistics, engineering, and physics courses. The data for this project was obtained from Laura Sanders, the Director of the Hesse Center. Before entering the Hesse Center, students are required to swipe in with their Valparaiso University student ID card and provide information about their visit. After receiving tutoring, they are instructed to swipe out. This process allows information such as the course and the time of day to be collected. By analyzing attendance trends based on the semester, appointment type, course, weekday, and time of day, the Hesse Center can be better prepared to meet the needs of students.

Attendance by Course
Each row of charts in this section corresponds to a specific set of courses, with mathematics and statistics courses first, followed by civil engineering, electrical and computer engineering, general engineering, mechanical engineering, and physics. Within each row, the graphs display the number of visits by course. The number of distinct students by course, and the average number of visits per student. The next three tables (or heat maps) combine both course and appointment type, to illustrate the total number of distinct students based on the semester.

Attendance by Semester
This section analyzes attendance by semester, showing visits for Fall 2018 to Spring 2022. The first graph shows the total number of visits to the Hesse Center based on the semester. Since some students may visit more than once, the second graph illustrates the total number of distinct students based on the semester. This section highlights how attendance varies by semester, and helps to identify trends that can be used by the Hesse Center in its continual effort to improve to better meet the tutoring needs of students.

Attendance by Appointment Type
The graphs above demonstrate that overall there are significantly more students visiting the Hesse Center for walk-in tutoring than help sessions. Help sessions are held during the afternoon. Yet 7-8 PM has the most walk-in appointments, as it may be beneficial for the Hesse Center to consider offering help sessions during that time range. The next three tables (or heat maps) combine both the weekday and the time of day, with darker colors indicating more popular time slots. For the heat map of all courses to the right, Thursday and Sunday from 7-8 PM are the most popular times, followed by Tuesday and Wednesday from 7-8 PM. Wednesday and Thursday from 2-3 PM are also popular times.

Conclusions and Future Research
Though enrollment has dipped, both Fall 2021 and Spring 2022 had a high average number of visits to the Hesse Center per student, showing that individuals continue to find the Hesse Center a valuable resource for academic assistance. Walk-in tutoring appointments have been more popular than help session visits, but a targeted approach to offering future help sessions may increase attendance. The Hesse Center can focus on training tutors for the courses that generate more students and consider offering help sessions for those courses. Future research could survey students to learn their views of the Hesse Center and understand why some students attend the Hesse Center once and do not return. Survey feedback could be used by the Hesse Center in its continual effort to improve to better meet the tutoring needs of students.