Technology Issues at a Technical University

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Abstract

    In our research we set out to discover what technology issues were most affecting students. After narrowing our topic down we decided to study the school computers in the library and students experiences with them. To collect data we observed students in the library from certain times and recorded data such as how many open computers there were, how many students were waiting to use a computer, etc. We also used volunteer sampling to get students opinions on their experiences with library computers.

    After conducting our research we noticed a few trends. It seems that for the most part students are content with their library computer use, except for a few minor problems. Some students stated that sometimes they have trouble finding a computer quickly and completing whatever they are using it for. Most students use the computers to print, and a few have had trouble quickly printing before class. The biggest issues students talked about was problems with Wi-Fi connectivity. Which could be a topic to study further in the future.

               Going forward with the research would mean studying a few key issues more closely. One of the directions the study could go would be more focused on students experience with using the library printers and how they can be improved. Another issue that could also be looked into would be the Wi-Fi on campus.

Introduction:

**Problem Statement:**

As a group we decided to do our research on technology issues faced by students in while in the library. Additionally we wanted to know why students used the library, how often they used the library, how many students use library computers, what technology issues have they faced at the library, and where can FSU improve their technology. Although most students have a good overall experience from FSU libraries, our study aims to highlight the issues students do face in order to improve their academic experience. In a study conducted by Nicola Yelland and Greg Neal (2013), they found that students with reliable computer access complete their schoolwork more efficiently increasing their overall course grades.

**Purpose of Study:**

This research is important because campus libraries are used by students of every major and field of study here at Florida State. If we take the time to study and understand the problems faced by students we will hopefully be able to make small changes that will make huge impacts in students academic experience. It is all to common to hear students complain about WiFi connectivity issues as well as other technology issues they experience on campus. Both students and Faculty use the technology resources provided by Florida State both to communicate and to complete school work. Finding the sources of this issues will not only benefit students but also faculty and therefore the university as a whole.

**Research Questions:**

* RQ1: What other issues are affecting students in the library?
* RQ2: What types of technology are causing a bottlenecks?

Literature Review:

**Technology and Students:**

Now a days education is infused with technology. Most all students will technology in some way, shape, or form to due any activity, assignment, or test. Students are required to due online research. They are required to type up an assignment and submit it online (Hendrck, 2013). Test are now electronic to help make grading easier. No matter what the school work is, it uses technology . Students are using computers and tablets to take notes in class (Cassidy, 2014). Why does this matter, and how does this affect our study? According to the PEW research facility there are many college students that do not own a computer. Only 59% of undergraduate student own a desktop and 88% of undergrads own a laptop. There are 73% of graduate students that own a desktop and 93% that own a laptop (Smith, 2011). This mean with an average of 40,500 student enrolled at Florida State University there are about 76% undergraduates and 21% graduates. This means that there are about 3,700 undergraduates that do not own a laptop and about 12,100 undergraduates that do not own a desktop. There are about 600 graduate students that do not own a laptop and about 2,300 graduate students that do not own a desktop. These students will need to gain access to a computer during their time at FSU. Since technology is such a big part of a students education, not being able to access technology could possibly have a big impact on a student being able to learn.

**Wifi Issue:**

Another issue is the Wifi on Florida State University's campus. According to the study conducted by the Pew Research Center there are 92% of undergraduate students and 88% of graduate students that connect wirelessly to the internet via a laptop or cell phone (Smith, 2011). This means about 28,300 undergraduate students and 7,500 graduate students on Florida State University's campus use the wireless internet. There are thing that we can do to improve connectivity issue. The article " A cross-layer approach for improving WiFi performence " talks about WiPoMu which is a way of improving Wi-Fi through creating multiple interfaces. WiPoMu is a way of creating multiple virtual Wi-Fi interfaces that allow for more simultaneous connections, therefore increasing effective bandwidth. Upcoming multi-gigabit Wi-Fi standards will allow for more bandwidth intensive tasks as well as increasing the speed at which less intensive tasks are completed. Hopefully these new technologies could lend a hand in helping solve campus Wi-Fi connectivity problems (Nguyen, 2014).

Method:

**Data collection Methods:**

We have used two main data collection methods. The first method we used was the survey method. The main reason that we chose this method is that it allowed us to gather enough data to support our claim. We were able to ask our specific, standardized questions to a large population. Our survey was web-based. The surveys focused on gathering data about our participants that is habitual as opposed to time sensitive.

Our second method was observation. We used observation because it allowed us to gather the data we seek ourselves. It has guaranteed results, whereas people may choose to not answer a survey. In contrast to the survey questions, observations allowed us to gather data about a specific moment in time at one of the libraries. It is important to have both this and the survey answers to have a more comprehensive view of how students are using the library computers.

**Population and Sampling Techniques:**

The population that we were seeking to gather information on was the students at Florida State University that used the FSU library services. We used non-random sampling techniques. We went to strozier libraries at set times of day for a week and had students answer our survey questions. Furthermore, at those same times we had another researcher go around and record data for our observation instrument.

**Recruitment Strategy and Process:**

For our recruitment strategy we had two researchers go to strozier at set times of day. One of them had our survey pulled up on a computer or tablet for students to respond to. The other researcher went around and recorded observation data such as how many students were waiting for computers, or what the average wait time was.

Analysis:

We found that overall the library as it is currently set up provides very well for a student’s needs. From our observations we found that no matter the time of day, there were always a few open computers. However, printing computers had a wait time to use them about half the time.

Looking at the data in this regard, the majority of the students who answered the survey stated that they used the library for printing. This was over the number of students who simply used it for school work by a factor of seven.

Based off of some of our coding of the open ended questions, we found that the library also did not meet student needs during peak times and when they needed something done in a short time span.

Consolidating our data, we found the times of peak use to be between noon and midnight. Furthermore, Seniors and Juniors appeared to be most affected by this, as they are the ones who are reportedly the main users of the libraries. Similarly, those who are majors in the following six fields of study also are impacted by this the most as they are the frequent users of the library. The fields are criminology and psychology, psychology, digital media, social work, information technology, and physics.

Discussions and Implications:

With all the data gathered we were able to interpret that during peak hours there was never really any wait for students to access the computers. This was far from what we expected because we always hear from people that they always have to wait to be able to log on to a computer. Now even though there was a high number of accessible computers there was a wait time for the printer. Printing was the main reason that students used the library. There are only two printers on the first floor that all students use. Many of the students in the survey said they have had to rush to class or to get things done because of the wait time for the printer.

Many of the students at strozier are also upperclassmen (Juniors and Seniors). You would expect the library on campus to be more congested with freshman since they are the higher percentage of students who live on campus. The busiest hours at Strozier peak at noon and stay consistent all the way until midnight. This means that upperclassmen and those who use the library between noon and midnight are the ones being most affected.

Limitations and Future Study:

In our study we were only able to study what happens in one library and only for the period of a few weeks. We didn't get information from busier times of years such as finals week. Furthermore we only studied a few different times of the day.

For future studies, it would be good to test various times of the day over the span of a semester to see how the current library system copes.

Conclusions:

The current system, as it stands works pretty well. It is efficient at most times, but during high stress times of the year it falls short. For everyday operations it only falls short with the availability of printers. These issues also seems to affect more upperclassman compared to underclassman. The biggest issue students seemed to mention was problems with Wi-Fi connectivity. Further research could be done on the topic of how to improve campus Wi-Fi.

If we were to go further with this research we would look into ways on how to improve students experiences with printing in the library.

Reflections:

Based on our findings, it seems that many students are content with the technology here at Florida State. The biggest issue students mentioned was having problems with the Wi-Fi on campus. It is also interesting that seniors/juniors and having more problems than freshman/sophomores.

One of the biggest challenges in our study was narrowing down our topic from technology issues at FSU. When we started our research we quickly realized how difficult it would be to study multiple issues in depth in the amount of time that we had.

Another issue was with data collection. We only observed one library for a week and at certain times. Also, we had some trouble getting people to follow up on the surveys we emailed them. To remedy this we just quickly asked them to take the survey on a cell phone and iPad that we carried around.

Resources Used:

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