Uses and Gratifications Final Narrative Project

The Evolution of Note Taking: A Study on Traditional Hard Copy Methods Vs The Emerging Soft Copy Method

Julie Berkovatz & Erica de Guzman

October 24th, 2011

Introduction

Being that we both have grown up in the midst of the digital age, we have seen many things evolve, develop, and go electronic; including the way students choose to learn in the classroom. It seems that more and more students are choosing to take notes via laptop, tablet, or smart phone, but with that said it also appears that just as many students are choosing to stick with the more traditional pen and paper way of note taking as well. For our research, we have studied the benefits that may attract students to either note taking method, as well as, researched the cons that may cause students to reject adopting either of the two. Finally, we discuss where note taking may be headed in the future.

The answer matters to us because through our research we have been able to come across several studies in which discuss the benefits on digital devices in the classroom. We also find this topic interesting to research and see if the findings in the studies are true and if there are better methods for students to learn in a college classroom environment.

Literature Review

We utilized six scholarly journals that explored the different note taking strategies in a college classroom. These studies focused on comparing hardcopy (pen/paper) note taking to softcopy (digital devices) note taking. Kay and Lauricella (2011) examined the benefits and challenges faced in a college classroom when students use laptops. The study suggested that softcopy note taking improved organizational skills but enhanced student distraction. Kibum (2009) is another study that focuses on the pros and cons of electronic note taking. In this study Kibum utilized several methods including surveys, case studies and participant observation. We compared Kibum's findings to Kay and Lauricella and found similarities with the benefits and disadvantages of digital note taking. We were able to take this information and contribute it to our own research. Both studies helped us familiarize ourselves with some of the key issues surrounding laptop use in the classroom as well as gave us direction when composing our own survey questions.

Next we researched articles that focused on how electronic devices are being integrated into the classroom curriculum. Baird and Fisher (2005-2006) investigate emerging social networking media like web blogs and wiki's and how they are able to do things like foster student engagement and enhance the overall student learning experience. According to Baird and Fisher (2005-2006), "Social networking media provides the opportunity to take the social interaction to deeper levels as well as

address learning styles rooted in digital technologies" (p. 8). Dick, Luber, and Mckinney (2009) also touch on how electronic devices are being used in the classroom by discussing how professors are now integrating electronics into their teaching methods through such things like audio pod casts and PowerPoint handouts. Through these studies we gained an understanding that electronics can benefit students in the classroom.

Through Colwell (2009) we familiarized ourselves with several different note taking devices and methods, which examines PDAs, graphic tablets and PCs, and their note taking benefits in the classroom. We then learned how these devices could be received by students in the classroom through Kay (2011). Her study tested student laptop usage in four categories: un-structured setting, structured setting, on-task usage, and off task usage. Kay proposes that while professors may find these technologies helpful in facilitating lesson plans, students on the other hand, tend to conduct themselves differently while using electronics. In most instances students took advantage of these electronic devices for other purposes in class besides note taking. With this information we decided to focus our research on un-structured, off task usage as our study focuses on student behavior.

Method

Prior to our research we hypothesized that soft copy note taking (electronic devices) would be used most often and be more favored by students. Our hypothesis was based on the fact that students are increasingly bringing various technological devices like notebook computers, tablets and PDAs with them to school (Kibum, 2009). Our assumption was also affected by Colwell's (2009) research which states that, "New digital ink technologies – writing on tablets connected to a computer – can impact and improve the instructor/learner dialogue, and student learning, where projected presentations and note taking are employed" (p. 35). We had assumed that because electronics are being utilized in the classroom by instructors through podcasts and PowerPoint lectures (Dyck, Luber, & Mckinney, 2009), students would follow suit and thus use electronic devices such as laptops and tablets to take notes. In addition, we hypothesized that electronic note taking would be more distracting then traditional pen and paper note taking.

H1: Soft copy note taking (electronic devices) would be used most often and be more favored by students.

H2: Electronic note taking would be more distracting then traditional pen and paper note taking.

We then collected data for our research through the distribution of 41 online surveys. Our surveys were created using the online survey-generating website, Surveymonkey.com and were composed of 10 questions, most of which were qualitative. Before distributing our surveys, we first piloted it by having a few friends give it a trial run. To ensure that our survey would provide us with quality feedback we asked these friends if the survey questions were easily understood and if the questions seemed appropriate for our study. After receiving positive feedback, we then utilized the popular social networking site, Facebook, for the advertisement of our survey. To help bring attention to our survey we commented on friends Facebook pages, emailed friends asking them to check out our survey, and informed the friends whom we saw in person about our research study and survey. To ensure that each survey stayed relevant to our study we advertised to only students who were attending college. Through the utilization of surveys we were able to gain data from college students of various backgrounds and majors on their opinion of hardcopy vs. softcopy note taking. We collected from 20 different majors. This method also proved to be fast and efficient as we were able to collect 41

completed surveys within a matter of a few days.

In addition, we conducted four short interviews (one was conducted with a college student who preferred hardcopy note taking and three were conducted with college students who preferred soft copy note taking). We found these students appropriate for interviewing as each attended college courses that required some sort of note taking. By interviewing both hardcopy and softcopy note takers we were able to obtain more in-depth opinions from both perspectives. Each interview was composed of at least 10 questions with two probes each. Again, we piloted our interview questions with friends to make sure that our interview was both relevant to our study and easily understood.

Because we ran into a gender gap with the surveys being predominantly female, and also many of our participants stated they used pen and paper as their main note taking method – We decided to interview 3 males, all of which used digital devises to take notes, and one female who used traditional pen and paper.

For our coding scheme we first coded the survey questions and divided them up by gender. Some important aspects that we analyzed from the surveys were: note taking method, major, year in school, distractions by soft copy note taking, distractions by hard copy note taking, and distractions by other's use of digital note taking. A "distraction" in this study can be defined as dozing off, looking out of the window, surfing the web or chatting online for non-academic purposes, listening to music, doodling, doing work for other classes, "zoning out" (not actively participating, listening, taking notes, etc.), etc. We also looked at the results from Surveymonkey.com and combined it with research from our literature review.

After the survey questions we coded the interviews separately, and looked for any patterns among them. We paid close attention to the pros and cons of their chosen note taking method and then compared it our coding scheme from the surveys.

Originally, we had considered utilizing participant observation for data collection as well, but we deemed this method un-necessary as it would be difficult to collect data as well as code. It would be challenging to judge a person's note taking behavior in the classroom.

Findings and Discussion

Out of 41 surveys (31 females and 10 males), 32 contributors preferred hard copy note taking, 4 preferred soft copy note taking, and five used both hard and soft methods, but favored the hard copy method. In our research we discovered that the majority of our participants preferred the hard copy note taking method (pen and paper) in class. Our purpose for this research project was to determine which note taking method, hard copy or soft copy, had greater popularity among college students.

In regards to our two prior hypotheses that soft copy note taking (electronic devices) would be used most often and be more favored by students and that electronic note taking would be more distracting then traditional pen and paper note taking, our surveys show that many students claimed to be "somewhat distracted" when taking notes with pen/paper, and were "often distracted" when using electronic devices to take notes. 17% of participants from our survey even stated that they were distracted "most of the time" when using the soft copy note taking method, resulting in their hard copy preference.

According to Kay and Lauricella (2011), "Other students' use of laptops was reported as the

number one distraction. Communication used for personal reasons via instant messaging or email was also a significant problem. Finally, using laptops for entertainment (games, movies, surfing the web) shifted students' attention away from learning during class" (Challenges, para. 35). When we asked our students if they get distracted when other classmates use soft copy note taking methods, the majority (70.7%) of participants claimed to be, "sometimes" distracted. When asked what they found to be most distracting by others soft copy note taking behavior, 32.4% stated surfing the web, 32.4% stated the sound of typing, 21.6% stated games, 13.5% stated online chatting, and interestingly enough 0% stated e-mail. In addition, during our interviews all of our subjects found electronic note taking devices more distracting than traditional pen and paper note taking.

In terms of the benefits of hard copy note taking; efficiency, retention and understanding of class material, and organization were seen as the most beneficial factors. For soft copy note takers; efficiency, retention and understanding of class material, and organization were also seen as the most beneficial factors of electronic note taking. It is interesting to see that the benefits are the same for both note taking methods and this coincidence would be fascinating to study further.

Through our four short interviews (one interviewee preferred hard copy method and 3 preferred soft copy methods) more benefits and disadvantages were brought to our attention. Our interviewee who preferred hard copy note taking mentioned that illegibility, ability to keep up with lecture, and hand cramping puts traditional note taking methods at a disadvantage. Coincidently our soft copy note takers mentioned legibility and ability to keep up with lecture as advantages of their note taking method of choice.

Our data collected from both our surveys and interviews were similar for the disadvantages, however, the interviews gave us more in-depth answers to some of the drawbacks when using electronic devices. One male participant stated, "Carrying around my laptop is a pain and sometimes I can't use my computer in class if the battery dies. Sometimes I don't have my charger or availability to an outlet." Another male stated that, "I always have to take the time to back up my notes with an external hard drive, because one time my computer crashed and I lost everything."

Some interesting findings were that, predominantly more females took our online survey. This may be contributed to the people we have as friends on Facebook or it may be that females are just more willing to take the time to do a survey. We also considered this factor to be a major limitation for our research. Along with this, we found it interesting that while we were able to obtain data from students in 20 different majors, we still did not see any real correlation between major and note taking method of choice. We had previously thought that maybe majors whose course work utilized electronics more often would produce students who preferred soft copying note taking over hard copy note taking. For instance, a graphic design student uses electronic programs in the classroom more often than an English student would and therefore the graphic design student would be more inclined to use electronic devices more often to take notes. However our research did not support this assumption. This finding may be attributed to the fact that students learn differently, no matter the major.

A last interesting finding is that some of the students who preferred soft copy note taking also found others who preferred soft copy note taking distracting. While looking at the data collected from the surveys and interviews, 85% of are participants who stated they preferred soft copy note taking methods or both methods stated that others who used a soft copy method in class was, "sometimes" distracting. Most of the participants seemed to find people who are surfing the web, chatting, using Facebook, and playing games to be distracting while in class. These findings also suggest that students

who bring laptops and electronic devices to class are not solely for note taking purposes, but for other personal means. A few participants did state that the sound of typing bothered them in class as well.

In conclusion, it seems that while technology is increasingly becoming integrated into the classroom, students still seem to prefer traditional hard copy note taking to digital soft copy note taking. While we understand that the integration of electronic devices into the classroom is inevitable, it is suggested that both professor and student need to know how to effectively use technology in the classroom. According to Kay (2011), "Neither the professors nor the students fully understand what is appropriate laptop behavior… this uncertain laptop culture has resulted in at least three pedagogical reactions from instructors: reject, ignore, or accept" (p. 33). (Kay, 2011). Baird (2005) and Fisher (2006). agree with the idea that instructors need to facilitate a classroom that is conscious of the neo-millennial student, a student who is familiar, if not dependent, on technology. We believe that an electronic device solely devoted to note taking and whose sole purpose is to aid in a classroom setting would be helpful to this study. In addition, teachers need to be more willing and conscious of how students are conducting themselves with the use of electronics in the classroom.

Limitations and Future Research

Some limitations we encountered during our research were not being able to have an equal amount of participants from both genders. Having predominantly more female participants for the survey could have skewed our results. Having the majority of our data come from the female perspective did make it more difficult to find any correlations between gender and note taking method preference. This would have been something we would have liked to look into. Now, we also realize that we did not ask some questions in our survey, which could have been beneficial to the study. One thing that would have helped us was to not just focus on note taking as the only use for electronics, since many more students seemed to use digital devices for pulling up PowerPoint, recording lectures, and researching items related to class material.

For future research it would be helpful to look into which note taking method seems to be more beneficial or effective for students learning in the classroom. Also, seeing that we saw specific similarities between benefits for both methods, for example both were seen as being efficient and helpful in retaining information, we would like to come up with a way to test which is more efficient, or which is more information retentive, etc. We expect that with time, technology will advance and become more available for the classroom environment – so constant research in the future on this is necessary to keep up with the advancements of technology. Also, as generations grow up and become familiar with technology a shift should be visible with the use of technology becoming more utilized and traditional methods becoming obsolete.

References

*Baird, D.E., Fisher, M., (2005-2006) Neomillennial user experience design strategies: Utilizing social networking media to support "always on" learning styles. *J Educational Technology Systems* 34 (1), 5-30 Retrieved from http://web.ebscohost.com.libaccess.sjlibrary.org/ehost/detail?vid=12&hid=122&sid=730170aa-eb94 4560-9339-c4750ed5b881%40sessionmgr115&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#db=ehh&AN=19651273

*Colwell, K, E., (2004) Digital ink and notetaking. *TechTrends:Linking Research & Practice to Improve Learning 48(3)*, 35-39. Retrieved from http://web.ebscohost.com.libaccess.sjlibrary.org/ehost/detail?vid=13&hid=122&sid=730170aa-eb94-4560-9339-c4750ed5b881%40sessionmgr115&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ== -db=aph&AN=13705692

*Dick, l, J., Luber, E, S., McKinney, D., (2009). iTunes University and the classroom: Can podcasts replace professors? *Computers & Education 52(3),* 617-623. Retrieved from http://www.sciencedirect.com.libaccess.sjlibrary.org/science/article/pii/S036013150800167X

*Kay, H. R., (2011) Unstructured vs. structured use of laptops in higher education. *Journal of Information Technology Education* 10, 1-9. Retrieved from http://web.ebscohost.com.libaccess.sjlibrary.org/ehost/detail?vid=17&hid=122&sid=730170aa-eb94-4560-9339-c4750ed5b881%40sessionmgr115&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#db=ehh&AN=60635505

*Kay, H. R., & Lauricella, S. (2011). Exploring the benefits and challenges of **u**sing **l**aptop computers in higher education classrooms: A formative analysis. *Canadian Journal of Learning & Technology, 37(1),* 1-18. Retrieved from http://web.ebscohost.com.libaccess.sjlibrary.org/ehost/detail?vid=15&hid=122&sid=730170aa eb94-4560-9339 c4750ed5b881%40sessionmgr115&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#db=ehh&AN=64391610

*Kibum, K. (2009) Requirements for electronic note taking systems: A field study of note taking in university classrooms. *Education & Information Technologies* 14 (3), 255-283 Retrieved from http://web.ebscohost.com.libaccess.sjlibrary.org/ehost/detail?sid=e5421a90-0ead-4107-aa62-4a43191abeaf%40sessionmgr104&vid=1&hid=127&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#db=ehh&AN=4352042