

Mobile technology in higher education

Technology



THE IMPACT OF MOBILE INFORMATION COMMUNICATIONS TECHNOLOGY ON STUDENT'S ATTITUDES AND PERCEPTIONS IN HIGHER EDUCATION

The use of the mobile technologies gives an excellent opportunity to connect the digital division that has an effect on so many students. At University of the Western Cape, we proudly possess leadership that leads underrepresented students. This article will show the efforts made to: change and construct positive attitudes toward the use of Mobile Information Communications (ICT), understand habits in computer usage, and do experiments to show which methods are more effective in usage of mobile technologies to improve academic performance. Our way was to make use of mobile technologies with differing form factors into the learning environment and find their impact on student insight and performance. Results, ways and evaluation tools were developed within a general framework to gauge the effectiveness of our approach.

The results on hand in this article will show how technology factor, use and student categorization has a positive impact on student's attitudes and views as well as their academic performances.

Introduction

When students' access to computers is limited outside of computer lab available, there was need that existed to promote the use of technology as an essential instrument that could be used as an integral part of the curriculum. For some a smaller group of students, studies showed that gaining access to computers and technology as a child growing up was not as vast as the other students. Hence, it was realised that there may be the fear factor at the introduction of technology to students

2. Enhanced understandings of computers and how they work and how information is exchanged was an

important concern toward using technology effectively. Our attempt addressed the need to correct and construct positive attitudes toward mobile technology and heavily promote the need to understand habits of computer usage by the underrepresented categories and which methods were most effective in using mobile technologies.

The approach we used was to highlight the necessity to improve the students' awareness of how technological tools (mobile tools in particular) can have impact on their academic efficiency and performance. As a result we developed a short course module that could be used in any discipline to gauge and positively strengthen the productive aspects of mobile technology. The idea was to give a certain group of student's mobile technology in various forms that they could take with them once the period class in this course ended (mobile class) period has ended.

Our enthusiasm drove us to make use of this opportunity to further study the impact of mobile computer ownership on user views and performance within the academic framework in that effort. First year student matriculation as a whole was relatively low and unbalanced where close to 50% of students left university before receiving a degree. Students go into the university with very little understanding as to: * What tasks a student accomplishes, the courses involved, and the technical aspects required. First semester is important in shaping if the student finishes as well as the pace in which the student finishes.

However, it was shown that educational understanding and construction has a larger effect on attrition than complexity of the subject or ability * . The preceding factors make first year students interesting candidates for the <https://assignbuster.com/mobile-technology-in-higher-education/>

mobile technology incorporation studies. The Technology The introduction of local and personal area networks such as Wi-Fi provided an affordable mobile solution to broaden learning and collaborating capabilities outside the classroom. Wi-Fi provided a platform that allowed the use of personal digital assistants (PDAs), tablets and wireless capable laptops by connectivity to the internet.

It also enabled students to create peer networks that made information shared and debated in groups Students that took part in the mobile course modules had three mobile gadgets to choose from: COMPAQ/HP Tablet PC TC1000, the Gateway notebook PC and HP IPAQ 5450 POCKET PC. These mobile devices had a customized version of the Microsoft Windows Platform made to processing power and memory allocations available. The Windows CE incorporated built-in a platform for the pocket touch screen, recognition of handwriting, file transfers via infrared, Bluetooth connection, and biometric security.

The Windows XP Tablet PC edition incorporated a system for the pen stylus, handwriting recognition, and remote presentation displays. All devices were capable of Wi-Fi connectivity. The device a particular student received was based on likes and availability. Preference depended on the main five categories: shape factor or size, processing power, memory space, data entry, and network connectivity. We classed the mobile devices in factors below to quantify which device the student would prefer if all devices were available.

They had to rate wither it was best, worst or intermediate. It was in terms of the shape, processing ability, memory availability, data entry ease and <https://assignbuster.com/mobile-technology-in-higher-education/>

network connectivity. The result was that the Tablet PC was the best trade off between sizes, data entry, processing power, memory, and connectivity. Students were most likely to take the tablet PC first. It also showed that the students who had tablet PC responded much positively to the mobile computing modules exercises. The wireless notebook was best described as a replacement for the desktop class machine.

The students got the devices at the start of the course and were allowed to maintain ownership till the end of the module. Ownership was a vital characteristic to give students freedom to discover the capability of the device and roam within the wireless factor outside the classroom. The convenience of the device depended on the application and type of projects. Assessment and Attitudes of Mobile Technology Module Design Incorporating mobile technology into the classroom needed a clearly distinct educational goal for the student to gain anything valuable.

The overall goal for this course module was to restrain the anxiety associated with introduction to new technology. This expectation was to allow the students with the technology to enhance investigative skills and collaborative skills. Students were originally advised to try the material individually to acquire core competency and ease with the technology. Afterwards, students were placed into groups to work together on complex tasks using the mobile technology. Designing of the course module, emphasis was ought to be placed on all aspects of learning.

According to Marzano and Pickering an excellent way was to follow the dimensions of learning structure. The model illustrated five dimensions of learning: * Positive attitudes and views about Learning * Processes involved

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in getting and incorporating knowledge * Processes involved in extending and enlightening knowledge * Processes involved in using knowledge significantly * Efficient behaviour of the mind Dimension one affected students' effort put in the course. The attitude and view of course material upon getting into the classroom may have had a dramatic impact on overall performance of the student.

Second dimension involved the students' capability to incorporate the knowledge into long-term memory. Therefore the student acquired the skills to use what they had learned to future courses or assignments. Extension of the incorporated knowledge encompassed the third dimension. The student applied reasoning processes to help them grow and improve the material. Fourth dimension involved the use of the acquired knowledge for solving problems, making decisions and analysis. The final one focused on traits development for the student that allowed critical thinking, creativity, and ability to regulate themselves.

After establishing the frame, strategies must be in place to blend in technology successfully into the course, record outcomes, and report results. The main focus in the design of this course module was to cover the first two dimensions. We wanted to avoid the fear, and encourage healthy attitudes and views that first year students have about technology and their curriculum over the long run. While students completed assignments, conducted research and worked together in teams, integrating and using the acquired knowledge is required.

The 3 objectives that were common in all activities that involved mobile usage technology: * Promoted an environment that allowed the student to
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judge the weaknesses and strength of computer ownership and impact of ownership on performance. Student appraised advantages and disadvantages of different mobile platforms in a classroom environment. The student learnt about computer/network organization. * Issued assignments that required extended hours to complete * Evaluated and assessed the most effective form of ownership that impacted the student's ability to complete an assignment.

BEFORE AND AFTER SURVEY * Had the students do an interactive recreational activity during off hours. * Encouraged students to find other areas that would encourage them to consider private ownership * Monitored usage statistics THE METHODS OR METRICS USED 1. Divided the students into teams that have mobile computational systems with varying types 2. Distinguish strengths and weaknesses of each platform in implementing a task. The students had to learn about computer/network organization and set-up different of simple wireless connections. THE METHODS OR METRICS USED . Had the students arrange simple fixed and wireless networks 2. Developed an initial level understanding of network protocol stack and connectionless networks Written Report 1. Had the students construct pages for peer to-peer and structure networking 2. Familiarized students with mobile computing skills and information sharing. The aims, outcomes and assessment methods shown in gave a high-level sight of material taught in the module. The tasks were made interactive in which the students had the ability to investigate capabilities of the technology further.

In class works were carried out in a co-operative learning style environment where the team size varied between 2 to 4 students. Outside class students

were encouraged to work together but all written assignments were collected individually. The students had to research and report on technology, implementation of the technology, and show its usefulness. The student learnt the complexities of the computer networking, device and wireless networks. Projects ranged from the use of pocket pc and/or laptops to create peer-to-peer networks over Wi-Fi or Bluetooth. An example

The students are investigated a mobile application by examining how one used a pocket PC device. An in class demonstration was done where teams of students were to explore the major components of a web based application. Afterwards they had to complete this task and report on advantages and disadvantages of the different forms . Also they were required to find these components, on the internet, and write a short report that had to be handed in electronically before the next class. Students also used applications e. g. virtual network computing to handle servers and desktops remotely .

Also some applications contained servers that allowed complex computation on the server to be reported on the device The survey analysis was divided into three categories: * Perception of students on mobile technology * Usage of mobile technology * Effect of mobile on retention Targeted Programs and Course Some first year courses had been designed to familiarize students with the faculty, our facilities and resources and projects that required group work. Four three-week sections of the courses involved 118 first year students.

Addition to using that course module to investigate some of their main curriculum courses, were made to infuse mobile technology into the different

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research organizations within the university. Thirty-six foundation students in the Law faculty used notebook and tablet PCs for six weeks to help in their research. These students studied various topics such as basic laws, family, corporate and ethics. Ten students, including 3 from Zimbabwe, in the Science faculty used tablet PCs for eight weeks to discover knowledge fusion and acquisition techniques.

The usage of the mobile technology to students in the different research groups varied depending on the nature of the research. For example, teams may deal closely with mobile technology using remote procedures needed technology or application development. Whereas, other teams may not use e-mobility technology for research but instead use them for information communication among members or work division. Perception on Mobile Technology * The most frequent trend in the analysis was that students felt mobile technology had higher relevance after having ownership and using the device than before. Ownership and using the device allowed the student to find relevance and apply the device to his/her environment. * Another trend taken note of is the relationship between time of ownership and the change that actually comes in student's perception. The Science and Law students' ownership period was close to three times longer than that of the other faculties' students. Therefore, in the end positive perceptions of students in other faculties changed approximately higher on average. However the perceptions of students in Law and Science changed more dramatically.

Positive perceptions for Science increased close to 60% and students participating in Law increased about 15% on average. Mobile Technology

Usage While finishing interactive tasks with the mobile device and discovering its capabilities, most students gained a sense for the usefulness of the device and mobile networking. For instance, while gaining knowledge about the technology and finishing a task using Bluetooth technology, the student found out that their cell-phone was also able to communicate via Bluetooth. The students were able to finish the tasks by joining his cell phone to network with other students using PDA's.

This technology raised the student's interest and they showed initiative to use the technology further. Focusing on the aspect of ownership students' views changed on buying a device for fun and convenience to that of buying for information access and research. Students who had longer ownership found means to use technology and contemplated more about using computational tools in their studies. STUDENT MAINTENANCE Attrition in faculties was discussed earlier in this paper. Theories within department's research indicated that more exposure to technology made the curriculum more interesting.

The prospect was to enhance the students, increase probability of finishing through their degrees. It was discovered that even limited use of Mobile Technology raised the students' interest in the more technological advancements to come. OTHER FACULTIES IN THE RESEARCH A modified questionnaire on computer attitude was developed to gauge on attitudes about computer value, enjoyment of the computer, studying habits, empathy, persistence and motivation, tendencies to be creative, school, mobile ownership, knowledge and importance for the first year courses. Results indicated fair amount of anxiety over all platforms.

Also in views and acquired knowledge showed that technology ownership had a direct effect on the first two scopes of learning in the presence of technological combination. Most frequent were the fluctuating results in enjoyment of computer, email usage, e-classroom application and usage of computers. Tablet PC users exhibited constant satisfaction across the board. We hypothesize that the tablet PC strikes the balance in portability, performance and functionality that the user used it more and was more productive with it compared to the rest used in the study.

This was especially applicable in urban areas where the student was tasked with selecting mobile computational devices to help counterbalance the many demanding situations placed by the bulk of communications, transportation, and social networks that surround them. Conclusion In this article, we showed a course specifically customised to introduce mobile technology to first year students. First year students were given a wide indication of device usage, connecting to the network, and low-level network design.

Our attempt to instil mobile technology into the module was highly successful in raising the student curiosity, view, usage, and interest in the curriculum. Results revealed that the prolonged time of ownership and student categorisation or maturity has a positive impact on our student's attitudes and views on mobile technology. In addition mobile forms that offer a balance between size, weight, system and performance seem to have the greatest effect on student attitude and academic performance