

# Mobile Devices to be applied as supporting tools in Research Methods Class for Undergraduate Students

Eteokleous Mikleia, P.A. College, P.O.BOX 40763, 6307-Larnaca, Cyprus  
Email:nikleia@cytanet.com.cy

**Abstract:** Mobile devices are becoming part of the educational environment. In this case, mobile devices role as supporting tools is under investigation. Specifically, undergraduate college students appear to have time-management and organization problems regarding designing, and constructing the research process and developing their research reports. Hypothesis is made that if a SMS alert system remind students for deadlines and other organizational issues related to the research process, the time management and organization problems will be addressed.

## Introduction to the Problem

Mobile technology integration has already started. Mobile devices are everywhere, and mobile learning (m-learning) has emerged to support the learning and teaching process. Mobile tools immerse in the learning environment as tools, some being purely assistive and supportive in nature and others are becoming increasingly intelligent. M-learning is defined as e-learning that uses wireless transmission and mobile devices such as PDAs (Personal Digital Assistants), mobile phones, laptops and tablet PCs. In other words, m-learning is simply learning that takes place with the help of mobile devices (Attewell, 2005; Dawabi, et al. 2004; Trifonova, & Ronchetti, 2005). In P.A. College (private college in Cyprus) undergraduate students attend two Research classes in subsequent semesters. The main aim of the overall course is to provide students with knowledge and skills as well as with an understanding and application of the research process and steps in constructing and carrying out a formal research report. Through these two modules, students are expected to take an exam, to develop and submit a research proposal, the various chapters of their dissertation in specific deadlines, submit a research study, and finally take an oral exam. Each academic year, while fourth-year students attend the Dissertation modules, confusion and anxiety exist. The above happens most probably because it is their first experience in developing and conducting research and it is less structured than a regular class. Due to the above, it has been noticed that students appear to have time-management and organization problems. It is revealed to have difficulty in organizing their research reports based on the guidelines given (organization problems) and in managing time, and putting in schedule the research process within the time limits given by the college (time-management problems). They consistently forget deadlines and have questions on numerous structural and organizational issues related to their dissertation. For example, the format/structure of the research proposal/report, what to study for their midterm, what to emphasize for the oral exam, the contents of each chapter, how to reference books, articles, internet sites etc.

## Purpose – Methodology

The current study investigates the role of mobile devices as supporting tools in Research Methods Class for undergraduate students studying for a degree in Business Administration. The study makes the hypothesis that by sending students pre-programmed messages regarding deadlines, paper format structure and guidelines; time management and organization problems are addressed. An SMS-based alert and reminder system was tested on 30 students from P.A. College. During the two month experimental period, pre-programmed messages sent to students' mobile phones: 1) as reminders for deadlines (midterm, research proposal first and final draft, literature review first and final draft and midterm date) and 2) as answers to students' requests on format and structure guidelines (research proposal and literature review structure, chapters and concepts included in the midterm, and reference secondary sources). At the conclusion of the 2-month experimental period, the analysis (a) tested the effectiveness of this innovative method and (b) evaluated the potential of introducing mobile technologies to support students in the teaching and learning process. This piece of research applies a case study design. Qualitative data was collected through in-depth interviews gathered from a pull of 30 college students. An interview protocol with semi-structured, open-ended questions was used to collect formal reactions and objective as well as to discuss their attitudes, experience with the SMS time assistant, and possible future expectations from system upgrades.

## Data Analysis and Major Outcomes

To begin with, students were asked to comment on their experience regarding the mobile use as a supporting tool in the teaching and learning process. The majority of them reported that they enjoyed the use of

mobile device for educational purposes. A student that appeared to be very excited after the experiment reported that "...this is perfect idea and a very interesting concept to be applied". Another one suggested that "...it widens the opportunities for mobile devices, since they can be used to support learning". Overall, positive reactions were recorded by the students which they mentioned that they really liked the SMS alert system. Specifically, more than half of the participants concluded that it was really helpful since it helped them to keep track with the deadlines and managed to submit their assignments on time. One said "I cannot believe it!! I was getting SMSs on what my research proposal should include. It is really great!!". Eleven students pointed out that they liked getting messages reminding them regarding deadlines as well as giving them guidelines. "It is a smart method to engage students in learning as well as enhance their performance since mobiles are currently used by almost all of the college students...", a student concluded. "I was really enjoying it when I was getting messages on how to reference secondary sources. It is a process that I hate doing from the first year of my undergraduate studies. I was using the mobile phone, as soon as I had a question on how to reference for example an internet site and the answer was there for me in zero time". The majority of the students mentioned that as result, when they had meetings with their supervisors they did not spend time on organizational problems and time scheduling rather than they focused on the content of their dissertation. This was really important since they emphasized more on getting effective and corrective feedback on the content which it was significantly improved in comparison to other years. Finally, they reported that they were feeling less confused and stressed regarding the dissertation process. To conclude, the effectiveness of this method evaluated based on the following parameters: the fact that students managed to meet the deadlines and submit the required materials on time, the fact that they had more time to spend with their supervisors on getting feedback on the content of their dissertation and not on time scheduling and organizational issues and last but not least the fact that the anxiety and stress level was reduced.

Only six students appeared to be skeptical regarding this approach. They mentioned that they do not feel that mobile devices are appropriate for educational and teaching purposes. One of them said that as supporting tools it might be possible to be used in education but not for any other reason, for example directly in the teaching and learning process. One of them said "...I was getting frustrated when I was getting a SMS on when I have to submit my research proposal. In some causes the messages made me become even more stressed ". Three of them said that they send SMS to the server to give them guidelines on what to study for the midterm and they found it really difficult to understand what to read. Two of them pointed out that it might be more effective to use PDAs to do this experiment. A student concluded that the major problem regarding mobile phones is that not much information can be given through a SMS.

Given the overall positive feedback from students, it appears that there is a great potential of introducing mobile technologies to support students in the teaching and learning process. Learning through mobile devices seems to be promising. Given the positive reactions and encouraging results from the study a more sophisticated system applying mobile devices is its way to be developed to function as a tool for students that directly and indirectly influence the teaching and learning process. Further, more experiments will be designed to examine the effectiveness and potential of mobile devices to be directly used in the teaching and learning process and not only as a supporting tool. Studies of this kind are still rare, since this field is relatively new. It provides the foundation for further development and expansion of mobile devices integration in higher educational systems.

## References

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