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To Link this Article: http://dx.doi.org/10.6007/IJARBSS/v9-i9/6465 DOI:10.6007/IJARBSS/v9-i9/6465

Received: 19 July 2019, Revised: 05 August 2019, Accepted: 29 August 2019

Published Online: 08 September 2019

In-Text Citation: (Ariffin et al., 2019)
To Cite this Article: Ariffin, S. A., Panessai, I. Y., Ibrahim, A. B., Abas, A., Daud, F., & Anshar, M. (2019). Preliminary Insights on Investigating Existing Mobile Ethics through Mobile Learning for a Local Context. *International Journal of Academic Research in Business and Social Sciences*, 9(9), 1312–1319.

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Preliminary Insights on Investigating Existing Mobile Ethics through Mobile Learning for a Local Context

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Abstract
With the advancement of technology, considerable effort has been made to implement the utilization of mobile technology in learning, especially in STEM related subjects. However, this raises another issue in that the question of ethics when using these kinds of technology has not been addressed for the local context. Based on the current research, participants are concerned about the ethics of mobile technology. Thus, this research is conducted to investigate and identify the mobile ethics of students through mobile learning in a local context. The methodology used in this research is largely qualitative with students from a local university and analysed using thematic analysis. The preliminary findings shed light on the issue of ethics in mobile learning for the local context.

Keywords: Mobile Technology, Stem, Themes, Mobile Learning, Ethics, Local Context

Introduction
Nowadays, university students have at least one mobile phone in their possession. According to Ariffin (2014), there is considerable concern about mobile ethics in the classroom, such as the misuse of mobile phones, plagiarism, breach of security, and others. Also, limited research has been conducted concerning mobile ethics (Ariffin & Dyson, 2013). Consequently, this research helps create awareness about mobile ethics and helps towards implementing mobile learning in the classroom (Ariffin, 2016a; Ariffin, 2016b; Ariffin, 2017; & Ariffin, 2018a). Based on the guidelines set by the Ministry of Education (2009), students are prohibited from taking any mobile device into the classroom. In the eyes of Malaysians, mobile phones are considered to be objects that will disturb the class if mishandled or used inappropriately.
Hence, many academics prefer to ban or minimize the use of mobile phones in the classroom (Ariffin & Dyson, 2013).

**Mobile Learning**

Mobile learning or mLearning enables learning that occurs across time and place as learners apply what they learn in one environment to another context (Kukulska-Hulme & Traxler 2007; Sharples, Taylor & Vavoula, 2010). Meanwhile, the phenomenon of using mobile devices has an effect on learning and teaching (Ariffin, Yatim, & Daud, 2019; Ariffin, 2016a; Ariffin, 2016b). A wide variety of mLearning usage is evident in institutions of higher learning in Asia (Dyson, Wishart, & Andrew, 2017); and, day-by-day, mobile learning usage in education is increasing in Malaysia. The transformation includes from exclusively higher income to lower income use of mobile devices for learning (Embi & Nordin, 2013; Nordin, Embi, Norman & Panah 2017). Thus, mobile learning can be embedded in subjects (Ariffin, Ismail, Yatim, & Sidek, 2018a; Ariffin, Ismail, Yatim, & Sidek, 2018c), such as STEM related subjects while creating an awareness concerning the ethics.

**STEM**

Integrative STEM education is about the teaching and learning of one or more subject areas in schools or any education institution. According to Labov, Reid and Yamamoto (2010), and Sanders (2008), STEM is the purposeful integration of the various disciplines used in solving real-world problems that involve science, technology, engineering, and mathematics as one unit. In this study, STEM could be enhanced by having mobile devices (Traxler & Crompton, 2016) for the students where the ethical issues have been researched in developed countries (Wishart, 2018).

**Lack of Mobile Ethics Study**

Although many ethical concerns have been raised from all levels of the educational system, the study of the ethics involved is still under researched (Andrews, Dyson & Wishart, 2013). The misuse of mobile devices in the classroom is not new, and the ban on mobile phones in the classroom was introduced because of the disturbance during class sessions. Mobile devices in the classroom raises many concerns, especially among academics who, often, do not view mobile phones as being educational devices for use in the classroom (Ariffin, 2014). One of the reasons why mobile ethics have not been thoroughly researched is because the ethical concerns are difficult to understand and may differ among academics and other users (Spinello, 2013).

**Methodology**

This research is largely qualitative with an emphasis on the deeper meaning of data (Silverman, 2013). This study assumes that students already own their own mobile devices and have created some content using their own mobile devices (Ariffin, 2014). The study involves focus group discussions recruited voluntarily. The data have been analysed using NVivo and a thematic analysis approach (Braun & Clarke, 2006).

**Focus Group Discussions**

Initial focus group discussions were conducted to collect data on their current perspectives and experiences of mLearning for STEM. The students were from five focus groups with a total
of 34 student participants. The students’ ages ranged from early twenties to twenty-five years old. Focus group discussions were selected as an appropriate method for data collection from the students as local students are less shy when discussing in groups (Ariffin, 2014) compared to being asked questions individually. The students were from a wide range of STEM subjects (Ariffin, Yatim, Zaibon, Ali, Ibrahim, Sidek, & Muttalib, 2018b); as demonstrated in Table 1. In this study, semi-structured open-ended questions were deployed, such as:

- What do you understand about ethics in mobile learning?
- What are the examples of ethics in mobile learning in your daily life experience?
- Describe your existing experience using mobile devices for learning?

| Table 1. Student Focus Groups |
|-------------------------------|
| Course Code | Subject | Course Nos |
| 1. Software Engineering | FG1 | Discrete Maths (FT1) | AC10 7 |
| 2. Software Engineering | FG2 | Computer Organization (FT2) | AC10 8 |
| 3. Chemistry | FG3 | Biology (FT3) | AT11 7 |
| 4. Robotics | FG4 | Robotics (FT4) | AT47 6 |
| 5. Computer Design | FG5 | Design (FT5) | AT47 6 |
| Total | 34 |

Note: ‘FG’ = Focus Group, for example FG1 = Focus Group 1

Findings Directed to Lack of Awareness about Ethics in Mobile Learning
In this study, the emerging themes generated from the data are demonstrated in Table 2, which shows that there is a lack of awareness about ethics in mobile learning.

| Table 2. Emerging Themes |
|---------------------------|
| Themes |
| 1. Ethical Concerns about Using Mobile Phones inside the Classroom |
| 2. Self-Regulated Ethics in Using Mobile Phones |
| 3. Banning of Mobile Phones Inside the Classroom |
| 4. Emergency Use |
| 5. Unsure about Ethics concerning the use of Mobile Phones |
| 6. The New and Old Generation Difference about using Phones |
| 7. Unreliable Sources |
| 8. Cheating in Exams |
| 9. Misinterpretation of Social Media |

Lack of Awareness of Ethics about Mobile Learning
Some participants informed the researcher that the ethical considerations were subjective while others were unsure about the implications. Self-regulated ethics was one of the significant approaches revealed in these findings.
Ethical Concerns about Using Mobile Phones inside the Classroom: There are growing concerns about how mobile phones can be used appropriately inside the classroom. All the focus groups, FG1, FG2, FG3, FG4, and FG5, expressed their concerns. An example:

“...try to focus on studies and don’t play with the mobile phone while the lecturer is teaching out front.” FG2

Self-Regulated Ethics in Using Mobile Phones: Participants from FG1, FG2, FG3, FG4, and FG5 highlighted how they controlled their usage of mobile devices. An example:

“...we must lower the ring tone or just turn it off; show some respect.” FG2

Banning of Mobile Phones Inside the Classroom: There are certain conditions where mobile phones are not allowed to be used. An example:

“During my form 1 to form 5 we were not allowed to bring the phone, but we still brought it secretly so when we had a spot check we hid it.” FG1

Emergency Use: Under special circumstances, academics allowed the students to use mobile phones for emergency use. An example:

“... in emergency cases so their parents can contact them.” (FG4)

Unsure about Ethics concerning the use of Mobile Phones: Some students are uncertain whether there are any rules for them to follow in learning using mobile devices, such as mobile phones, especially in the use of mobile phones for STEM. An example:

“Actually, I don’t really understand about the ethics.” FG2

Disconnection of Students from Social Life: Part of the ethical concerns concerning the use of mobile phones inside the classroom is that students can become disconnected from social life with other people. For instance:

“Mobile phones can cause us to become anti-social, we associate less with society around us.” FG1

The New and Old Generation Difference about using Phones: Ethics, and behaviour also differentiate the new and old generation. For example:

“Our parents teach us not to use the phone while eating.” (FG2)

Unreliable Sources: Ethics on copyrighting is also unclear for some participants, as highlighted by a participant:

“If we want to write... better we ask their permission before we share.” (FG3)

Cheating in Exams: Participants expressed their concern about cheating during exams. For instance, FG1 and FG3 mentioned that extra precautions are necessary during exams to prevent students cheating.

Misinterpretation of Social Media: Participants highlighted that social media can be a platform to disseminate false information using mobile devices:

“Taking a picture is allowed but not to send improper content, which may go viral.”

(FG1)
Discussion
In Malaysia, there are limited policies for mobile learning. In this study there were ethical considerations about using mobile devices. This correlated with the UNESCO report by So (2012), who claimed that mobile learning policies are not yet implemented in Malaysia at all institutional levels. Students agreed about the significance of ethics being very important, as, for example, mobile phones have the potential to cause distraction. Self-regulation was one of the most significant aspects to come out of this study (SKMM, 2012). In order to realise mobile learning ethics’ policies in the universities, awareness of the ethical considerations must be in place. Therefore, further research needs to be conducted pertaining to ethics in other local contexts, particularly at institutions of higher learning.

Conclusion
This research showed that although university students could potentially use mobile devices, such as the multimedia functions of mobile phones for developing content for STEM, proper ethical guidelines must be embedded. For instance, ethical guidelines for mobile learning could be introduced, particularly in learning STEM at the Malaysian universities because these are currently absent. The next step will be to investigate the student generated activities and the ethical factors that could impact the implementation in the local context.

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Acknowledgement
The authors would like to express their appreciation to all the participants. The appreciation extends to the Ministry of Higher Education Malaysia via UPSI, which provided the FRGS grant code: 2017-0074-107-02, and the recent grant from GUP-2017-061 for the involvement of medical students from UKM in this research.

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