

Developing A Mobile Application to Observe The Teaching and Lectures of Practice Teachers

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Abstract

The digitalisation of education has changed the landscape of education system in order to move along with the ever-evolving trend and Malaysia Digital Economy Blueprint. This research aims to facilitate the observation process of practicum teachers and to enhance the ability of school administrators as effective observers. The impact of using SKPMG Standard 4 Mobile Application in the observation process of practicum teachers was studied. There are four people involve in an observation and for this research, three were chosen as respondents which include headmaster, senior assistant of academic affairs and mentor teacher. The sampling was done based on their involvement in the observation process. This is a qualitative research and the data were validated through triangulation method. The structured and semi-structured interviews were carried out and the data collected were classified into five main themes in line with research conceptual framework that used ADDIE model in decision making process. The finding of this research shows that i-Cerap Application could help to gain the interest of observer because it is easy to use, entertaining, and has multimedia elements. Other than that, through this research, it is also discovered that the readiness to use i-Cerap is related to knowledge, skills, and attitude towards mobile applications like i-Cerap. Based on the findings, it is also concluded that the aspect of perception, relevance, confidence, and satisfaction is related to the effectiveness of i-Cerap. Concerning that, it is hoped that stakeholders like Ministry of Education Malaysia and Institutes of Teacher Education could take fast action in sharing expertise with agencies of teacher training to train and grow observers with digital literacy who could achieve the aspiration of Digital Education Policy.

Keywords: Mobile Application, SKPMG-2 Standard 4, Observer, Observation

Introduction

The Appsheet application is one of the many mobile applications that has the capacity to function across any device, be it in the Android or Apple operating system. In line with the digitalization of the educational system, filling the form of the Standard 4 as required within the 2nd Wave of Malaysian Education Quality Standards (SKPMG2) should be done digitally.

Through the digitalization of the forms used in *SKPMG2* that are produced through the app, Appsheets, information regarding said forms can be downloaded within any compatible device, which then can be used anytime and anywhere. This can be realized, as long as the device has internet connection (Noorhisham, 2022). Appsheet can also store the related documents or information online through the application, Google Drive. All updated documents and information are stored automatically after every modification or updates done on the Google Drive. This mobile application is constructed using Google Sheet that lets information be stored in the form of documents that can be formatted to other formats, such as PDF or Excel and can also be downloaded at any time.

According to Glickman (1990) knowledge, interpersonal and technical skills are needed for an observation to be effective. The quality and effectiveness of the teaching and learning can be improved through well-constructed strategies which stems from the response and findings of the observation that is being carried out effectively (Empi, 2005). By carrying out the teaching and learning observations that uses instruments from the Standard 4 within *SKPMG2* can be as an indicator for curriculum excellence in school (Nida et al. 2022). An evaluation system with high validity and easy for the evaluator to use are needed to ensure the observation and evaluation quality is up to par with what is required by the *SKPMG2* that is set by the Ministry of Education (MOE).

Literature Review

The application, *Dua and Zikr for Haj (MD24H)*, Bachelor of Science Thesis (Information Technology) *Universiti Utara Malaysia* 2012 by Ahmed Sheikh Abdullah al Aidaraos is a research reference that supports the use of this technological application. This research is related to the development of application that contained prayer guides and zikr for pilgrims. This application is used mainly on the Android platform, where this app's prototype is developed through the J2ME Prototype which consists of prayer and zikr audio that is enunciated in the Arabic language and its translation is in the Malay language. This application allows users to read the zikr and prayers while performing Hajj straight from their mobile phone (Al-Aidaroot, 2012). However, it takes an expert in the field to utilize the means in developing it.

The next research is the Usability of Mobile Apps in the Science course, Technology and Engineering in Islam (M-istech) at Malaysia Polytechnic by (Yusoff and Romli, 2018). This research is conducted to test the usability of simple applications within the Science, Technology and Engineering courses in mind. This simple application was developed by using Adobe Flash CS6 for the Android platform, which the application is based off the instructional design model, ADDIE. This model consists of five phases, which is analyzing, shaping, developing, implementing and evaluation. The research findings shows that the lecturers and the students both are satisfied with the application that was developed. (Fkrudin & Badruddin, 2018). This method also is seen as difficult and this development requires experts on matters of developing the simple application.

Suzeren et. al (2019) also carried out research that touches on the Usability and the effects of Mobile Application in *Mahasiswa Mesra Week* that was recorded in the Student's Personalia Journal 2211) 93-101. This research was carried out to evaluate the usability and the effects of mobile applications 'MESRA@UKM' in *Mahasiswa Mesra Week (MMM)* 2018 that was

developed for the students of the Faculty of Technology Science Information UKM. The findings showed that the students were very satisfied with the application that was developed and it can potentially become the primary medium for the delivery of information, guides, program and bus schedule, as well as a platform for students to find answers for their questions.

Tasir & Ahmad (2021) also carried out research to identify the implication of using the mobile application in improving the Malay language literacy skills of Learning Problem Special Education (PKBP) students. The use of the app called '*Belajar Membaca*' within the learning of the PKBP students shows favorable outcome in terms of their achievement and their Malay language literacy skills as well as positive changes to their behavior. This is supported by the research made by Zakaria et. al (2019) which also carried out research acceptance in MobileApps MARDI. The MARDI mobile application is the latest knowledge sharing platform that adapted mobile application technology which gave users the necessary facilities which can be used anytime and anywhere especially for farmers and agriculture entrepreneur.

This study shows that there is an urgent need towards mobile applications and users have the knowledge and awareness as well as a very positive take on mobile applications. A study by Park and Lee (2012) reported that on average, their respondents have around 80 mobile applications on their mobile phone, whereas 16% of those applications are used towards learning or at least related to management. However, overall, the true potential of mobile apps in mobile devices as a platform, a source of learning enrichment or as a way managing students' activity may still need more improvement. Al-fawareh & Jusoh (2014) also stated that although mobile devices have a lot of potential to be used optimally for learning and management, the level of usage for that matter are still lacking (Al-fawareh & Jusoh, 2014). This finding indirectly gave room for more thorough research to be conducted in understanding the usage patterns of mobile devices among the university students, in case more mobile applications are to be implemented more proactively and comprehensively.

Problem Statement

Working environment in school that demands a variety of human resources make matters that needed focus as well as high level of commitment more challenging. This includes the headmaster or headmistress as well as the senior assistants as observers which are burdened by many administrative and management works (Yusoff & Faekah, 2020). This gave us a clear picture regarding the quality of work that is burdened by a wide scope of tasks. Apart from that, there are also perceptions which says that observations carried out was to meet bureaucratic demands to complete the school file only (Antin & Norizah, 2018)

There are also times where teaching and learning observations that was conducted failed as an instrument to help teachers improve on their professionalism and excellence because errors were present during transfers of observation findings from hardcopy forms to softcopy evaluation forms within Microsoft Excel (Rusdin & Ramli, 2019). The time consumed during data transfer from hardcopy to softcopy caused the feedbacks of the observation for the teacher that was evaluated being abandoned entirely by the observer or evaluator (Pressreader, 2020). Due to that, the present of mobile applications may the process of storing the data more easily, faster and more precise.

Study Importance

This mobile application can be use and distribute to all of the teacher counsellors, primary school senior assistants in all of Sarawak. The data inputted can also be accessed anytime by practicum teachers to be used as reflections and to improve on what they lack. Other than that, this mobile application can help provide practicum teachers with easy access to a variety of teaching resources, including lesson plans, teaching aids and teaching strategies.

This study is crucial in improving communication and cooperation amongst practicum teachers, teacher mentors and academic teachers. This includes discussion forums, chat features, or collaborative document editing which allows practicum teachers to acquire guidance, share their experiences and receive feedbacks. Apart from that, this mobile application can help the practicum teachers in collecting and analyzing data that is related to their performance and progress within the observation and teaching session.

This data-based approach can inform the outcomes of their teaching and help the practicum teachers to identify their students' development. Therefore, integrating mobile applications into their practicum can help provide future educators to use technology more effectively within their classroom. It helps them to keep up with nowadays technological trend and tools that maybe faced by students who are within the contemporary learning environment.

Research Objectives

- i. Exploring the readiness of developing mobile apps for teaching and learning observation and facilitation for practicum teachers.
- ii. Testing the usability of the mobile apps for teaching and learning observation and facilitation for practicum teachers.

Research Methodology**Research Design**

This study is implemented through the use of the qualitative method of approach. This approach was selected because it can produce more detailed and deeper findings related to emotion, opinions, and experiences of the respondents (Rusliwa, 2005).

Research Sample

The study samples were determined based on purposive sampling. Respondents were selected among the four school administrators that was involved with the observation. However, only three were taken as samples for the role of respondents. That is the headmaster/headmistress, senior administrative assistant and a teacher mentor.

Research Instruments

Semi structured interview questions were prepared to evaluate the level of readiness and usability of the Mobile Application. To test the readiness and usability of the Mobile Applications, these interview questions were divided into several different themes. Through this method, the flow of information given by the respondents would not divert from the problem that was raised within the study (Puvuneswary, 2008). The advantages of implementing an interview were that it eases the researcher to explain the purpose of each question to gain more clearer answers from the respondents. The sincerity of the respondents in giving the answers can be seen through the face-to-face discussions, avoiding

misinterpretations and misunderstanding. This can create a positive relationship that allows a more valid and trusted collection of information.

Methods of Data Analysis

The findings are analyzed narratively based on audio recording and the interview transcripts. Transcription data is imported in to the NVIVO 10 software for recording and analyzing purpose using thematic analysis. The NVIVO analysis will fulfill the study's objective in identifying the readiness and usability of the mobile application i-Cerap, based on the set themes following what had been determined by the research objective. The selected themes were referred to assigned experts for verifications. Research subjects are given codes such as: P1 (Headmaster/Headmistress), P2 (Senior Administrative Assistant) dan P3 (Teacher Counsellor).

Mobile Application i-Cerap Development Design

The ADDIE model was selected in developing this mobile application for teacher observation due to its model design that emphasizes repetition that was done on every phase. Every phase is interconnected with one another. If a phase is unable to be fairly implemented, the process can be repeated until it is implemented successfully. The ADDIE model is actually an acronym and its stands for: Analysis, Design, Development, Implementation, and Evaluation. The diagram below shows the flow of work in developing the mobile application.

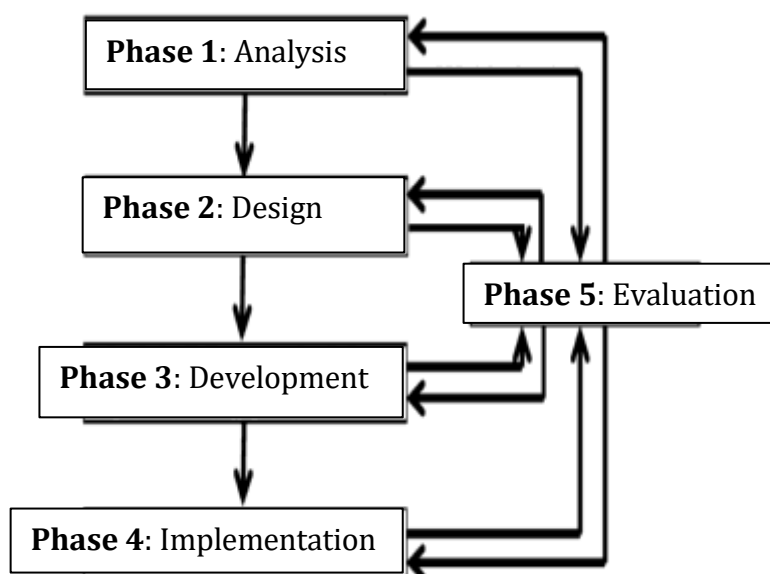


Diagram 1: Development process based on the ADDIE Model
(Gagne et. al. 2005)

Cerap Mobile Application

The development of the mobile application, i-Cerap is developed with the use of another application called *Appsheet*. The first phase began through analyzing the users need in order to identify the application's main requirement based on that need, including the readiness of the observer. Phase two involves the design of the application based on the five aspects within the Standard 4 of the SKPMG2 form as well as the result of the element of the menu placement, object and the presentation interface. The third phase of the application

development is the construction of the contents of the Standard 4 of the SKPMG2 form, which comprises of 5 aspects, which are:

- i. Aspect 4.1: Teachers as planners
- ii. Aspect 4.2: Teachers as controllers
- iii. Aspect 4.3: Teachers as guides
- iv. Aspect 4.4: Teachers as motivators
- v. Aspect 4.5: Teachers as evaluators
- vi. Aspect 4.6: Students as active learners

All of the content of the application are stored within a selected website that was already prepared in Technology Web 2.0. Phase three involves the development of a prototype application based on the design that was already developed completely. The main emphasis of the application covers six aspects from the Standard 4 SKPMG2, scoring method and handling of the teacher's overall observation score for every observation implemented. Observer or evaluator can refer back and guide on before, present and after the observation implemented anywhere and anytime.

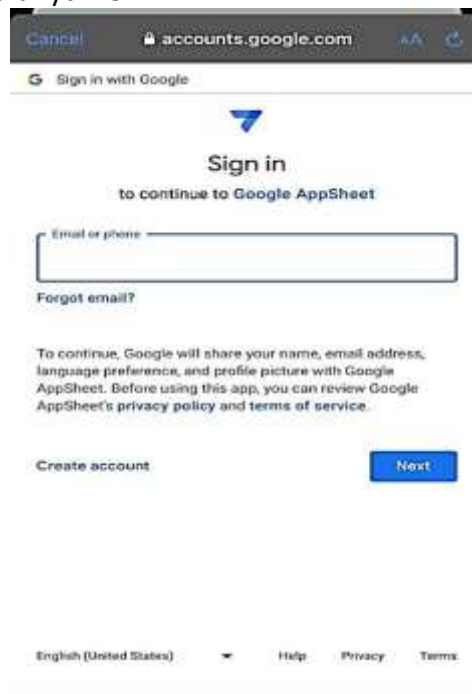


Diagram 1: Appsheet.com is used to develop the mobile application, i-Cerap

The screenshot shows the 'PENARAFAN Form' screen. It features a yellow header bar with a back arrow and the title 'PENARAFAN Form'. Below the header, there are several input fields: 'NAMA *' with a dropdown menu showing 'Mohd Zul Zamri bin Hassim', 'NO. KAD PENGENALAN *', 'PENCERAP *', 'TARIKH PENCERAPAN *' with a calendar icon, 'JENIS PENILAIAN *' with three buttons ('KENDIRI', 'PENCERAPAN 1', 'PENCERAPAN 2'), 'MATA PELAJARAN *' with a dropdown menu, and 'KELAS *' with a dropdown menu. At the bottom, there is a small text line '4.1.1 Menyediakan RPH yang mengandungi...' and two buttons: 'Cancel' and 'Save'.

Diagram 2: Main Display Screen

The screenshot shows the '4.1.1 Menyediakan RPH yang mengandungi...' screen. It features a yellow header bar with a back arrow and the title '4.1.1 Menyediakan RPH yang mengandungi...'. Below the header, there are four radio button options: 'AKTIF', 'SEDERHANA AKTIF', 'SEDERHANA PASIF', and 'PASIF'. At the bottom, there is a 'Done' button.

Diagram 3: Score Filling Screen

Diagram 4: Main Display Screen



Diagram 5 : Score Filling Screen

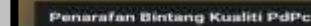


Diagram 6 : Star rating for overall pdpc



Diagram 6 : Star rating for overall pdpc

This study is analyzed narratively based on the study's objectives. In order to improve on the validity and trustworthiness, data integration had been carried out using triangulation for data compatibility of the interview and the set themes.

Mobile application development readiness in observing the teaching and facilitation of practicum teachers

This study identified three themes that were related to the readiness of the mobile application development in observing the teaching and facilitation of practicum teachers, which is;

- 1) Readiness in terms of knowledge in using Mobile Application.
- 2) Readiness in terms of skill in using Mobile Application.
- 3) Readiness in terms of behavior in using Mobile Application.

1) Readiness in terms of knowledge in using Mobile Application

Based on the findings of the semi-structured interview conducted, it shows all of the research participants stated that they have the knowledge needed in using the mobile application in observing the teaching and facilitation of practicum teachers. This is because three of the observers states that they have a clear understanding of the use of mobile applications and had already have knowledge to improve on that. Apart from this, P1 also stated that he/she is ready to share his/her knowledge with other teacher observers about the use of mobile applications. All of the respondents also express agreement that they would also need to improve on their knowledge regarding the use of mobile application.

.... saya seronok jika ada kursus-kursus tentang aplikasi mobile.... bolehlah saya belajar lebih...bagus idea ini...

.... I would be delighted if there are courses related to mobile applications... I can learn more about it...this is a great idea...

[P1]

.... sekarang ini pihak sekolah arahkan lebih banyak gunakan teknologi dan menggalakkan pembudayaan inovasi...jadi bagus kalau ada kursus aplikasi mudah alih ini.

.... school authorities nowadays asked us to use more technology and encourages the culture of innovation...then it is a good thing if there are courses regarding mobile applications...

[P3]

2) Readiness in terms of skill in using Mobile Application

All of the respondents stated that they have been skilled in using mobile applications since long ago. Apart from that, all of the respondent also states that they have the skills in using mobile applications simply and easily.

.... ikut peredaran zaman...sekarang kalau tak tahu guna Aplikasi telefon...susah..mahu tidak mahu kita perlu mahir..

Maklumat di hujung jari

.... flow with the passage of time...nowadays, if you don't know how to use mobile phone applications....it is difficult...like it or not, we have to be proficient...information rest at the tip of our fingers....

[P2]

....mula-mula dulu susah..semua perlu bantuan nak download... Sekarang boleh buat sendiri...tunjuk ajar anak dan rakan guru juga... Mudah rupa-rupanya...

....it is difficult at the beginning...all required help to download...now, we can do it ourselves.... teach the children and also our fellow teachers...it is actually easy ...

[P1]

Next, P2 and P3 states that they indeed have the high level of skill in the use of mobile application especially during the PdPR in the past. Other than that, all of the respondents also possess high level of skills in downloading data from the mobile application and into their own mobile devices.

Readiness in terms of behavior in using the Mobile Application

Based on the analysis of the interview, all respondents displayed positive behavior towards the use of the Mobile Application. All respondents owned smart devices as mobile application access tools. There are five dominant factors that caught the liking of the three respondents, which is instant score filling, easy to review the scores again and data that can be easily shared with the practicum teachers for reflection use apart from the interesting design of the application.

.... interaktif...gunakan icon menarik...mudah difahami

.... interactive...uses interesting icons.... easy to understand...

[P1]

.... saya suka...boleh kongsi markah dengan guru praktikum

.... I like it.... we can share the marks with the practicum teachers...

[P2]

All of the respondents express their relieves in filling observation scores by using the mobile application and P1 also states that he/she will be very enthusiastic in doing observations using the mobile application.

.... tak perlu saya bawa kertas banyak-banyak untuk mencerap Guna telefon pun boleh...tak perlu juga saya buat kerja dua kali

...isi dalam kertas...lepas tu isi lagi dalam talian...

.... there is no need for me to bring many papers to observe...we can also use our phone...there is also no need for me to do this task twice...fill in on paper...and then fill it in again online...

[P1]

Apart from that, P2 states that he/she is ready to take enrichment courses to improve on his/her knowledge regarding Mobile Applications. Next, for P3, he/she is certain that observation data fillings through the Mobile Applications will lessen their burdens because there will be less risk in data score leaks during filling the score online and loss of scores filled on paper. P1 also states that the writings on the mobile application is very clear.

.... kadang-kadang, habis kelas terus saya mencerap...kertas pencerapan bercampur dengan hasil kerja murid...

.... Sometimes, I went to observe after class.... the observation paper got mixed in with the students' work...

[P3]

.... sebelum ini, saya print borang pencerapan daripada Microsoft Excel...kecil sangat tulisannya...

.... Before this, I would print the observation form from Microsoft Excel.... the writings were very small....

[P1]

The usability of the mobile application in observing the teachings and facilitations of practicum teachers

If the interviews were to be analyzed in more detailed, all of the respondents are satisfied with it and stated that as users, the mobile application successfully gave them the user satisfaction.

.... sangat menarik...background gelap..tulisan jadi jelas

*.... **Very interesting...dark background...the writings became more clearer....** [P1]*

.... hanya isi nama cikgu dan maklumat ringkas...boleh back kalau nak rujuk item sebelum...

*.... **only required to fill in the name of the teacher and the information is brief...can press back if wanted to refer to previous items...** [P2]*

After that, P2 and P3 states that this application is relevant with the current demands of digitalizing the country's educational system.

.... baru seiring dasar mentransformasikan pendidikan...digital...

*.... **now it is in line with the policy of transforming the education...digitally...** [P2]*

.... semua data sekarang dalam talian...APDM...SSDM...e-operasi... HRMIS...pencerapan patutnya sudah lama diisi dalam talian...

*.... **Now all of the data online... (Student Database) APDM... (Student Behavior Database) SSDM... (Teacher Database) e-Operasi.... (Human Resource Management System) HRMIS.... Teacher observations should be fill out online long time ago....** [P1]*

P1 and P2 both agreed in stating that the application is easy to use and the instructions are also brief and user-friendly. Practicum teacher's score can also be recorded and printed for reference purpose for the teacher themselves to reflect upon apart from it becoming as an initial exposure medium for the practicum teachers with the observation items within the Standard 4 SKPMG2 form. The content of the Mobile Application, i-Cerap also follow all the items from the Standard 4 SKPMG2 form. Next, P1 also gave an opinion that this application can lessen burdens of the teachers that are involved in the observation apart from the observation data that is easy to access anytime and anywhere.

Research Discussion

From the acquired findings of the study, it implies that the observers have good degree of readiness in using the mobile application in observing practicum teachers. Wearmouth et. al (2000) states that readiness is defined as the ability to accept something in terms of both physical and emotion. In a broad sense, readiness in this context refers to the willingness of the observer to shoulder the responsibility that covers knowledge, skills, and behavioral aspect in using the mobile application by observing the practicum teachers. The benchmark for success of a change is dependent in how far the observer's reaction towards accepting and implementing changes (Fullan, 1993). In line with the 21st Century Learning, there needs to be a shift with the educational system that changes from a conventional style of school administration to a school administration that is more modern and is also based on informational technology.

Teacher as observers or evaluators must be ready from all aspects and complement him or herself with knowledge and skills that is based on informational technology. Schrum and Levin (2012) in their study listed four things to have in developing schools towards the 21st century

aspiration, among them is shaping the school culture, planning and implementing the use of technology, revamping instructional practices and developing teacher professionalism in school. The readiness of the use of mobile application leans towards its high usability. This matter is true when referring to a study conducted by Nawi et.al (2014) which stated that the acceptance of a user depends on the user's perceived convenience, as well as easy to follow by the users when they use any kinds of device. The study finding also states that the content of the Mobile Application is fit with the items from the Standard 4 SKPMG2 form. This is supported by Sreerambhatla (2010) in one of his studies that the level of satisfaction of a user improves when the mobile application that was developed meets with the demands of the target audiences.

Norman (2004) study states that users feel good and happy when they use mobile applications that possesses good usability. i-Cerap mobile application that is interactive, creative and innovative, also not so complex until it causes the users to get bored. The use of i-Cerap mobile application that is interactive and user-friendly is crucial because an application that is stiff and not user-friendly can cause the users to be unhappy while using it (Ahmad Fkrudin et.al, 2014). Therefore, the level of readiness of the users depends on the knowledge, skill and interest towards a particular application while the usability of the application depends on the level of benefits that is easy to access within the application that is being develop.

Conclusion

Overall, this study has opened new dimensions for teacher observations. This study also found that all of the panels that took the responsibility as teacher mentors and teacher observers are more than ready and very satisfied with the use of the Mobile Application for observing practicum teachers. The finding also shows that the usability of the Mobile Application used during practicum teacher observations is very high. This means that all of the teacher as observers realize the importance of filling in the observation score using Mobile Application. Realizing that guidance in school is key for the sake of positive changes to practicum teacher behaviors for improving competency and quality, the mobile application really needs to be introduced to the teacher observers. In line with Malaysia's Digital Economy Blueprint (*MyDIGITAL*), all types of content and information needs to be changed to digital formats for the purpose of displaying them in digital communication media.

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