Mobile Applications for Education

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Abstract-Defined as light portable computers, mobile phones have been generally banned in universities due to the fact that they are undeniably disruptive. Currently, with the considerable increase in the number of mobile phone holders, an ongoing lifting of this prohibition has been considered by both stakeholders and educators. Because of their efficiency, lightness and practicality, these small handy devices provide learners with anywhere learning opportunities. However, many teachers and learners are unaware of the power of the educational applications and resources in their hands and this is the purpose of this paper. This paper's aim is to provide the university instructors with some applications and resources for carrying out various learning techniques and activities through mobile phones and to help students build their computer skills. Besides, this paper underscores how this technology improves instructors' teaching without being observed as frighteningly up-to-date or substituting what instructors already know. Safe ways to utilize smartphone applications without affecting the classroom management system shall be also introduced as these applications may cause discipline problems in the classroom if not applied appropriately. The benefits and barriers associated with the integration of smart phones in education shall be also discussed.

Index Terms—mobile phone, mobile Learning, teaching practice, digital native, technology, classroom management

I. INTRODUCTION

Learning methods are currently changing in the entire world. "The inclusion of multimedia in various forms in the classroom enables educators to enhance learning environments, improve the teaching and learning experience, and also mimic what learners will find in the workforce" [1]. Student learning, engagement, motivation, and productivity are positively influenced by technology [2]. Smart phones are no exception as they offer educators and learners with the benefits traditionally found in computers and laptops. The growing availability and technical features of these devices have made smart phones "one of the key current trends of educational applications for new technologies" [3]. With their capability to be utilized on the spot, their quick online access and their corpus of classroom applications, smartphones are capable of improving the learning

experience. They "have all the tools necessary to boost student learning." Smartphones perform a dynamic part in learners and teachers' lives, starting from organizing their timetables to preparing for exams. These small compact computers keep students connected to the Internet and improve their academics. Although the "number of kids with phones has just been blown out of the water the last couple of years," many of them are "unaware of the power of educational applications in their hands, the potential for success" [4]. Smartphone is a gateway to tools and resources which make the learning process more personalized and create bridges over the gaps between teachers and learners. It gives users access to loads of content anywhere, anytime and opens up the opportunity to learn all the time.

II. WHAT MAKES A SMART PHONE SMART?

A smart phone is smart simply because it has an operating system that controls the device's hardware and software. It has the exact same operating system a desktop and laptop have and at least one monitor to display the applications. Smartphones are tiny, lightweight and energy-saver when compared to laptops and desktop computers. They can easily be carried by anyone, anytime and anywhere. Unlike desktop computers or laptops, mobile phones do not need to be connected to internet provider, web browser software, printer, webcam, digital camera, scanner or digital video camera; as all these features are built in the phone itself. Also, it is inconvenient to save one desktop or laptop to each student in the classroom, but it is tremendously easy to ask students to access their own cell phones in class.

"Many students now have pocket technology that is much more powerful and innovative than the equipment used in early manned space flights" [5]. Mobile learning is now convenient and flexible because of the smartphone's accessibility, connectivity and multifunctionality. A lot of people find smartphones amusing because of their sensitive touchscreen. They are very engaging, so learning can last for a long time beyond the boundaries of classrooms. Moreover, students have different ways of learning; with hundreds of educational applications available in the play store, students can personalize their smartphones and thus be encouraged to study. These handheld gadgets can be a great motivator that helps increase students' confidence in their work.

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III. INTEGRATING SMART PHONES IN EDUCATION

Integrating smartphones in the educational process is inevitable anymore. It is a requirement in a world full of visuals and sounds. Teachers who do not use them will definitely look awkward when dealing with their digital native students. "Due to the incredible versatility and internet capabilities of smartphones, educators are beginning to praise their upsides and take steps to minimize their downsides." Smartphones give students a wealth of creative options to enhance their classroom experience, including: Access to the internet for research and referencing, access to e-mail, the ability to snap a picture of the day's homework assignment jotted on a whiteboard or record a short audio of a key lecture moment, keep track of schedules and dates, cope with distracted and disengaged students, obtain virtually instant assistance to solve problems, whether in-class or on a more strategic level, and have potential solutions examined by a trusted group of partners. "If educators teach respectful and appropriate use of technology in the classroom and use it to build their skills as well, the future of education technology looks bright" [6].

In educational institutions that have limited numbers of computers available for students or have equipment challenge such as scheduling clashes or access time, mobile phone is the right choice. Though some educators might think that applying smartphone technology in their classrooms is a massive management challenge, but they instantly realize the incredible computing power they possess in hands. Students, who are instinctively digital natives, could be easily directed to use their phones as learning tools: "Used appropriately, [cellphones] can provide learners with opportunities for further language practice outside the classroom" [7]. Below are some smartphone applications and resources for implementing several activities through mobile phones and to help teachers and students improve their computer skills.

A. My Class Schedule

My Class Schedule is an application that keeps students on top of their work. By using this application, students can manage their university life which is the first step in managing their time and improve their study skills. They could basically install the app to their mobile phone then save their timetable and all related tasks from homework to exams. All what students are expected to do is entering their schedules once and the app will automatically syncs across all the android devices. Moreover, the app automatically silences students' mobile phones for the duration of their classes. This app does also remind students of their upcoming lessons; tell them about the future exams and incomplete homework, show them the schedule for a specific day and displays their grade overview. Furthermore, students can save as many courses, lesson times, homework, projects, assignments, coursework and grades as they want; times can be chosen freely by students; grades can be weighted automatically.

B. Poll Everywhere

Another interesting mobile application which is extremely valuable is Poll Everywhere. This app is used

to examine learners' information of a specific subject material before any forthcoming exam. A teacher can simply prepare questions based on the subject material he/she is teaching in the classroom and give them a script code. Questions are in multiple choice forms. Learners perceive each question with various probable answers: a, b, c or d and then enter the answer. Once all students finish the task, the app collects the responses and generates a graph that displays their answers. Poll Everywhere is the fastest and most accurate way to show how learners comprehend any subject matter. It also helps teachers to reflect on their teaching style. "For example, if a lot of students are picking option C and B is really the answer, then I can go back and review the material again" [4]. Finally, when a teacher allows some fun in his/her classes using poll Everywhere app, students become more attentive and calmer and definitely they become more and more productive and useful.

C. Attendance Tracker

Presence is the best reflection of scores than regular test marks. Thus, the third efficient application that would make a huge difference in a teacher's class is My Attendance Tracker. "There's a strong correlation between student attendance and final grades. The key motivation is to keep students engaged in class, and I want them to succeed" [8]. It is a simple and convenient way to track attendance for any big classroom as it simplifies teachers' tiresome job of taking classroom attendance. It fully integrates with the android device and eases the track of the attendance by saving valuable class time that can be spent lecturing or discussing subjects with students. In the past, when I used to take attendance by hand, I had to look at a student, check his/her name and go to the next student. If the check process used to take almost five minutes in a 50-minute class, that is taking up to 10 percent of a class just on attendance. And if students merely have to sign in, especially in a large classroom, they could sign in for their friends who are not attending the class. Thus, instead of having to manually calculate the total attendance figures, My Attendance Tracker does the work for the instructors.

Preparing students' names and IDs in Attendance Tracker app is a hassle free job. It takes no more than a few minutes to set up a class portfolio and then the teacher receive different reports that they can either view in their mobile phones or print. They can also export them to excel program, save as PDF files, download and share via Google drive or store on SD card. By using Attendance trackers, teachers can certainly connect with their students by exchanging electronic emails or text messages right from the application. Furthermore, a teacher can send an SMS to absent students to check on them. He/she can easily determine a class, allocate students to this class and tick whether they are in, out, ill or unknown. The metrics integrated in the app offer educators with a distinct indication of the turnout: General attendance, each student's attendance and the total sum of attendees. The overviews contain the entire attendance statistics and notes. Last but not least, an educator could easily transfer the attendance information when buying a new mobile phone.

D. Recordroid

The most interesting and well-designed mobile application for students is Recordroid. By installing this app, students are not required to copy the lectures anymore. They can simply use the app to generate audio recording notes files which are sent automatically to the students' desktops thru blutooth or email so they can study what the teacher explained at home. With Recordroid Dictaphone students could easily save and view recording location on the map and set as a ringtone. What makes Recordroid is the most applicable app to record lectures is that it records the audio in background process, so students' recordings are not interrupted with a phone call or turning off the screen. The app can record audio with the most possible quality by choosing the high quality to save the record as wave audio format. Simplicity makes this app an ideal tool for all students. The settings menu of the app gives students access to detailed settings for audio, geocoding, file formats, and automatic backup settings. To use the app efficiently, all what students need to do is to hit the record button and the recording will automatically be created. When they are done, they give a title for the recording and the app will consequently create a file on the phone's memory. If students have many recordings on their phones, the search feature in the app will allow them to find the one they are looking for.

E. Team Viewer

What happens if a student forgets his/her assignment on their computer at home? Definitely, it might be a major problem if they do not have Team Viewer app on their smartphones. Team Viewer is an app that is used to access remote office or home desktop with all of its documents and installed applications. It can freely control Windows, Mac or Linux computer. All what students need is just downloading Team Viewer on their desktops at home and installing the app on their mobile phones. Then, they can share securely, send files with a minimum of hassle, control access rights, and even flip which user has control. The options available while students are in control work smoothly. When students log in, they are given an access code and a password. Sharing those allows their computers to be controlled by the level they set it to: remote support, presentation or file transfer. The TeamViewer servers remember which computers a student has connected to, so reconnecting to previously shared computers happens faster. TeamViewer also has a Web-based version, for remote connecting to home from public computer, a great feature that allows students to access their home computers anywhere. Overall, TeamViewer makes screens-sharing and file-sharing as fluid and unremarkable as it should be.

F. Chrome for Android

Last but not least, my students always encountered an irritating problem related to the small monitor of their smartphones. This problem made them lose interest in online searching. But when Google released its last update to Chrome for Android, the problem is solved. The update added a new feature which is the ability to request the desktop version of a Web site that just isn't looking that convenient in its mobile form. Requesting the desktop version of a Web site can be done in just a couple of steps. When viewing the mobile version of a site, a student can open the menu and check the box located next to Request Desktop site. The Web page will automatically begin to reload in the background. With the box checked, students will see the desktop version of the site loaded for only that tab. To change back to the mobile version of a site, students can simply uncheck the same box. The page will again automatically refresh for them. There's nothing fancy to this method, but it is one that is sure to come in handy. Some mobile sites are less than user-friendly, and getting to the desktop version of the site can be more convenient to students.

IV. LIMITATIONS

Before teachers decide to integrate mobile phone applications in education, they need to understand the educational strategy of their institutions. "There is no single objective definition of good teaching practice. It all depends on the teacher's social and educational context as well as the set of core beliefs that motivate your practice. The way you use technology should reflect these beliefs. You will need to look at technology critically and select the tools that best match your needs" [9].

Our students may have exceptional attitudes towards mobile technology and unique patterns of using it. It is the teacher and institution's job to help determine the potential effectiveness of these learners. Also, investigating the feasibility of using mobile devices as writing tools should be considered. Mobile phones can be used for taking notes, composing essays and reports by measuring how easily "students can write text using various mobile interfaces," such as "handwriting recognition, onscreen keyboards, and tiny keypads" [10].

More studies on the effectiveness of using smart phones in education should also be considered. Most of the studies appear in books, journals or even online are no more than individual attempts to integrate mobile phone technology in classrooms. No institutional or global research has been done on a large scale to determine the validity of using mobile phones in classrooms. To endorse and enlarge the outcomes, other studies could be implemented and include more samples, different groups of learners from different institutions and different countries and application of other sorts of activities exploiting smartphones.

Additional research is suggested to examine whether the plan of mobile phone test questions affect students' performance and investigating with higher order thinking questions. Researchers could also investigate causes for the dearth of full learner use of mobile phones for educational reasons outside the classroom. This research paper works as an incentive to stimulate teachers and researchers to advance their research plan on smart phone learning in the whole world. It brainstorms ideas on possible areas that educators might be concerned about researching and it encourages researchers to publish papers on how mobile devices can support learning inside and outside the classroom.

V. CONCLUTION

"Teaching is a constantly evolving profession; new ideas and new techniques that may help you become a more effective educator are constantly emerging" [11]. Teachers have to not only support their learning process using technology, but also transform it. They should adapt to the changing times and find a way to successfully incorporate smartphone applications into their own classrooms. They should really reconsider allowing smartphones in class as they can be very efficient, especially now that many app developers are creating educational apps. Most of these apps are even free. It is just a matter of exploring the App Store or Play Store. Although schools will disagree on the educational value of smartphones, they have to accept the fact that, slowly, smartphones are becoming commonplace as educational tools. And teachers should not feel intimidated by this new technology. "The rapid pace of new developments means that almost everyone is adjusting and learning as they go along" [9]. Smartphones are not completely alternative tools; they are just a supplement for classroom engagement. We all know that the problem with smartphones in the classroom is that they are a floodway for interruptions. This is the main reason why many teachers are anxious about allowing smartphones in class. But this generation is a lot harder to encourage to study because of the technology that surrounds them. So why not use that technology to help them study?

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