

Mobile learning and BYOD: implementations in an intensive English program

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Introduction

Rapid advances in technology and the instantaneous adaptation of the younger generation have created new trends in everyday living and consequently in learning and education. In Gulf countries and elsewhere, we now have a generation of people who are always connected and like to access information anytime, anywhere from their own personal devices. This information-on-the-go trend is being embraced and utilized by educators, in the form of mobile learning, to foster higher degrees of engagement that can lead to higher levels of achievement for students.

A number of educational institutions in the United Arab Emirates have embarked on the mobile learning trend through the federal iPad initiative, while other institutions rely on and encourage the creativity of their educators to use educational technology, with mobile learning as the new direction. In any case, it is becoming increasingly difficult for educational institutions to keep up with the rapid advances in technology through the resources they invest in. Meanwhile, students, individually, stay updated and equip themselves with the latest technological devices available on the market. This results in students always being ahead of their educational institutes in the devices they use for their everyday life communication and connectivity; so a gap always exists between students' capabilities (through the tools they use) and what is being offered in the classroom. Another aspect to consider is that educators who are enthusiastic about technology often feel a sense of frustration when they are unable to integrate latest technology in their teaching practice due to limited or outdated resources.

All these limitations can be made much less problematic upon the simple acceptance of the fact that our students are already connected through their own devices and are well tuned to mobility. Hence, one solution would be to allow students to bring their own devices to the classroom and give them reasons to use these devices both inside and outside the classroom for the purpose of learning. The BYOD (Bring Your Own Device) movement offers a solution for educational institutions and can help bridge this digital gap. There are also a number of concerns regarding BYOD, which can be dealt with through policy making, proper planning, and professional development opportunities for faculty.

Context

The academic year 2012/2013 has been marked by the federal iPad initiative in a number of universities in the United Arab Emirates. Some universities started this academic year with iPad empowered classes where every student and teacher has an iPad, and lesson plans were adapted to this. The majority of other universities have not yet made that decision and are looking at alternatives to help them adapt to mobility in learning. In the University of Sharjah faculty are highly encouraged to integrate educational technology into their lessons, but no specific mobile computing device has been chosen as the main learning tool for that purpose.

The Intensive English Language Program, offered by the University's English Language Center, provides four levels of language proficiency programs for first year students who need to achieve a score of band 5 in the IELTS (or a TOEFL score of 500) as a prerequisite to entering certain colleges. Students enter the English Language Program for a period ranging from one semester up to four semesters depending on their language level and on their final IELTS or TOEFL score.

Such students are under pressure of time since they feel that they are being delayed from entering their major and wish to improve their English as fast as possible. Hence, there is a considerable amount of impatience and frustration among them and a greater pressure on the instructors to maintain high levels of engagement and constant support as well as (re)motivation to help students pass their language proficiency tests.

Keeping up with the latest trends in learning and continuously inspiring students to learn are key factors for instructors to ensure the success of the program. Financial constraints and the limited resources available to them put a higher demand for creativity and resourcefulness on the instructors. Most classrooms are equipped with a desktop computer and an overhead projector with ample Internet connectivity. There are two computer labs available for the English Language Center, which need to be booked in advance for class use. IT technicians are frequently required to visit classrooms or computer labs to deal with hardware or software problems that come up during classes. When this happens, it impedes the flow of the lesson and hinders delivery of the lesson outcomes. This type of setting makes educational technology an add-on rather than an integral part of instruction.

Ideally, with the advances in educational technology and the advent of mobile learning, technology should be integrated into the fabric of each lesson. It should be used to empower students, foster independence, increase creativity, enable learning 'anywhere, anytime' by reaching an abundance of available resources, and help develop the skills needed for the job market. Embarking on a BYOD strategy can provide a suitable solution within the current context.

Literature review

Key trends in education

The NMC Horizon Reports for Higher Education (Johnson et al., 2012; Johnson et al., 2013) identify key trends that reflect the realities of higher education, learning, and life in general. These trends can be summarized as:

Mobility (Johnson et al., 2012) and *openness* (Johnson et al., 2013): people want to learn and study anywhere, anytime, and want to access resources that are open, i.e. "free, copyable, remixable, and without any barriers to access or interaction" (Johnson et al., 2013, p. 7).

The abundance of *online resources* (Johnson et al., 2012) and Massively Open Online Courses (MOOC's) as an alternative to university courses (Johnson et al., 2013) have both redefined the role of educators and showed a clear paradigm shift in education to include online learning and hybrid learning.

Technologies are increasingly *cloud-based*, with a decreasing demand for IT support (Johnson et al., 2012).

Workforce skills are ever more *collaborative* and these skills are usually learnt from collaborative student projects as well as from informal learning experiences (Johnson et al., 2012; Johnson et al., 2013).

Salmon (2012) summarizes the key trends in education as mobility, connectivity, openness, collective intelligence, and virtual worlds, and comments that

[a]s we move forward, higher education will become increasingly mobile, resulting in students carrying their university “in their pockets” (1. Mobility).

In keeping up with the above-mentioned trends, it becomes quite clear that traditional, teacher centered classes no longer serve the purposes of modern education. The move toward mobility becomes a must. IT leaders are often quoted as saying that there is no avoiding mobility: “campuses must keep up or be left behind” (EDUCAUSE, 2013, parag. 1).

Mobile learning: definition and devices

The concept of mobile learning has been around for some time now (Quinn, 2000; Sharples, 2002; Alexander, 2004; Wang, 2004) and attempts to define it vary. UNESCO (2012) identifies a popular definition of mobile learning as “education that involves the use of mobile devices to enable learning anytime and anywhere” (p. 10) and the same report adopts a broad definition of mobile devices as “digital, easily portable, and can enable or assist any number of tasks including communication, data storage, video and audio recording, global positioning, and more” (ibid.). Hence, the general agreement is that mobile devices include smartphones, tablets, mp3 and portable media players, eBook readers, gaming devices, net books and even cellphones that have Internet connectivity. The list is not inclusive and will keep on changing with the rapid developments in technology. The notion of learning ‘anywhere, anytime’ is a prominent feature of mobile learning, on which many other available definitions also focus (see Traxler, 2007; ADL, n.d.; El-Hussein & Cronje, 2010; Woodill, 2011) and others.

Mobile learning in higher education

Shifting towards mobile learning is not only about the technology: there is more to be said about the approach than the tools. Mobile learning is redefining the role of educators and the focus in the classroom. Implementing it in higher education does not mean merely integrating new technology into teaching; it requires a paradigm shift in the way students learn (Edutopia, 2012). UNESCO (2012) also notes that

[d]iscussions about mobile learning should: 1) focus more on mobility and its unique affordances than on technology per se; and 2) include questions about how mobile devices can support not only learning but also broad educational goals such as effective education administration and information management. (p. 10).

It is clear that mobility is becoming a life style and continuous, personalized learning is the trend. Owners of mobile devices can effortlessly load their choice of apps and other content such as ebooks, videos or audio files, transforming their devices into a “portable, personalized learning environment” (Johnson et al., 2013, p. 15).

It would be a great waste of a potentially active learning experience if higher education institutions hesitate to embrace mobile learning. This hesitation might stem from some challenges that are unique to mobile learning in particular, and some other challenges that apply to educational technology in general. UNESCO (2012) summarizes these challenges as follows:

Challenges include limited opportunities for teachers to learn how to incorporate mobile technologies into their classroom practices; concerns about privacy and online safety; negative perceptions regarding the use of mobile phones in education by some teachers and parents; and inequity of device ownership, which still exists despite the fact that mobile phones are the most ubiquitous ICT in history. Finally, around the world some national, regional, district and

institutional rules strictly prohibit the use of mobile devices in schools. These policies effectively forbid educators from engaging with mobile learning and, as a consequence, thwart potential educational innovations. (p. 8)

Although the UNESCO report discusses school contexts, the same applies to higher education. These challenges, however, can be addressed and have been so by a number of higher education institutions in the UAE and around the world.

BYOD and DNA

BYOD is also known as BYOT (Bring Your Own Technology) or referred to as “the consumerization of IT” (Converge, 2012, p. 6). The abundance of available mobile devices in the market and the special features of each model make it difficult for universities and students to choose which device to welcome in the university. Each student has a preference for a particular device based on the suitability of its features and cost. The majority of students in developed countries already have mobile devices prior to their admission to the university. UNESCO (2012) notes that “for the first time in history, a majority of people can afford to buy personal ICT in the form of mobile devices, in particular mobile phones” (p. 7). College students tend to be tech savvy and use their mobile devices in their everyday and academic life in the form of daily web searching, social networking, emailing, collaborating, etc (CDWG, 2012). So why not take advantage of the unprecedented high percentage of mobile device ownership? (Probert, 2012) comments that this is a communication revolution and organizations are faced with a choice to either provide devices for people or allow the use of personal devices, the latter being a more convenient option. He also states that

Increasingly, [students] have and will have direct and immediate access to an increasing array of smart devices and social media-based applications, which they view as their primary and preferred means of consuming services, accessing content and communicating.

Therefore, if you want to engage and excite them it seems obvious that you have to leverage tools and technology that they can use and can relate to.

It seems that all that needs to be done is enable staff and students to use their devices to access the university network (Cherwell Software, 2012). In fact, although that would be a huge advantage, BYOD can still be implemented on a smaller scale without, or with limited, access to the university network.

Benefits of BYOD

All cited sources in this paper on the topic of BYOD agree on a number of measurable benefits. Many of these sources are studies done by, or with, institutions who have implemented the BYOD approach and hence know from first hand observation and statistics the advantages gained by that approach. The benefits can be summarized as follows.

- *Lower cost technology integration:* Achieving technology rich classrooms and 1:1 teaching situation at a lower cost for the institution as well as enabling students to save on textbooks.
- *Engagement:* Students become much more involved and engaged since their role changes to active learners and peer tutors. They have shown higher levels of contribution and productivity in the learning process.
- *Teaching 21st century skills:* By enabling students to use their own mobile devices, they learn collaboration, problem solving, creativity, production, and social networking, all of which are skills highly required in the future job market.
- *Anytime, anywhere access:* Learning no longer happens in the classroom only, it takes place out of the classroom as well, and more so because of students’ continuous engagement, and interest.

Having their own devices turned on and tuned to their learning builds on their comfort zone because they are using the devices they are most familiar with.

- *Responsibility*: When the device is the student's own, it encourages them to take responsibility for their own learning as well as their own device in terms of continuous updating, maintenance, and safe keeping.
- *Personalized learning*: This is one of the most prominent benefits of BYOD. With the app revolution, and the wide choice of educational and productivity apps that are available for students, learning is becoming more personalized.
- *Learner Independence*: When students are learning anywhere, anytime, in a more personalized and responsible manner, this will result in increased levels of independence that will create lifelong learning habits.
- *High speed of implementation*: Institutions can embark on a BYOD program without much delay since the process of purchasing the devices does not need to be done by the institution itself.

Some challenges

Implementation of any new program will definitely face some challenges that need to be evaluated and addressed. The success of the program depends on awareness of possible difficulties and ways to overcome them. Hockly (2012) categorizes the challenges in three main areas:

Devices and Hardware:

- The issue of *inequity* in devices has been a main concern since not all students can afford the same devices. This gives more affluent students an advantage over others.
- This also entails *differentiation of learning material* due to personalized learning and different devices.
- Instructors have shown concerns over having to provide *IT support* for all the different platforms students are using.
- The need to access a *reliable Wi-Fi* network as a precondition for the success of any BYOD program becomes a must. Otherwise, connectivity to the 'cloud,' i.e. Internet, is sacrificed, hence a major benefit of mobile learning is lost.
- There are other concerns regarding *battery life* of the devices, which might hinder learners who forget to charge the device or forget to bring the charger to class.

Safety:

- *Security* is an issue here because it becomes more difficult to control device access with so many devices to deal with. However, this is more of a concern in the business field than in the academic field.
- *Device safety* needs to be addressed to raise awareness regarding the safe keeping of devices being the responsibility of the student.
- *E-safety* (safety on the Internet) is another issue for school students, but less so for higher education students.

Classroom management:

- *Platform management* is a worry that needs to be addressed. Instructors might feel uncomfortable knowing that they have to deal with so many devices in the classroom.

- *Distractions* can be constant because of the connectivity to the outside world and the availability of gaming and entertainment on the students' devices.

None of these challenges is insurmountable: UNESCO (2012), Hockly (2012), Johnson et al. (2012), Edutopia (2012), Probert (2012) and McCrea (2012) among others offer ways to overcome these challenges through policy making, professional development/ teacher training, and investing in a reliable WiFi network. To reduce the effect of inequity, institutions should consider providing a number of loaner devices to make sure that no students are disadvantaged if they own a less capable device. As for IT support, BYOD tends to reduce the demand on IT technicians since students are technologically savvy enough to deal with daily use issues, more so because of their familiarity with their own personal devices. They are also capable of offering support for each other and for their teacher as well.

Device neutral assignments (DNA)

An important way to overcome the issue of different learning platforms is through creating *device neutral assignments*. Fortson (2013) quotes Ron Millener, director of the Kentucky Academy of Technology Education, who defines DNA as "lessons that can be completed on any device" (parag. 3) but also reassures teachers that moving forward in mobile learning through BYOD does not necessarily mean changing the assignments they have already created, but rather converting them so as to allow students to use different devices. This can be done by simply changing the wording of the assignment; for example, the assignment should say 'give a presentation' rather than 'a PowerPoint', or 'produce a text document' rather than 'a Word document', and let students find the relevant app or software to do it (see Campo, 2013 below). There are many examples of websites and applications (such as VoiceThread and StudyStack) that work on all platforms. To deal with IT related issues, Millener suggests the "ask three before me" rule. Students have to ask classmates or other people they know. If three people could not help, then they turn to the instructor. This rule ensures that students share expertise and help solve each other's IT issues; it also helps in reducing pressure on instructors since students are most likely going to find the answer they need from one of the three people they asked (Fortson, 2013).

Campo (2013) recommends some strategies for DNA:

Allow choice of product. Can students show their learning through a video, website, screencast, essay or presentation?

Co-construct success criteria. If products will be different, what makes a successful product? How will it meet the curriculum expectations?

Use generic descriptions. Instead of requiring "PowerPoint", use "presentation". Instead of requiring "Word", use "text-based" or "word-processing".

Suggest cross-platform services. Many apps and services can be used on all devices. [...]

Group students purposely. An activity may require a camera and a computer/laptop: pair a student with a smartphone with another who has a laptop. Conversely, group students with similar devices.

Use the classroom technology. Your document camera can be used to create images, video, etc. During group work, one group can use the class desktop computer.

(Some ideas for creating DNA)

Questions and evidence

The question now is how ready and/or willing are students in the University of Sharjah for mobile learning? Has incorporating a degree of mobile learning in some Intensive English Program classes shown any increase in student engagement and achievement? Has it improved the level of instructor–student and student–student communication? Has it resulted in more learning and more language

practice? A number of activities that involve the use of mobile devices were introduced to students, who later took a survey designed by the instructor. The survey contained eighteen statements the purpose of which was to evaluate students' benefit and degree of engagement.

Implementations of mobile learning in the IEP Program

The study took place in four classes of the IEP, namely two level 3 IELTS preparation sections, one writing skills class and one speaking skills class. Students were encouraged to use their mobile devices for class work, homework, individual and group assignments, communication and course management. They were invited to continuously use these devices as tools both inside and outside the classroom to maximize language practice and critical thinking. The given assignments were related to the curriculum and assessed as part of students' overall course assessment. Communications, i.e. instructions and clarifications, regarding these assignments took place online through the Edmodo learning platform, email, Twitter and even basic text messaging, which students all received and responded to via their mobile devices. Other engaging activities were introduced and encouraged without being part of any assessment; the sole purpose of which was to increase engagement and general language practice. After midterm exams, students were asked to take a survey to evaluate the experience of incorporating mobile learning in the learning and teaching process.

Dictionary apps

Students were required to install at least two electronic dictionaries on their mobile devices: one English-English dictionary and one English-Arabic. A few non-Arab students installed a dictionary of their native language as well. Throughout the course and for various reasons, e.g. writing assignments, vocabulary exercises, reading comprehension, etc. students were required to use the dictionary on their mobile devices to look up meanings of words they did not know or were not sure of.

Web searches

Quite frequently during lessons, the instructor would raise questions for which students did not have a ready answer. In such cases they were instructed to find it out from the Internet. Questions included historical information, people information, image search, lists of word groups or movie genres, among other things depending on the lesson.

Video projects

Two video projects were assigned. One was a video dictionary where students created a short video (approx. 1 min.) showing the meaning of a word. They were supposed to introduce a word from their vocabulary list and create a short video where they act out the meaning of the word or act a scenario where the meaning becomes clear. Alternatively, for students who did not wish to be in a video for cultural reasons, they were given the option of creating a video or a presentation with pictures and words to show the meaning, part of speech, and example sentences with relevant pictures (e.g. <http://bit.ly/12y9p3w>). Videos were then uploaded by the instructor to youtube.com as 'unlisted' links to protect the privacy of students. The links were shared with students of the same class to provide easy access to videos. Students used their mobile devices to create the videos and to watch them later for revision before quizzes. Figure 1 shows part of the list of uploaded videos.

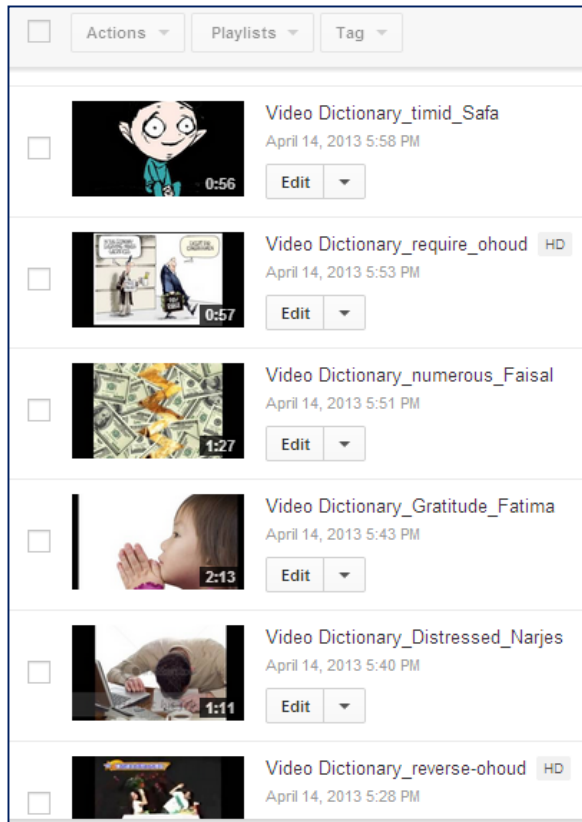


Figure 1: Video Dictionary project.

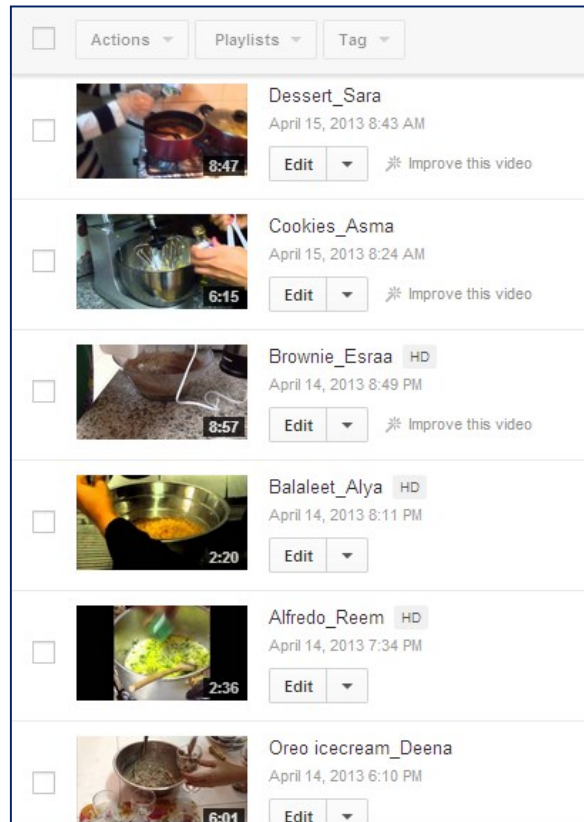


Figure 2: Cooking Channel project.

The other video project was to create a ‘cooking channel’ for the speaking skills class. Students were asked to share a recipe of a dish they knew how to cook and use their mobile device to record a video of themselves talking about the ingredients, preparing the dish, and explaining the steps (e.g. <http://bit.ly/ZefpgZ>). When all videos were completed, students watched them in class and assessed them according to a rubric provided by the instructor. Again, the videos were uploaded to youtube.com as ‘unlisted’ links; Figure 2 shows part of the list of finished projects.

Online practice for IELTS speaking test

For this online speaking practice, VoiceThread was used to create three complete IELTS speaking tests, with video recordings of the instructor asking each of the IELTS speaking section questions. Students were instructed to download the VoiceThread App to their mobile device and record their answers to each question. The instructor listened to all answers and gave feedback both individually and to the whole class on common mistakes. Figure 3 is a screen shot of the IELTS speaking card with icons of students’ responses around the main screen.

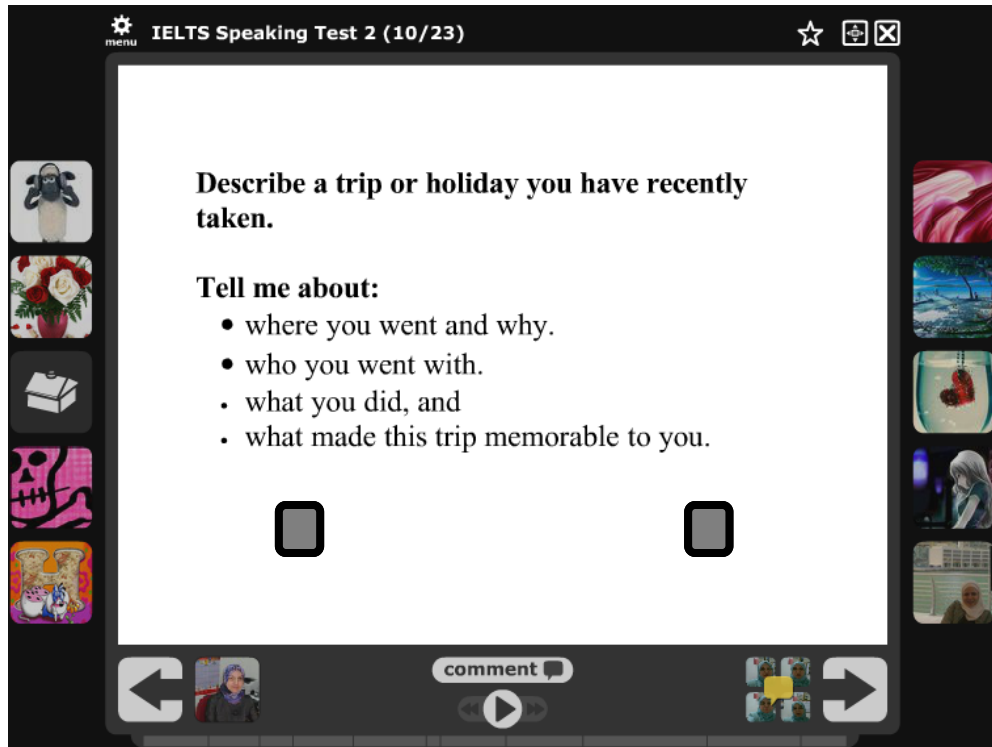


Figure 3: IELTS Speaking practice on VoiceThread.

Blogging

In the writing class, students were required to keep a journal throughout the course. They were required to post three journal entries every week, writing about anything they like. The purpose of the assignment was to train them on free writing. To encourage students to blog, the instructor started blogging to give ideas on what to write and how to write it. Blogger was suggested as a platform for their journals. Students were not familiar with blogging and were skeptical at the beginning; therefore, they were given the option of keeping a journal through a blog or in a copybook provided that they try blogging first for a week. As expected, none of the students took the copybook option: students were not only blogging regularly, but also reading and commenting on each other's blogs. Figure 4 shows an example of a student's blog post.



Figure 4: A student's blog post on Blogger

Social networking

The activities on social networking websites were not required from students as part of their course work, but were encouraged for purposes of communication and content sharing. Students who had an account on Instagram, Pinterest, or Twitter posted pictures of what they felt was an interesting activity, e.g. a picture of a drawing on the board that the lesson was about, or taking pictures of their own work, and posting it. Each shared picture received likes from other friends, not necessarily from the same class. One student shared on Twitter a link to the instructor's blog post because the blog post was about her presentation (Figure 5). Another student shared a picture of a murder scene drawn on the whiteboard and the set of wh- questions along with a picture of the worksheet that the lesson was about: Figure 6 shows a picture of the whiteboard with a comment from the student and 33 likes from her followers on Instagram.

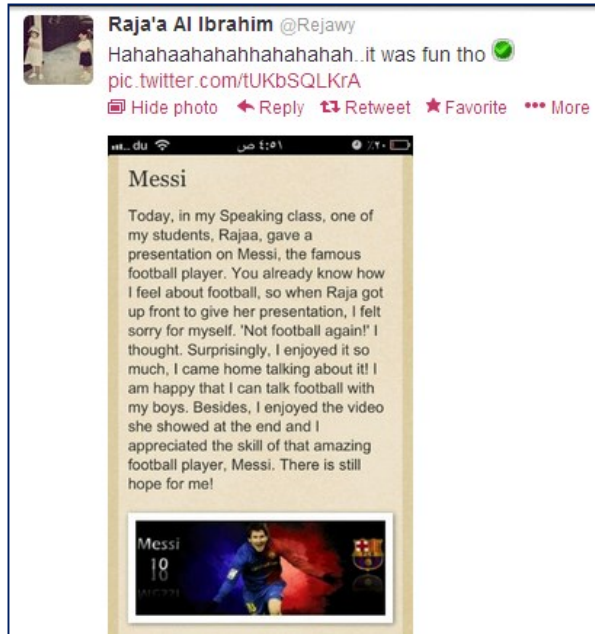


Figure 5: Screenshot from Twitter.



Figure 6: Screenshot from Instagram.

Social learning platform (Edmodo)

Edmodo is currently the main social learning platform used for communication and learning management in the above-mentioned classes. The Instructor uses it for announcements, occasionally posting a link to an interesting article and spending five minutes at the beginning of the class chatting with the students who read it. This causes more students to be curious, so they log on to Edmodo to see what the instructor was talking about with their classmates. Edmodo is also being used for posting extra exam practice for students who want to go at a faster pace than their classmates, as well as for online quizzes: students can take the quiz from their mobile phones, and quiz results are immediate with all relevant statistics.

Feedback from students

A survey was designed to evaluate the use of mobile devices in learning, and students' readiness to view their mobile devices as tools for learning as much as they are tools for social connectivity and entertainment. The survey consisted of four parts, focusing on:

- mobile ownership and use
- using mobile devices for class work and homework
- learner independence

- possible disadvantages

Students in the four sections involved were informed that there was a survey for them to take and that taking it was voluntary. They were informed via Edmodo during a two week mid-semester break (after the midterm exams). This was done to measure how many of the students would respond to a notification they receive on their mobile phones from the Edmodo App during the break, even when there was no work required from them, and to see if students would still be interested in any activity taking place on Edmodo. A surprising number of 45 students out of 57 took the survey, indicating that 79% of the students continued to be engaged even during the break. There was no obligation on them to take the survey but they did so out of their willingness to participate in the study; it seems likely that the response to the survey might have been less if it had not been sent and accessed directly via their mobiles (e.g. if they had had to log in to Edmodo from their laptops). Having a notification of the instructor’s survey announcement on their mobile phones drew their attention to it and made it more convenient for them to take the survey.

Part 1: Mobile ownership and use

Only one student indicated that she did not have a mobile device, but it seems likely that she did not realize that a laptop PC can also be considered a mobile device. In response to the question about what they like to use their mobile devices for (Figure 7), they indicated communication to be the main reason, including communication with university, instructor, and classmates. Their next preference was listening to language audio files, followed by keeping a journal, while doing assignments and taking quizzes were the lowest on their preference list.

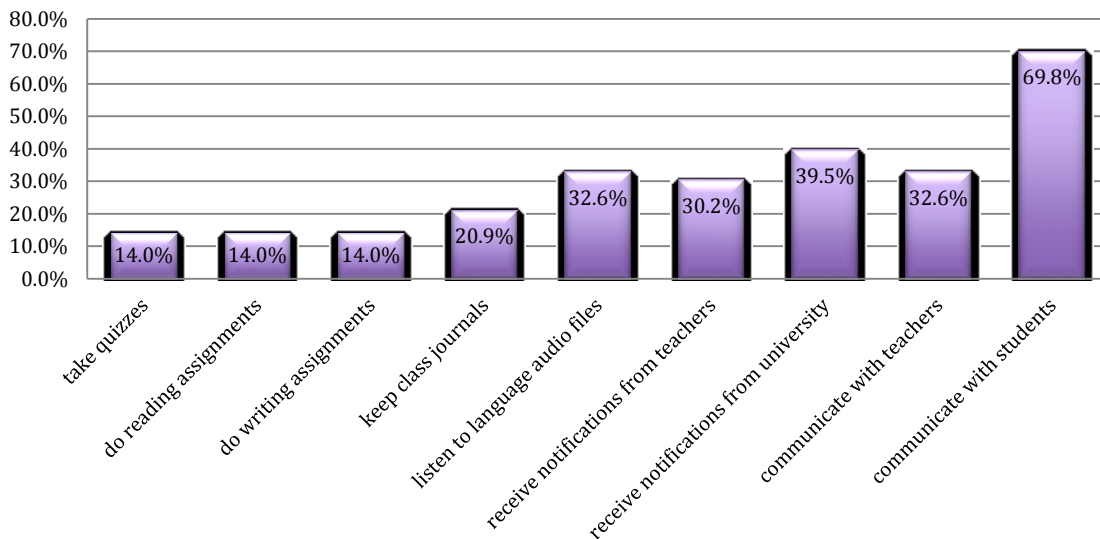


Figure 7: I like to use my mobile device to...

Part 2: Using mobile devices for coursework

In this part, the first four statements aimed at evaluating students’ feelings regarding the use of mobile devices in class, whether it increases the quality of the lesson, makes the lesson more interesting, and whether they feel more active when they use their mobile devices in the class (Table 1). 40.9% of the

students responded that they like to use their mobile devices in class, and an equal percentage gave a neutral response, while only 18% indicated that they did not.

When asked if using mobile devices increases the quality of the lesson, similar percentages were received: 38% responded positively while 41% gave a neutral response. Higher percentages were found in statements relating to engagement. 51% felt that it makes the lesson more interesting and 62% felt that they become more active when they use their mobile devices in the classroom as part of the lesson. The next statement was added to see whether students preferred their own devices to computers provided by the university, and 53% preferred their own devices. The same trend continues with the homework related question: 42% did not mind doing more homework from their mobile device. For keeping a journal, 51% felt that it becomes easier to keep a journal if they could write it using their mobile device. This percentage can be explained in view of the fact that only 19 of the 45 students were in the writing class and had to keep a journal as a requirement for their coursework. The other 26 students who took the survey did not have to keep a journal and hence did not give an informed response.

Table 1: Using mobile device for coursework.

	Mobile Learning Part 2	Positive responses	Neutral	Negative responses
4	I would like to use my mobile device for class work.	40.9%	40.9%	18.2%
5	Using mobile devices will increase the quality of our lessons.	37.7%	44.4%	17.7%
6	Using mobile devices in the classroom makes the lesson more interesting.	51.1%	28.9%	20.0%
7	I feel more active in the classroom when I use my mobile device as part of the lesson.	62.2%	13.3%	24.5%
8	I like using my mobile device rather than using the university computers.	53.3%	20.0%	26.7%
9	I don't mind doing more homework from my mobile device.	42.2%	31.1%	26.7%
10	Keeping a journal becomes easier when I can write it using my mobile device.	51.1%	26.7%	22.2%

The results of part 1 of the survey can be seen as an explanation for the results of part 2: in part 1, students preferred communication related uses for their mobile devices to productivity related uses (e.g. assignments, quizzes, and journals). Overall, the results show that students like to be connected and stay informed, they are more engaged, but only half of them are willing to let their engagement and interest drive them to more production.

Part 3: Learner independence

To determine whether using mobile devices increases learner independence, students were asked in the survey about whether they feel able to learn more, find information independently, learn anywhere/

anytime and stay connected, as well as whether they need IT support when using their own devices. 73% felt it enabled them to learn more and 77% responded that they like to learn anywhere, anytime; fewer students (49%) felt they could find information independently from the instructor, and only 37% indicated that they do not need IT support, with another 32% not sure if they do.

The results clearly show a degree of learner independence: students are able and willing to access information through their mobile devices and to some extent manage it independently of their instructor. However, students still felt unsure of their ability to deal with technical problems; one point to take into consideration here is that these were all female students who tended to show more interest in the applications of their mobile devices rather than the technical aspects. When the instructor asked them about who helps them when they face a technical problem, the main answer was their brothers; therefore, the 'ask three before me' rule comes in handy.

Part 4: Disadvantages

The last three items in the survey were aimed at finding out students' perception of the limitations that hinder the use of mobile devices to its full potential. There was one general statement regarding their general view of mobile learning and another regarding whether the disadvantages are more than the advantages. 42% believe the advantages are more, while 44% chose 'neutral' which indicates that they had not had enough experience with mobile learning to be able to give a definite answer. Only 25% thought that mobile devices can be distracting. When asked to identify why using mobile devices was not so easy, 73% chose the response 'the Internet connection is weak,' (because the WiFi signal cannot be equally received in certain areas on campus). 43% chose 'the Internet connection is slow' (because it takes them time to log in and load Internet pages or apps). Students had the option of adding any other reasons and four students wrote the following:

it work by touch

Wireless is bad [response edited by author to remove inappropriate language]

Mobile device distracting me to hear the lecture.

the screen is too small

It can be inferred that in order for mobile learning to be implemented in the University of Sharjah, the wi-fi connection needs to be improved to better enable connectivity for the increasing number of students' mobile devices. This, of course, is one of the requirements mentioned earlier for implementing a successful BYOD program.

Survey generalizations

A number of general trends can be made from the survey results:

1. Students already own one or (more) mobile device.
2. The main use preference is communication, followed by keeping a journal.
3. Students are more engaged but would rather not do extra work.
4. The majority of students feel that mobile learning contributes to independent learning.
5. The general perception is that the advantages of mobile learning outweigh the disadvantages.

Instructor's observations

The increased engagement of students was evident from their general attitude towards classes, compared to previous years when students did not all own smart devices or were not allowed to use them in class. To be more specific, in both IELTS preparation classes, students' engagement increased,

and they repeatedly asked for more online practice. They felt that the online IELTS speaking practice on VoiceThread gave them extra opportunities to try the test alone, at home, in addition to the speaking practice that was done in class. They showed interest in the various articles posted for them on Edmodo, which meant more reading practice to improve reading speed and comprehension. The initial remarks from students when the first article was posted were that they wanted to read it but stopped because they felt it was too difficult for them. Later, there were more comments by students on the articles that followed. Interest increased when article topics were discussed and commented on in class, and now students simply read, comment, and enjoy the process of finding out interesting things around the world. Audio files were also posted for them on Edmodo, and they frequently asked for more. This relates to the survey when students showed 'listening to audio files' a preferred use of their mobile devices.

In the writing class, students appeared keen on updating their blog with the required three entries a week, more so because they received comments from the instructor and classmates. They are more careful to write about interesting topics and share experiences that will win them more reactions from classmates. Another major consideration here is that it is by far easier for the instructor to keep up with the students' blogs than by the previous method of collecting copy books from students, whereby other students did not have the chance to see each other's writings: it is the sharing and the publishing that encourages students to try their best. As blogs progressed, the instructor noticed improvements in style and language in varying degrees.

In the speaking class, students had more opportunities to speak because of VoiceThread and because of their ability to create videos of themselves presenting. One student could not come to class to give her presentation, so she was offered the opportunity to upload her PowerPoint presentation on VoiceThread and record herself speaking for every slide of the presentation. Students submitted their videos with an unprecedented speed, compared to face-to-face presentations, which a number of students would try to delay as long as possible.

The general interaction and rapport between instructor and students increased. Students seemed to feel that they were partners in the learning process rather than passive receivers, which is the ideal that all educators strive to achieve.

Limitations of this study

The study was carried out mainly in the Women's Campus among female students. The survey was given to students right after midterm exams, which means they only had eight weeks of study with the incorporation of mobile devices. In addition, the number of students taking the survey was limited and results would definitely have been more indicative if there had been more students, both male and female and a longer period of time for further implementations of mobile learning. The number of online activities and other specially designed activities for mobile learning could have been increased to give students more exposure to mobile learning: the instructor was not able to offer as much as she had hoped, due to timetabling complications which lead, unavoidably, to a hectic teaching schedule on different campuses, and so limited preparation time per class.

Conclusion and recommendations for further research

The nature of mobile learning and the openness of 21st century learning need to be investigated against the cultural background of society in the United Arab Emirates. Online connectivity and communication between instructors and students need to be studied to find the best practices that respect the cultural

uniqueness of the region. For example, requiring students to create and share videos or even pictures needs to be carefully considered to avoid inappropriateness. Publishing on the web means further exposure and that must be done with caution regarding what is deemed culturally acceptable in such situations. In this study, cultural issues were minimal, due to the fact that both instructor and students are female, but there were a number of activities that were not included in the study due to a feeling that further study should be made regarding perceived levels of appropriateness. Some examples would be the use of social networking websites like Facebook, because of the precaution that in certain social contexts it is deemed as not suitable. Twitter was used in a limited way and not as part of any class activity, rather as a way for further communication with individual students who already had an account. Thus students were encouraged to continue using their own services without being required to register with a service they did not use before: as well as bringing their own device they were bringing their own services, and hence setting their own cultural parameters. There is a need to draw clear lines and describe successful practices that are considerate of students' culture. Finding out the parameters within which instructors can maneuver would ensure better implementation of mobile learning in the region.

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