Mobile Learning in Tertiary Education in the UAE

Challenges and Opportunities

The implications of implementing Mobile Learning Devices (MLDs) in major universities within the UAE, and the achievement of a ‘paperless campus’

Ismail Tamer MA Edu. • Regional academic executive for Taylor & Francis Group • IPS ME • Dubai, UAE
Background

This white paper examines and measures faculty members’ perceptions about an emerging mobile learning environment in the United Arab Emirates.

Instructors within the Higher Education field are seen as leaders of change within their classrooms and institutions, and have expressed ambitions for using new technology and trends which could contribute to better student engagement, and subsequently return on investment in terms of time, effort, expertise, budgets and other required resources.

They also identified challenges, limitations and concerns they have, ranging from the integration of new learning MLDs within existing syllabi, to the genuine need for professional training and buying in to the belief that such a transition will deliver benefits.

Due to the scarcity of existing data from external sources, the study relied on confidential and anonymous survey responses from instructors across impacted institutions.

Although some of the outcomes in this paper have already been covered on different occasions and through other workshops, the results covered here are now fully supported with evidence and statistics, which allows us to build recommendations and suggest interventions for the future.

Higher Education in the United Arab Emirates

In setting out this white paper, it was important to understand higher education within the UAE, and the settings which have allowed the introduction of mobile learning.

The domestic economy and GDP per capita was $62,900 in 2012 (CIA, 2013), and this was reflected in the investment in education, amongst other sectors.

“Higher education in the region is witnessing exciting times of growth and development, backed by efforts to build human capital and attract talent from abroad for the purposes of research and training. The trend will rise in the years to come.”

Professor Raed Awamleh, Vice-Chancellor and Director, Middlesex University Dubai.

Dubai offers plenty of ‘free zone’ campuses, encouraging and attracting local and international expertise and investments in the UAE tertiary sector, forming a phenomenon called the ‘Internationalization of Education’. Dubai International Academic City (DIAC), a free zone for higher education, is currently home to 21 of the UAE’s 37 International Branch Campuses, from 11 different countries, which is the largest number in any one location in the world, hosting a large student community from 137 nations (DIAC, 2013).
Introduction

As we move through times of rapid technological progress the education landscape has certainly felt the impact of developments in technology.

The educational environment has experienced many changes that can be attributed to several ‘accessible’ forms of technology. Mobile learning, which includes handheld devices like smartphones and tablets, is just one of these changes facing tertiary education today.

Definitions of Mobile Learning

“the use of mobile devices, such as PDAs or cellular phones in learning activities anywhere and anytime, bringing information and knowledge to situations and places where learning activities take place.”

(EqualTo and Ayala, 2012)

“learning across multiple contexts, through social and content interactions, using personal electronic devices.”

(Crompton, 2013, p. 4)

This white paper explores a case study on the implications of implementing Mobile Learning Devices (MLDs) in major universities within the United Arab Emirates.

In brief, this paper will look at the following stages and conditions of implementing MLDs:

• September 2012: the UAE launched the world’s largest shift of the nationwide education system to mobile learning.

• Approximately 14,000 tablets were circulated to students in the federal tertiary institutions. Students began studying using MLDs, facing issues concerning interactivity and connectivity, amongst others.

• This research has been conducted during the second academic year of mobile learning implementation within the UAE context, so it is believed to be a relevant time to reflect on the faculty members’ experience within main universities where mobile learning was applied: Zayed University, UAE University and Higher Colleges of Technologies (HCT).

• These institutions in total represent 40,000 students across a massive variety of academic programmes.

• Initial statements found the change to MLDs a welcome solution to some learning issues.

• Institutions face challenges and limitations that hinder a successful integration of the new mobile learning within the existing educational ecosystem. These challenges can be categorized under different headings:

They have to find more innovative ways of teaching in the classroom and engaging the students.

Dr Christina Gitsaki, Head of foundation programmes at HCT (Swan, 2012)

If students don’t learn to manage their technology, it will consume them.

Dr Jack Hillwig, Assistant Dean at the College of Communication and Media Sciences at Zayed University (Amri, 2012).
These are multifaceted issues, which could be turned into opportunities rather than problems. Potential benefits, and the need for further study, were emphasized by other studies that addressed the topic in general at the earlier stages of the case study (Eppard, 2012; Gitsaki et al., 2013; Ridge, 2013).

In response to the issues above, we conducted a survey in January and February 2014, with the participation of more than 80 faculty members from different specializations across the universities impacted by mobile learning changes, in order to investigate their experiences and thoughts about mobile learning barriers and benefits.

This white paper is the first source to publish the findings of that survey.

Subsequently, it would be relevant to list possible recommendations and future steps that could contribute to overcoming challenges and reaching optimal utilization of this trend.

**Research Methods**

In order to assess the status quo within the universities in the case study, anecdotal data was collected through meetings and discussions throughout 2013 with faculty members, who expressed a variety of hopes and concerns. An in-depth interview with a researcher in the field was also conducted. The need for further study has been reconfirmed through the survey.

Given that this study’s primary focus is the perceptions of instructors, the sample was selected on a convenience sampling method to gain as much feedback as possible, and to represent the actual diversity amongst the population concerned, which is estimated at around 2,300 instructors.

Furthermore, respondents represented a variety of available taught programmes, positions, and academic rankings with more interest shown by foundation and lower undergraduate level instructors as the mobile learning implementation process started with newcomers at the first stage in the universities concerned.
A Paperless Campus

Is there a complete adoption of Mobile Learning Devices (MLDs)? What are the reasons for not achieving what is termed a ‘paperless campus’?

The results charted in Figure 2 provide a preliminary overview of respondents’ perceptions towards the direct goal of the adoption of mobile learning. The predominant reason for the lack of adoption is the fact that implementing MLDs is not seen as a compulsory action. The absence of cultural and social concerns by respondents is likely to be a hindering factor within this research.

- 22% of respondents found that there are no educational benefits of such a shift to mobile learning, which is a matter of concern.
- This could be attributed to a variety of factors, for instance, lack of training and knowledge of how to take advantage of MLDs (which was one of the ‘Other’ category responses, along with: ...
MOBILE LEARNING IN TERTIARY EDUCATION IN THE UAE

• ‘Curriculum constraints’
• ‘Faculty resistance to change’
• ‘It’s an operational tool not a development tool’
• ‘In Engineering it is difficult to teach all courses using iPads due to some software compatibility’
• ‘Our writing classes prepare students to take the IELTS exam and IELTS is a paper-based exam’

These responses reconfirm the actual challenges faced and how we can expect further ramifications resulting from such a shift in learning; they probably deny an assumption or a misconception that MLDs offer a magic wand, which will simply solve all issues by themselves.

On the other hand, isn’t it the same natural dilemma of change?

This kind of uncertainty usually causes some issues but should be fine over time. If we recall, the decision was taken in May 2012, while the actual implementation was set for September, giving only a few months (including the summer break) for instructors, technicians, administrators, infrastructure and students to be ready.

Hence, we found that further evaluation was required, and this white paper presents the extracted findings.

Adoption of Mobile Learning in Tertiary Education in the UAE

This chapter looks at the testing of the main hypothesis in our research: Teachers are strongly confident in their level of readiness to adopt mobile learning in the UAE tertiary education context.

Table 1 shows that out of 81 faculty members, 69% (56) attended training on teaching by mobile learning.

<table>
<thead>
<tr>
<th>Responses</th>
<th>Count</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>56</td>
<td>69%</td>
</tr>
<tr>
<td>No</td>
<td>25</td>
<td>31%</td>
</tr>
<tr>
<td>Total</td>
<td>81</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 2 shows that out of the 55 faculty members who attended the training (one respondent did not answer), 40 confirmed that they are confident about teaching by using MLDs.

Bearing in mind the short notice of processing this change, this result would be reasonable to achieve at this stage in general terms, but in an educational context, which is supposed to be highly concerned about quality measures, institutions should aim for a higher score.

By combining 25 instructors in Table 1 who did not attend training with 15 instructors in Table 2 who did not find the training sufficient, we can infer that around 50% of instructors
(40 out of 81 responses) actually require training, which in this case takes a continuous form because of the instant updates in the field of mobile learning.

| The training was sufficient, and I am confident about using MLDs in teaching |
|-----------------------------|------|-----|
| Responses                  | Count | %   |
| Yes                        | 40   | 73% |
| No                         | 15   | 27% |
| Total                      | 55   | 100%|

Barriers to Mobile Learning

Figure 3 is an attempt to provide a broader view of the variety of barriers, which hinder mobile learning in the UAE tertiary education environment; subsequently this would help to identify and prioritize future interventions.

<table>
<thead>
<tr>
<th>Barriers to adopting mobile learning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low level of teachers’ readiness (need more training)</td>
</tr>
<tr>
<td>Difficulties incorporating existing learning content</td>
</tr>
<tr>
<td>Typing on small keyboards</td>
</tr>
<tr>
<td>Lack of instructional design and development expertise</td>
</tr>
<tr>
<td>Resistance from staff</td>
</tr>
<tr>
<td>Lack of mobile learning expertise</td>
</tr>
<tr>
<td>Difficulties integrating into existing learning delivery methods</td>
</tr>
<tr>
<td>Low level of institution administration readiness</td>
</tr>
<tr>
<td>Multiplicity of mobile platforms and standards</td>
</tr>
<tr>
<td>Accessibility issues (not useable by people of all abilities and disabilities)</td>
</tr>
<tr>
<td>Cost of device</td>
</tr>
<tr>
<td>Availability of interactive materials</td>
</tr>
<tr>
<td>Short battery life</td>
</tr>
<tr>
<td>Limited bandwidth</td>
</tr>
<tr>
<td>Low level of students’ readiness</td>
</tr>
<tr>
<td>Limited connectivity</td>
</tr>
<tr>
<td>Security concerns</td>
</tr>
<tr>
<td>Cost of mobile learning development and implementation</td>
</tr>
<tr>
<td>Learning being chunked up and interrupted</td>
</tr>
<tr>
<td>Small device screen size</td>
</tr>
<tr>
<td>Resistance from learners</td>
</tr>
<tr>
<td>Limited user interface useability</td>
</tr>
<tr>
<td>Limited device memory</td>
</tr>
<tr>
<td>Cultural and social environment</td>
</tr>
<tr>
<td>Other (please specify)</td>
</tr>
</tbody>
</table>
The biggest limitations (grouped into general categories) are as follows:

- Difficulties incorporating existing learning content / Difficulties integrating into existing learning delivery methods.
- Lack of mobile learning expertise / Lack of instructional design and development expertise / Low level of teachers’ readiness – this factor is considered the top barrier to mobile learning by 63% of total respondents who picked this option; in comparison only 30% of respondents found students’ readiness a potential barrier.
- Low level of institution administration’s readiness.

Integrating New Devices

The issue of integrating the new devices into existing classrooms, and traditional syllabi, highlights different factors, such as lack of proper training and availability of relevant practical and updated knowledge resources, or ‘nodes’ of knowledge, which are becoming as important as the content itself.

The founder of Connectivism theory, George Siemens, explains this recent development in education and technology: ‘Learning is a process of connecting specialized nodes or information sources. Currency (accurate, up-to-date knowledge) is the intent of learning activities’ (Siemens, 2005). In this sense, learning processes of both instructors and students should be vital and dynamic over time.

Knowledge and Training

This multifaceted issue of integrating new devices indicates the need for proper knowledge and training at different levels. In some cases limitations could be attributed to the nature of mobile learning devices (tablets in particular) and how they fit with different subjects and levels of education, and required skills like reading and writing.

In addition, there is the availability and accessibility of content, which may not be totally compatible with an existing infrastructure and which could hinder administration.

Respondents showed a clear concern about the role of MLDs in education when answering the Likert scale question shown in Figure 4.

- **It is a real concern that MLDs guide the curriculum not the opposite (N=80)**

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
<th>NA</th>
</tr>
</thead>
<tbody>
<tr>
<td>15%</td>
<td>34%</td>
<td>30%</td>
<td>15%</td>
<td>5%</td>
<td>1%</td>
</tr>
</tbody>
</table>

© FIGURE 4
Faculty members’ concerns about MLDs role in curriculum
This figure shows that only 20% of instructors don’t believe that it is a real concern for MLDs to dominate the curriculum, whilst 49% are concerned about this matter and 30% do not have an opinion, which would also indicate that there is a need to have clearer ideas and training to demystify any new ambiguous settings.

**Student Engagement**

Whilst mobile learning is supposed to contribute to student engagement, we found that the required threshold of students’ engagement became even higher, and students now come into academic institutions with greater expectations. This is what is called *disillusionment* with the realities, and here it is with technological realities in their new universities. We measured this by asking instructors about their opinion regarding the following statement:

The result is illustrated in Figure 5, which confirms that 61% of respondents perceive that interactive learning is increasingly important, as a direct impact of mobile learning.

Only 8% disagree, or strongly disagree, while 30% are still neutral about it. Overall, this basic analysis points to another need, and confirms the tested hypothesis and the concerns of Dr Ally, and Dr Gitzaki, below.

**Interactivity of New Teaching Materials**

In the *Mobile Learning: Gulf Perspectives Symposium 2013*, there was a clear concern expressed about the interactivity of the new teaching material, especially electronic textbooks. During the workshops and discussions, the anticipated impact of the local mobile learning shift is to switch from print books to eBooks in pdf format. But the actual situation after the first trial showed a greater requirement of more sophisticated e-textbooks or, more precisely, interactive textbooks.

The question asked what the levels of interactivity were (Ally, 2013) and subsequently Dr Gitzaki (2013) asked in a separate workshop what was the ‘minimum level of interactivity’ required to be adopted in the UAE context. These questions emerged from the practical use of MLDs only since September 2012, so we can expect more developed requirements over time.

**Interactivity level of learning material has increasing importance because of MLD (N=80)**

![Interactivity level of learning material has increasing importance because of MLD (N=80)](image-url)
Conclusions

We could conclude that the implication of the mobile learning phenomenon and the implementation of mobile learning devices in tertiary education simply requires proper preparation and training at multiple levels, with the availability of relevant knowledge and content from experts at each stage of implementation.

We would also recommend that institutions involved with mobile learning in general – in particular those institutions yet to be involved – expand their resources, by dedicating research efforts to introduce bespoke services and products for their requirements across all relevant platforms.

Some institutions have done a lot in this field, but it is also the responsibility of individuals to keep abreast of changes – especially those instructors who are not digital natives, and need to be armed with appropriate knowledge and expertise.

Of course, this does not negate the need for collaboration with research-based institutions overseas, taking lessons from their adaptability and compatibility experiences. Furthermore, this would serve as a global collaborative learning environment; a model for students to follow in a more connected world.

The need for further interactive materials and updated content is needed now like never before, especially with emerging pedagogies like 'flipped classroom'.

During his symposium lecture in April 2013, Dr M. Ally asked the audience: is mobile learning reality or hype? At this point, the mobile learning initiative was only a few months old in the UAE, and today we can see more clearly how far mobile learning has become a current global interest. Still there is no ready-made answer for Dr Ally’s question, but it seems that it is becoming more tangible over time with more studies and training available, helping institutions to demystify mobile learning.

There will be more questions to face, and the Dubai Expo 2020 theme Connecting minds creating the future is deeply concerned with the driving vision behind such initiatives and concepts. The future of mobile learning looks promising, with some interesting challenges yet to come.

For further details and findings resulted from this research, please email

ismailtamer80@gmail.com
References


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