How to overcome your mobile learning implementation challenges? Learn from others' experiences!

Background

In 2014, Singapore launched the national SkillsFuture movement. A key focus is Skills mastery, defined as a quality which will move the country ahead to greater heights. The Institute for Adult Learning recognises that mastery does not necessarily come from qualifications or ability alone, but requires a mindset of continually striving towards greater excellence through knowledge, application and experience. In order to achieve this, IAL promotes training and learning out of the classroom and into the workplace, with the help of technology.

In addition, the Education (Training and Adult Education) Industry Transformation Map emphasises the need to leverage on technology to better deliver learning.

There are many definitions of Mobile Learning (or M-Learning). For the purpose of this study, we defined mobile learning as "engaging in learning activities without the constraints of limited physical location, using devices that are used for communications and collaboration" (Kukulska-Hulme, 2005, pp. 1)

M-Learning is an increasingly important communications channel that organisations can use for the delivery of learning. With Singapore's mobile penetration rate at more than 150% in 2017, M-learning has significant potential to become commonplace.

Some benefits of M-Learning include:

1. Flexibility and Convenience - the usage of bite-sized learning paradigms that are granular in nature, providing added flexibility to learners for what and when they need it.

2. Easy accessibility - a high percentage of knowledge learnt is usually lost soon after a training session. With M-learning, learners are able to access information anytime, anywhere.

3. Increased learner engagement and interaction - mobile-centric features, such as geolocation, can provide learners with localised, highly-contextualised learning experiences. Incorporating push notifications provides the facility to alert or update learners whenever new content is made available.

In a study on M-learning usage in APAC countries, the employers who have incorporated M-learning in their organisations, have quoted an improvement in employee efficiency and in business results (Skillsoft, 2015).

Issue

However, there is still some resistance amongst the employers. Some of the reasons quoted for not adopting M-learning are (Skillsoft, 2015):

- Additional operating costs (eg system maintenance)
- Information security (data leaks)
- Infrastructure problems (device compatibility etc)
- Network issues (connectivity and speed)
- ·Inadequate IT support

Nevertheless, out of those surveyed, 43% responded that their organisations intend to adopt mobile learning in future, compared to 28%, who have no intention of adopting it at all. This highlights that M-learning's benefits are appealing to the employers, though they have to sort out the challenges faced.

Our study seeks to understand the common challenges businesses encounter when implementing M-Learning, and to propose a set of recommendations to overcome these challenges.

From our review of the literature done on M-Learning, the

Focus has been on:
- affordances of M-Learning; (Kennedy & Vogel, 2007)
- Students rather than adult learners (Stoerger, 2013)
- Teachers rather than adult educators (Baek, Zhang & Yun, 2017)

Some examples of studies done:
- Adult learners and the use of mobile applications and games for learning (Denizou, 2016)
- English language learning via mobile learning (Liu,2017)

To the best of our knowledge, there has been no known local study on areas of our focus.

Aim and Objectives of Study

The aim of the study is to explore the challenges faced by enterprises when implementing M-Learning and the objectives of the study are:

- Identify and analyse challenges faced by organisations planning to deploy/had deployed M-Learning
- Recommend/share best practices to overcome the respective challenges faced.

The research questions pertaining to the objective are:

- RQ1: What are the perspectives of adult learners, administrators and the Management on adopting mobile learning for their learning purposes.

- RQ2: What are those decision-making processes behind the design and development of M-learning systems, learning content, pedagogy, and modes of delivery?

Research Design

It is imperative that the research study is designed in a logical and systematic manner to ensure its alignment to the area of study. The following section contains the following:

- design strategy
- sample and sample size
- tools and procedures in collecting and analyzing data

Design Strategy

The design strategy is as follows:

The study will use case study approach on deliberately chosen organisations from different industry sectors to study their perspectives on adopting mobile learning and will use inductive approach for analysing the collected data.

Case study approach was chosen, as we wanted to study participants based on various contexts and backgrounds (Yin, 2003). Multiple-case study was chosen (as compared to Explanatory, Descriptive, intrinsic, instrumental and collective types (Stake, 1995) as we wanted to "explore differences within and between cases". Though, there are

concerns on generalization of findings to other contexts it could be overcome when "fuzzy generalization" is done, as advocated by Bassey, (2003, pp 119). "Fuzzy generalization" would mean that the research findings would have an element of "may be true". This would allow for readers to contextualize the findings to their own organizations or contexts.

Sample and Sample Size

Patton (1990, pp. 169) highlighted that purposeful sampling allows for "selecting information-rich cases" where "one can learn a great deal about issues of central importance to the purpose of the research".

The sampling framework for this study includes multiple case sampling and within-case sampling (Punch, 2014, pp. 161). For multiple case sampling, we chose organisations that had implemented mobile learning as well as those which are planning to implement it. Four organisations from various sectors, such as Education, Construction and Professional Services, were chosen for this project, out of which 50% have implemented mobile learning.

As for within-case sampling, as Lodigo, Spaulding & Voegtle (2006, pp. 140) have stated, "qualitative researchers select their participants based on their characteristics and knowledge as they relate to the research questions being investigated." Thus, we wanted to study the management (which sets the direction for mobile learning), the administrators (who implement the strategy) and the learners/staff (who are the end-users), as the key participants.

For this study, 4 organisations from different industry sectors were selected as shown in the table below. 2 had implemented M-Learning & the rest are planning to do so.

Industry Segments	Remarks	Justifications
Education	Listed in Top 5 industries for training products & services	Implemented M-Learning
Construction		Implemented M-Learning
Professional Services		Not implemented M-Learning
Food & Beverages	NA	Not implemented M-Learning

5 management, 6 administrators and 10 users were interviewed. The numbers may seem small but as Lodigo, Spaulding & Voegtle (2006, pp. 15) have stated ""case studies typically focus on small groups or individuals within a group and document that group's or individual's experience in a specific setting.

Data Collection and Analysis

Interview as a data collection method was chosen, not only because it the most used method for qualitative study, it is also the best way to gather perceptions and views about the study. Interviews allow the researcher to probe further to delve deeper into the participant's "constructions of reality" (Punch, 2014, pp. 144)

Interviews allow "adaptability" (Bell, 2010, pp. 161) as it allows the researcher to "follow-up ideas, probe responses and investigate motives and feelings". This, inadvertently, brings us to biases as the researcher may probe further on areas that resonate with the researcher's beliefs. To address this, the researcher should hold true to the research question and consider oneself to be a seeker of all information.

Between structured interview, where "flexibility and variation are minimized" (pp. 146) and unstructured interview, where in-depth sessions are conducted to gather the participants' interpretations and views (pp. 147), this study adopted semi-structured approach. Each interview took about 30-45 mins. Interview questions were prepared ahead of time and these were used as a guide during the interview. Follow-up questions were asked to gather more insights or clarifications of the inputs shared.

One of the challenges faced was in conducting the interview with some staff, in Mandarin and then translating the interview into English. The specific interview questions are in Annex A.

Data Analysis

McMillan & Schumacher (2006, pp 364) have defined qualitative analysis as a "relatively systematic process of coding, categorizing and interpreting data to provide explanations of a single phenomenon of interest". This process is best described in the following diagram.

Real
Abstract

Code
Code
Code
} ———— Category

Code
Code
Code
} ———— Category

Themes
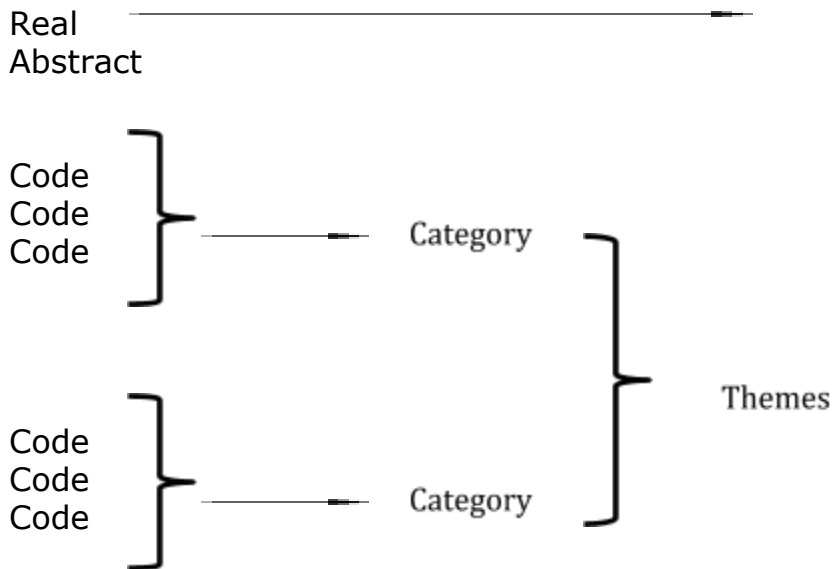
Source: Saldana, J. (2016). *The Coding manual for Qualitative Researchers*. UK: SAGE Publications

A priori Coding (Lochmiller & Lester, 2017, pp. 174), where the key words or phrases were drawn from the type of question asked, was used to analyse the transcribed interviews. Memoing was also used to capture the key points observed during the interviews. From the coding, the inputs were categorised into Training, Security, Staff and Organisational Culture, to name a few. From here, all the categories were consolidated and key findings in three main themes were as discussed below.

Findings

The findings could be categorized into 4 major themes, namely,

1. Business Case
2. Change Management
3. Cost Concerns
4. Cultural Factors

Business case

Organisations do find value in implementing mobile learning. One of the obvious reasons given was the reduction in classroom training hours required which means less absenteeism from operations.

Given the changing dynamics in the current & future business environments, a mobile platform is an effective means to disseminate timely and up-to-date information quickly.

Ready accessibility to content & knowledge via a mobile means also means correct information on less common work tasks can be obtained as & when needed.

This accessibility was also much appreciated by workers new to their roles as it means they do not need to constant approach their buddies/supervisors who may not be available.

Management shared that they are keen to implement M-Learning & had been considering it for sometime but feel their their staff is not digital savvy enough.

They are also concern whether staff will use M-learning after the investment was made.

There is also an ignorance of Mobile-Learning capabilities. A number of interviewees from all the 3 groups i.e. management, administrators & users had had shared concerns whether M-Learning can help transfer of knowledge, for instance, in a classroom scenario, it is always possible to clarify on the spot.

Change Management

Implementation of M-Learning is not just an IT project or a learning & development task. It embraces change management. M-Learning implementation is not just merely adding on a mobile learning option to existing work structures to replace/reduce classroom training. It involves a holistic review of processes & buy-in.

This point was often missed from our conversations with the interviewees at management level & those tasked with the implementation.

From the interviews, size of the organisation does matter not just due to economies of scale reasons but also having more hands to distribute the tasks in the change management process.

Though some users are aware of the additional tasks required during the implementation of m-learning, they showed a "can-do" attitude in attempting to adapt the processes, in one of the organisations.

Also, some users shared that though they are willing to try mobile learning, including setting aside of personal time to use M-Learning, the nature of their industry is such that they can be called back on their off-days & thus have no opportunity to self-learn compared to traditional classroom training where they are unlikely to be called back.

<u>Cost Concerns</u>

A common view is that using mobile learning is expensive as there will be costly courseware development, platform subscription fees, user licences etc. to bear hence M-Learning is difficult to justify to top management.

Since the information is online, there is a need for additional cyber security considerations (& costs) which is another top management concern.

<u>Cultural Factors</u>

The findings show that the culture of the organization has an impact on the successful implementation of mobile learning in the organisation. Factors such as management involvement, passion and openness of the staff to undertake new and challenging tasks, play a major factor.

Recommendations

<u>Business case</u>

Whilst a lot has been done at the national level to nurture & encourage the use of technology for learning, for instance, the iN.Lab such as InnovPlus and publications on blended learning by the research arm of

IAL, based on the answers from the interviews, there is more to done to to educate on the design features & possibilities of mobile learning.

M-learning is not about learning on mobile devices but bring the learning to where the learners are. Hence it's imperative to make the experience enjoyable & the process simple.

Just like what make us how go to Grab for a ride & Food Panda for a bite - it is about convenience & experience!

Should users find M-Learning a positive experience, they will naturally want to use M-Learning just like what made many of us here are using the apps mentioned earlier.

Change Management

Like any change management initiatives, comprehensive planning is needed, the involvement of different departments is a must, current work processes need to be reviewed & sufficient preparation of the ground is an absolute before actual implementation. The staff was made aware of what is coming & efforts made to change mindsets at all levels.

It is also advisable to empower those involved with at least an appreciation of the necessary skill sets & knowledge before implementing M-Learning instead of just depending on consultants & vendors.

Cost Concerns

Understandingly, anything new does tend to involve additional costs. However, costs concerns need to be looked at holistically. The cost concern raised by the interviewees did not take into account how M-Learning may change existing cost structures especially if work processes are changed. There are costs involved in the traditional classroom courses not these go beyond course fees but other overheads like staff time spent in doing manual processes, utilities etc. Whilst there is an initial costs & maintenance costs in implementing M-Learning, if with change in work processes, some of these costs may be recovered.

Further M-Learning may potentially increase productivity e.g. less absenteeism from work as no longer need to be away from work to attend classes.

M-Learning platform is a quicker, more timely & easier channel to make changes or disseminate new information which done the traditional way actually have a cost to it.

Since security of information, is of concern to some of the organisations and ensuring cyber security may be costly,organisations may choose the cheaper option of only placing non-confidential information on the mobile platform.

Cultural factors

We recommend that management involvement includes:
- ◆ Setting directions at the organisational level so that there is alignment to project
- ◆ Having communication sessions with staff for the buy-in to the project
- ◆ Hiring personnel with relevant background to be part of the implementation team
- ◆ Ensuring adequate training sessions were conducted for others so that implementation is smooth
- ◆ Identifying a team leader amongst the administrators to lead the project.

Openness and positive attitude of staff at all levels is crucial for the success of M-Learning implementation as it is something new & involves lots of work. Hence a "Can-do" attitude is useful to cultivate. It is also important to ensure the staff see the long-term benefits of the project.

When users encounter difficulty, they need assurance that help is available & on-hand.

To ensure project success, openness in communication between the management, administrators and staff/users is needed. There must be channels for feedback to be given easily & these channels is readily available.

Conclusion

Given the preliminary findings above, we hope that final report of this study will:

(a) serve as a useful resource for policy makers intending to formulate future learning innovation initiatives

(b) be an useful reference for TAE professionals implementing M-Learning solutions in workplaces.

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Interview Questions

1. What are the challenges faced when they use or plan to use M-learning?
2. What are the successes faced when they use or plan to use M-learning?
3. What factors make it easy for the learners and administrators when they use or plan to use M- learning? (their attitude, their readiness status, their past experience, are they forced to use learning technology, are they eager to use learning technology, Learning technology affordances?)
4. What factors make it difficult for the learners and administrators when they use or plan to use M-learning? (time commitment, priorities, no support from family and employer, no support from training organization)
5. How relevant do the learners find the learning acquired when using M-learning? (is the learning pedagogy driven?)