

AN INTEGRATED MOBILE LEARNING APPROACH: ESTABLISHING A NEW ATKP SURABAYA'S LEARNING CULTURE AND SYSTEM

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Abstract

The convergence of telecommunications and information technology has accelerated the application of mobile technology in various areas of society, including the field of learning. M-learning (mobile learning) is only one kind of the application of mobile technology in education and training that is now being popularized, applied and available in the market place. As an institution that promotes modern education and training in the Ministry of Transportation Republic of Indonesia, ATKP (Akademi Teknik dan Keselamatan Penerbangan) Surabaya anticipated the change of learning technology.

To meet this challenge, ATKP has started to implement m-learning and its integration with other learning system. As a result, ATKP is now able to provide the technology, establish the rules and policy, help develop human resource, as well as provide benchmarking services. Up to this date, ATKP has achieved and implemented a whole new idea in learning, especially in utilizing information and communication technology in mobile learning, as shown by their staff as well as the cadets. It is recognized that the ATKP future development is largely determined by the efforts related to the growing

awareness in the academic community in optimizing new learning resources that have been constructed.

Key words: Learning Management System, Learning Content Management System, Virtual Class System, Knowledge Management System, Change Management, Mobile Learning

A. INTRODUCTION

The development of mobile technology in the late 21st century has opened up many opportunities for the utilization of SMARTmobilephonedevices. If the first mobile phone (hand phone) was only used to communicate (audio and text), now the use of this telecommunication “gadget” has evolved into a worldwide group of expanding activities for the public and private sector including communities and the population.

With all the development, mobile devices nowadays have more features and use than that of years ago. These days, mobile devices are widely used as a means of entertainment, marketing, and education.

Mobile learning (m-learning) is considered as an advanced functionality of e-learning that has been developed in

previous phases. The development of m-learning is triggered by an increase in broadband mobile technology and capacity building and features a more complete mobile phone that meets business and the private sector needs.

As the availability of bandwidth is getting better from time to time and the mobility of people is inclining, the need for mobile learning solution is now of the essence.

ATKP has adopted the utilization of mobile technology as a supporting instrument in learning, as it became more popular across the world.

ATKP's move was primarily motivated by a vision of learning institutions that promotes innovation through the use of information and communication technology. M-learning implementation in ATKP Surabaya intended to anticipate some important things like the rapid change of information and how one should have the ability to update it anywhere and anytime. It is also a means to meet the expectedly growing mobility of cadets and staff.

To ensure the sustainability and effectiveness of learning in ATKP Surabaya, the implementation of m-learning is integrated with the overall learning system that already exists or developed. In other word, m-learning is only one sub-system component of a learning system based on information and

communication technologies, or better known as the Integrated Laboratory of ATKP Surabaya.

B. CONCEPT OF MOBILE LEARNING

Like e-learning, m-learning is defined differently by academics and practitioners. Parsons and Ryu (2006) generally define m-learning as the delivery of learning content to learners using mobile computing devices. Kambourakis, Kontoni, and Sapounas (2004) define it as, "The point at which mobile computing and e-Learning INTERSECT to produce an anytime, anywhere learning experience". Petrova (2004) considers that the learning needs when and where was the promised by e-learning in the previous stage, is expected to actually become a reality through m-learning. While Georgiev, Georgieva, and Trajkovski (2006), define m-learning as an educational method is new and more flexible Than previous e-Learning applications. For example, through the m-learning students can learn some course material, answering questions, and communicate with faculty, although they are in the canteen, dormitories, or library. Since m-learning is classified as a new learning method in education, the development, identification and research on m-

learning pedagogy is still in its early stages. Therefore, the implementation of m-learning is predicted to grow dynamically in line with the developments and findings obtained from the results of those researches. Thanks to the growing of technology, it is now possible to integrate m-learning systems and other learning applications. By integrating m-learning with the LMS (Learning Management System), any track record of learning activities through mobile devices can be stored and managed automatically.

Experts generally agree that m-learning has a lot of potential and advantages that can be used to support the process of education and training. Barker, Krull and Mallinson (2005) mentions three main advantages given to learning as an impact of mobile technology development. The first is portability that allows the movement of teachers / instructors and students become more flexible. Secondly, collaboration that allows the learners to share learning resources in various forms and media formats. And thirdly is the motivation, which gives the learners new motivation in learning within a more informal situation.

Attewell and Webster (2005) in their research on the use of m-learning among teachers, mentors and students also find a

number of important findings that demonstrate the potential of m-learning, including:

- allows truly anywhere, anytime, personalized learning
- can be used to enliven, or add variety to, conventional lessons or courses
- can be used to remove some of the formality which non-traditional learners may find
- unattractive or frightening and can make learning fun
- can help deliver and support literacy, numeracy and language learning
- can help learners and teachers to recognize and build on existing basic literacy skills
- which allow young people to communicate in notational form via text messages
- facilitates both individual and collaborative learning experiences
- enables discrete learning in the sensitive area of literacy
- can help to combat resistance to the use of ICT by providing a bridge between mobile
- phone literacy and PC literacy
- has been observed to help young disconnected learners to remain more focused for
- longer periods

- can help to raise self-confidence and self-esteem by recognizing uncelebrated skills,
- enabling non-threatening, personalized learning experiences and enabling peer-to-peer
- learning and supportⁱ

With the potential and advantages, ATKP Surabaya considers that the implementation of m-learning is to be paid attention thoroughly.

C. GOAL AND OBJECTIVES

The application of m-learning in ATKP Surabaya aims to enrich the learning process so it is both flexible and applicable to meet the needs of the ATKP mission.

With a more flexible learning, it is expected that cadets, as well as the staff of ATKP to have better motivation in improving the quality and effectiveness of the learning itself. In addition, the application of m-learning is also intended to provide variety of methods and models to learn that there are many options to choose.

Variations of available learning model are expected to shorten the length of learning time so that cadets can repeat the lesson material at anywhere and anytime. On the other hand, variations of learning model that may be

applied will change neither the consistency nor the curriculum because m-learning is designed to integrate with the overall learning system.

In the end, the application of m-learning is also expected to build a new learning culture, where the cadets will be more independent in learning and more used to take advantage of tools and features of mobile technology.

D. APPROACHES AND STRATEGIES

Approach and implementation of m-learning strategies in Surabaya ATKP will adapt to the condition of the campus, faculty, staff and cadets, and the development of mobile technology and research in the field of mobile learning. Implementation approach includes technology approaches, pedagogic approaches and change management approaches.

This m-learning technology needs an open system and good features, as well as integrity, synergy, and the continuity of learning, which is why Hot Lava Mobile is chosen. Solutions that can be provided by these tools are the manufacture, the dissemination and the analysis of mobile content. One of the strength of this tool is the ability to create content in a single-source and published in multiple handhelds, mobile phones (Symbian Phones, BlackBerry, Windows Mobile Pocket PC's, iPhones, etc.) and tablets.

Content formats that can be created through this tool varies, ranging from Flash 7 and Flash 8, FlashLite 1.1, FlashLite 2.2, SVG, audio (mp3, amr, mid, wav, aiff, mmf, etc.), videos (3gp, mp4 , mov, etc.), tests (data captured), Quizzes (practice), polls / surveys (data captured), images (all major types), text, numbered lists, up to bulleted lists. Features provided content creation is also quite comprehensive, ranging from custom table of contents, right to left text, auto start multi-media, video streaming, video JAR, J2ME/JAR results send, customize icon image, audio player J2ME/JAR, data collection , until the background images.

For a more optimal use, the tools are integrated with Learning Management System (LMS) that already exists. Thus, the LMS serves as the central management of the learning process, from content creation, content distribution, content access, to examinations and certification.

Pedagogically, the approach taken was to adopt the results of research application of m-learning in education and training institutions. One of the considerations is a recommendation that m-learning is more suited to present the summary of knowledge, principles, troubleshooting tips, and test capabilities. For example, m-learning content is used to present the essence of each subject, for the spread of basic skills test,

presentation of theoretical principles and concepts, as well as other instant content.

The change management aspect is to be paid more attention than anything else, considering this is a new thing in the environment of ATKP Surabaya. This change management program includes socialization, campaigns, seminars and training, workshops, and events that are competitive on internal and external environment of ATKP Surabaya. Rules and policies have also been established to support the practice of M-learning on the field.

E. SYSTEM ARCHITECTURE

Interconnection between m-learning and learning systems in ATKP Surabaya in the system architecture is shown below

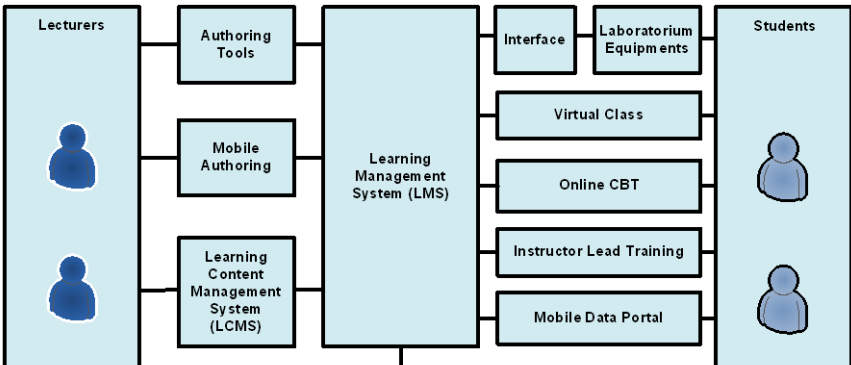


Figure 1. Integrated Learning Architecture System at
ATKP Surabaya

Based on the picture above, it appears that m-learning is an integrated part of the learning system ATKP Surabaya. M-Learning is integrated with the LMS because all the contents generated by Hot Lava Mobile meet e-learning standards (SCORM), likewise Learning Content Management System (LCMS), Virtual Class System (VCS), Knowledge Management System (KMS), and others. All applications and learning data stored in the database and application servers are stored in a special room.

F. ORGANIZATION AND PEOPLE DEVELOPMENT

To smoothen the implementation of m-learning, the leader of ATKP Surabaya has taken the strategic steps related to the organizational and the supporting human resources. The very first step is to establish a special unit manager of e-learning which includes the management of m-learning. This unit stands alone and is responsible directly to the Director of ATKP Surabaya, and coordinate with other related units such as computer centers, academic agencies, libraries, and other related units.

The managing unit of this e-learning technology is led by manager-level officials and supported by a number of experts and management staff with various areas of expertise. Among the experts who already integrated are: LMS Specialist, Content Developer, Administrator, and Trainer e-learning

To further develop the knowledge of each resource, regular training, workshops, and seminars have been programmed carefully. Comparative studies have also been conducted to compare our e-learning and m-learning technology with other successful institutions.

G. CONCLUSION

The application of m-learning in ATKP Surabaya is still on its early stage. Even so, the approach and strategy that has been applied to this stage can be considered as a good foundation for further development. It is said on the basis that the infrastructure of the technology is

comprehensive; the thorough and focused development strategy; and the thoroughly studied approach, carefully paying attention to important aspects of m-learning implementation. Future development relies heavily on the sustainability of policies that have been built at this time, especially from the management. In addition, these policies must also be specified in regulations, standards, and technical and operational guidelines that will oversee the overall implementation process.

No less important is the program evaluation of all the implementation processes that have been applied, including all research conducted by lecturers in everyday learning process.

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Footnote:

ⁱJill Attewell. 2005. *From Research and Development to Mobile Learning: Tools for Education and Training Providers and their Learners*. <http://www.mlearn.org.za/CD/papers/Attewell.pdf>