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The Positive Impact in Changing of E-Learning Environment to M-Learning to Enhance Critical Thinking Skills in Foreign Language Learning

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ABSTRACT

This study has investigated the impact of using Mobile Learning Model alias M-learning with the principles of the connectivist learning theory to enhance the critical thinking skills of students who learn Mandarin as a second foreign language at state-of-art-study level. M-learning is a new global trend in education of distance learning with the robust development of an innovative and interactive ICTs. As a highly popular possession in the usage of mobile phone for learning purposes in the context of language learning which has given the importance of attention practitioners and researchers especially in distance learning in education. However, promoting mobile phone integrated learning has been seen a very few efforts in the scope of Mandarin learning. Therefore, to find out the importance of m-learning in language learning in number 246 students have been interviewed face-to-face to collect qualitative data and then analyzed for themes that described the essence of experiences shared among the participants. The results have shown that m-learning can integrate more and more opportunities to mitigate challenges in a variety of ways to support the learning and teaching of a language. But, results have reflected that it has different perceptions about the M-learning use in language learning, therefore, some integrated measures were proposed for language learning in the M-learning environment.

CCS Concepts

Information systems → Information systems applications → Mobile information processing systems

Keywords

Higher Education, blended learning, language instructions, e-education, e-learning trends, Lifelong Learning Platform

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1. INTRODUCTION

The learning and teaching mechanisms in the robust developments in ICTs have indicated that the concept of four wall classrooms no more exists and traditional way of communication which by e-mails with peers seemed disappearing rapidly. As a result, two concepts which were distance learning and e-learning came into practice. The scenarios have further advanced nowadays and which delivered to language learners personal mobile devices. Language learner can synchronize and consume those contents freely and share fairly with peers.

In addition, mobile devices which can bridge the knowledge harvesting gaps in education have become a common platform in learning and teaching. It seems to be that it impresses distance learning to perform digital base knowledge consumptions with multi-purpose mobile devices from reading to GPS savvy. It has reflected the next wave of people's life is in mobile devices. So, learning and teaching will keen on mobile learning platforms which would be the best tool to address novel challenges in distance learning of the 21st century. Therefore, it has predicted that knowledge consumptions in mobile learning may increase rapidly and mobile and technologically savvy workforce would be hyped and to be the future of workplace learning.

2. E-LEARNING VS M-LEARNING

The concept of e-learning is representing the mean of electronic which any form of learning happens or delivers base on electronic devices. So, contents in e-learning have been delivering network environment since the robust tools in ICTs including the Internet. In contrary, m-learning is representing the mobile but portable devices which can be any form of knowledge that hand-held. In summing up it reflects that m-learning is a sub-forms of e-learning because e-learning and m-learning are mainly functioning on digital devices which key to communicate digital contents either to teach or learn. However, key similarities, as well as differences, can be identified in between them which are given in table 1 below.

Table 1: similarities and differences in e-learning and m-learning

Key areas	e-learning	m-learning
Function	Teaching and learning happen merely to preserve some knowledge.	By distribution of knowledge via portable devices that teaching and learning happen mainly to interact with contents of

		knowledge.
Approach	Very formal and structured as a result need basic skills and knowledge to use the contents. So very much time bound.	Basically informal but both structured and non-structured contents can be seen so very flexible. Most of the time key words which use to introduce the approach are in-demand, context - aware and just-in-time etc.
Form	Main features are given comprehensively which build the contents are heavy so not easy to skip the knowledge due to inter-connectivity.	Contents very succinct but can search in-depth information.
Contents	Various contents are available including animated slides, case studies and quizzes etc. So, contents get the nod to teach specific skills or impart in-depth knowledge on a subject to audience.	Vigorous contents are amalgamated with digital contents. Similarly, chosen contents that support an ongoing learning process where the learner needs quick access to bits of information, usually on the go.
Evaluation	Basically benchmarking of the knowledge.	Fully performance based which direct to improve knowledge, skills and experiences.
Devices	Mainly computer or laptop with windows base.	Any mobile devices with windows or android facilities.
Accessibility	Chosen or static environment with fixed devices.	Depends on the environment and the requirement which mean no restrictions due to portable devices.
Duration	Usually time spans fifteen minutes to one hour.	Very shorten and most of the time three minutes but less than ten minutes.

In summing, m-learning is an important process which is dynamic than the concept of e-learning because m-learning needs to be concise and to the point that indicates transferring of e-learning knowledge contents into m-learning format or contents it will not

simply achieve the purpose of its goals. So, fundamental features or attributes of the two learning methods can be highlighted as in table 2.

Table 2: fundamental features/attributes of e-learning and m-learning

e-learning	m-learning
Cognitive prospective	Mobile technology prospective
Emotional prospective	Learning prospective
Behavioral prospective	Learner prospective
Contextual prospective	

In concerning main attributes in the M-learning process which includes mobile technology, mobile learner and mobile learning against the e-learning activities. In M-learning that mobility of technology [13] refers to the digital devices that are used to deliver different digital contents and multimedia instructions via sophisticated tools in information and communication technologies such as emails, Wireless Application Protocol, Bluetooth, Short Messages, General Packet Radio Services, and Multimedia Message Services that create a platform for mobile learner to use them. It has reflected that with these facilities in m-learning, learning can start at any open space at any time which is building a positive interaction with teachers, peers and online learners without [7] restrictions have been seen informal learning.

But, m-learning has several forms, therefore, it can divide basically into three types as e-learning, m-learning, and u-learning. So, those m-learning types can be further generalized [6] as ubiquitous computing system which is computing devices are integral but embedded into the background of daily life. The concept of u-learning has defined [8] that it can be applied to the learning environment where every learner has access to mobile devices and services, whenever and wherever it is needed. Therefore, as [3] identify the important characteristics of m-learning systems are; supporting to synchronous and asynchronous education; supporting to e-learning standards; supporting to available permanent Internet connection between the mobile learning system and the users; to locate of the users and build access to learning materials and/or administrative services.

3. CRITICAL THINKING

The concept of critical thinking can define various perspective such as philosophical, psychological and educational which is very important for teaching and learning. So, [9] urges that critical thinking is an active, persistent and careful consideration of a belief or supposed form of knowledge in the light of the grounds which support it and the further conclusions to which it tends while [5] see it as the intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, and/or evaluating information gathered from, or generated by, observation, experience, reflection, reasoning, or communication, as a guide to belief and action. However, the significant contribution in critical thinking for education [4] explains that a clear conception for an integral part of education because the conception might differ with other contexts. Therefore, without a clear understanding of the concept of critical thinking, difficulties await educators who endeavor to teach and measure it. Further, the expansion of language learners critical thinking skills, teaching and learning methods adopted in the language learning should be able to create a conducive teaching and learning environment. So,

critical thinking assessments have to be conducted in basically in three ways [2] that to assess for learning, to assess as learning and to assess learning. As a result, it can be seen that these are inter-related with an assessment of learning more easily distinguished from assessment for and as learning.

However, critical thinking will prosper the learner to enhance skills necessary for complete the learning process in collaborative learning which is influenced by a social constructivist philosophy that views learning as the construction of knowledge within a social context. As a result, critical thinking skills encourage acculturation of individuals into a learning community in three approaches which are: the learning setting; the feedback, and the assessment tools. Working collaboratively entails learners to work in pairs or groups to share the learning experience. Also, it makes responsible for each other's' learning success. So, learning setting should be a collaborative learning platform which may involve a joint intellectual effort by learners and the teachers together. Once the learning setting is to establish the feedback mechanisms on their progress and achievements have to be monitored. This is very significant when differentiates the nature of the feedback the learner is receiving because feedback is essential to help students be the self-regulated learner. The importance of feedback and self-regulated learning in the language learning [15] mention that intelligent self-regulation requires that the learner has in mind some goals to be achieved against which performance can be compared and assessed. As a result, in academic settings, specific targets, criteria, standards and other external reference points help define goals. So, feedback is information about how the learner's present state of learning and performance relates to these goals and standards. Similarly, learners can generate internal feedback as they monitor their engagement with learning activities and tasks and assess progress towards goals.

4. RESEARCH METHOD

It has believed that connectivist learning theory brings lots of opportunities for M-learning process because it has created [10] many networks of connections to form a good teaching and learning environment. The principles of connectivism also state that learning is a process of connecting specialized nodes and sources of information. Further, a learner is urging to seek more knowledge is more important than what the learner currently knows. Therefore, the driving force of connectivism [11] is the intention of gaining knowledge and the connectivist theory [14] has become increasingly common, since the 1980s, with the rise of digital technologies that often referred to as "digital natives". As a result, to understand critically ways in which to bridge the gaps of digital natives' teaching and learning process with smart technologies especially in the M-learning atmosphere is crucial in order to design a teaching and learning program which can effectively meet learners' needs. However, it has seen that though m-learning is quite popular among teaching and learning process especially in science and technology it is very limited in language teaching and learning usage. Therefore, to find out the importance of m-learning in language learning 246 students in numbered have been interviewed who learn the Chinese language as a second foreign language face-to-face to collect qualitative data and then analyzed for themes that described the essence of experiences shared among the participants as research findings.

5. RESEARCH FINDINGS

It has reflected very broadly that m-learning enhances critical thinking skills in many aspects because it has facilitated social circles of learners to collect and collate information and to share

knowledge and experiences with peers. So, gained knowledge creates critical thinker to apply that knowledge critically to achieve rich opportunities in the digital competitive knowledge advantage. Further, it has created revenue for the learner to connect formal and informal learning environments to become a new learner which leads to promoting learner-driven digital content creation and collaborative knowledge sharing peers. It has seen very positively that teaching and learning motivation has significantly increased and developed towards facilitation of communication, collaboration and knowledge and resource sharing within the M-learning virtual environment. And, most importantly, teaching styles of the academic and learning modes of the students have changed into the flexibility of time and locations and familiarize with digital knowledge contents. In addition, the passive learning styles of students have changed into more active and participative learners while learning the digital contents because they have assigned to perform multiple tasks which as a listener, reviewer, contributor as well as a learner. Therefore, the completion of all tasks [15] depend on an attributes of critical thinking skills with mobile instructional information.

M-learning has established pedagogical benefits which have not only in critical thinking but also in creativity that build a trust of a teacher and a learner to contributes to the authenticity of the teaching and learning which is very important. One of the positive impact of pedagogical skills or benefits in m-learning is that it assists to construct the mobile or the digital arte facts to make the teaching and learning more encouraging with seamless engaging. The effects of seamless learning in m-learning has facilitated [16] many aspects such as formal and informal learning, individual and social, and physical and digital spaces. Similarly, the M-learning process has shown that it can enhance massively skills in literacy especially visual literacy, media literacy, digital literacy, computer literacy and communication literacy which are blended literacy in language literacy. Those blended literacy enhances [17, 12] ample new vocabularies of the language teaching and learning because digital contents of m-learning has been created and developed by practical examples which create the teacher and the learner to think critically the gain skills in literacy to use effectively within the teaching and learning space which is open to peers to gain the knowledge of a new language.

So, ways in which enhance the critical thinking skills of language learner has improved several perspectives in the m-learning process against the e-learning which summarized in the table 3 below.

Table 3: m-learning process against the e-learning

Subject perspective	Learning perspective
Location (no geographical obstacles)	Learning can be happened anywhere any time (24/7).
Way of offering and receiving instructions.	Basically digital forms with audio and videos, graphics and animation, so learning in the field or while mobile can be performed.
Way of communication between the teacher and the learner.	Instant delivery of e-mail or SMS so instant communication happens in Synchronous manner.
Peer to peer communication	Flexible communication can be seen most of the occurrences so audio or video-

	teleconference, instantaneous messaging happen frequently through rich communication due to one-to one communication. Important attribute is reducing of inhibition.
Evaluation and testing of the learner knowledge, skills and experiences.	Anywhere any amount of time possible to test or evaluate an individual's knowledge and skills while giving an instant feedback.
Final test and grading	<p>More into practical oriented exams can be set on site. Observing of the learner engagements can be monitored from remote location. An individual presentations can be observed with much richer communication to grading of knowledge and skills.</p> <p>Automatic translation for delivery of instructions in many languages.</p> <p>Simultaneous collaborative group work can be built in electronic-based assignment delivery systems which easy for e-delivery of assignments at any place and time</p> <p>Instructor's time used to offer individualized instructions and help.</p>

6. FURTHER RESEARCH

There are many fields which have explored e-learning but the M-learning is relatively unexplored. Therefore, more research has needed to expand knowledge in this area. As a new field, m-learning provides numerous avenues of research. This study has only examined Chinese language learning students who studying it as the second foreign language in one institute. Therefore, future studies could replicate this research in different contexts of the subject by examining the data collected similar to that of this study. As evident from the results of this research, languages that differ in their teaching and students contexts also differ in their acceptance of m-learning technologies in language learning because [1] claims that importance of m-learning has to be conducted in multiple contexts in research instead of communication, information search or receiving learning content.

7. CONCLUSION

A foreign language teacher, as well as a learner who engage with teaching and learning of Chinese language as the second language, will benefit from this research study to reconsider best practices in teaching and learning strategies when considering the integration of mobile device technology. The learning space physical or virtual is requiring greater attention in order to remain competitive with an international cross border research and education community. Technology integration relies on a commitment to on-going research and development of software and hardware platforms. The

online delivery of educational resources and artifacts will continue to challenge the perceptions of the known learning space. The M-learning spaces will become the future, and technology will evolve driven by market forces. This research study will assist in further discussion about applying critical thinking skills when using mobile technology. Therefore, it is exciting to reflect on the progress of m-learning in language learning as a valuable commodity in an online global ecology.

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