

The Research of China's Policies and Practices of Life-long Learning in U-learning Environment

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Abstract: Recently, life-long learning and u-learning are significant concepts in the area of technology-enhanced learning those have changed learning. This paper begins with an overview of u-learning and life-long learning. And then, it focuses on the review of China's national policies of life-long learning. By using Keller's Attention, Relevance, Confidence, Satisfaction (ARCS) model, it finally analyzes Shanghai Life-long Learning Network as the practice case.

Keywords: life-long learning; u-learning; notional policies; learning platform

1. Introduction

The 21st century is an era of knowledge economy and one reform after another has been happening in the education and learning area. Nowadays, the idea of life-long learning has won more and more popularity among people from all walks of life. Building a life-long learning system is no longer just an idea or concept, but evolves into an actual practice of education reform and social activities from which the system is enriched and becomes mature. With the rapid development of computer technology and network communication technology, a new leaning mode based on ubiquitous computing technology-ubiquitous learning, emerges as the times require. Ubiquitous learning is very flexible and practical as anyone who wants to learn could receive education in any form and at any time. This learning concept offers a brand-new life-long learning mode and provides new opportunity for the development of life-long learning, which greatly promotes the building of life-long learning system.

This paper first explores life-long learning theory and ubiquitous learning theory and then makes an interpretation of the future development of current life-long learning from the perspective of China's policy planning. Using Shanghai-an economic center city as the research setting and combining ubiquitous leaning mode, the author investigates the current status of Shanghai's life-long learning system which has adopted ubiquitous learning mode. Then we analyze the design of public service platform open to life-long learners as the case of the infrastructure construction of national policies.

2. Literature Review

2.1 Ubiquitous Learning Overview

As technology becomes more powerful, ubiquitous learning (u-learning) has been a mainstream way of learning in recent years. There are different views in defining and characterizing u-learning, but most researchers believed that u-learning derived from the concept of ubiquitous computing. The term “ubiquitous computing” was coined by Mark Weiser, described as “the calm technology, which recedes into the background of our lives”. His vision allows people and the environment with the combination of various computational technologies to exchange information and services at anytime and anywhere (Weiser, 1991). Then, “ubiquitous” was used into the field of education, promoting the generation of “u-learning”. Birgit Bomsdorf pointed out, that “ubiquitous computing leads to ubiquitous learning allowing to embed individual learning activities in everyday life.” (Bomsdorf, 2005)

To some extent, u-learning combines the strength of e-learning and m-learning. Dey Casey (2005) formulated the view of “u-learning = e-learning + m-learning”. Although there are various views of u-learning, a broader definition of it is “anywhere and anytime learning”. U-learning is intended to build a learner-centered intelligent environment, supporting learners use all kinds of terminals to access learning content regardless of time and place. In u-learning environment, learning will be more likely to happen, learning support services also will be more humanization, and learners' interaction with the environment will be further strengthened. U-learning truly reflects the “people-oriented” learning conception and brings innovation of learning styles.

2.2 U-learning and Life-long Learning

2.2.1 The related concepts of life-long learning

“Life-long learning” and “life-long education” are inseparably two concepts. Both of them are proposed and evolved in the basis of human social change, under the background of human society transformation from industrial economy to knowledge economy. Life-long education thought that education should be throughout the beginning and end of life. In other words, people can also accept education via kinds of ways after the completion of compulsory education or basic education. It breaks through the framework of formal school education, regards education as a continuous process in personal life, and implements a uniform from preschool to old age throughout the educational process.

Compared with “life-long education”, “life-long learning” emphasizes learner-centered, focuses on the diverse needs of learners. From the perspective of individual learners, learning is not only the need of earning a living, but also is the personal development need. It has become an essential part of one's life. 1st Global Conference of Life-long Learning proposed that life-long learning is the 21st survival concept (Longworth & Davies, 1994). People obtain knowledge, change behavior, and develop ability by continuous learning. Promoting life-long learning is an important means to deal with the world of social development needs.

U-learning refers to education is no longer limited by time and space, realizing “anywhere and anytime learning” from a technical point of view. Life-long learning emphasizes a type of learning concept, and the u-learning focuses on the learning support from technology. But they have consistency in concept hierarchy – the meaning of continuous learning. U-learning is more flexible and practical that learners can accord their characteristics and needs to choose the most suitable learning for their own, and the learning time, place, content and ways are all personal. In some sense, u-learning makes it possible to access learning network and get learning service anytime and anywhere. It provided a new

learning model for life-long learning, adapted to the needs of life-long learning, is also expected to be a strong support for the built of the learning society.

The concept of the “learning society” emerged with two authors in the 1960s and 1970s. It is closely related to life-long learning and life-long education. After much debate, UNESCO (2005:60) offered the following as a view of the learning society:

Thus, learning, as a phenomenon may generalize at all levels of our societies and offer a model for organizing the time, work and lives of our institutions. Such an evolution illustrates a paradigm shift. On the one hand, education and learning can no longer be confined to a set and settled space-time, but may develop over a lifetime. On the other hand, the human actor must be put at the heart of the continuing process of knowledge acquisition and communication.

Therefore, building a learning society and cultivating life-long learning ability are necessary conditions for implementing life-long education.

2.2.2 National policies of life-long learning

Life-long learning theory has brought profound changes in the field of education; u-learning has given new idea for it. In order to put forward life-long learning and the construction of a learning society, government has been drawn up many polices.

Currently, China is using IT to propel modernization and industrialization, promoting life-long education actively, thereby constructing the life-long learning system. In 2002, *the 16th National Congress of the Communist Party of China* clearly put forward that constructing a learning society would be an important goal of building well-off society in an all-around way in the first 20 years of this century. Subsequently, the national Ministry of Education had further made explicit strategic plan of "the education information construction projects": promoting community education actively, constructing life-long learning system rapidly, and facilitating learning society in the paper of "2003-2007 Year Education Promotion Motion Plan". In 2010, *the Outline of China's National Medium-and Long-Term Program for Education Reform and Development (2012-2020) (the Education Reform and Development Outline)* proposed “focusing on the construction of Chinese education information public service system and learning society support service system”, in order to realize rapid development of China's education. After that, the Ministry of Education authorized *China's Ten-Year Plan for Educational Informatization(2011-2020)* to confirm the tasks of *the Education Reform and Development Outline*. Meanwhile, the *Ten-year Plan* asked to build flexible, personalized IT learning environment which can meet learning needs of different groups and provide high-quality educational resources for everyone.

Under the guidance of central government policies, local governments at various levels have developed a series of policies in response to this trend. Shanghai as China's largest city, with a cosmopolitan, open and strategic vision, on behalf of China's most advanced development. As early as in 1991, Shanghai had already proposed to create a learning society and to practice life-long learning. In 2003, Shanghai Propaganda Department, Information Commission and other two departments jointly issued *Opinions on Promoting the City's Community and Cultural Information Integrated Services Construction*. Combing with the degree of Shanghai Educational Informatization, this issue asked to use modern information technology to construct educational public service platforms throughout the city, and to motivate community informatization. In 2006, Shanghai multiple government published *Guiding Opinions on Promoting the Construction of a Learning Society* on the basis of Shanghai's realities of situation. Two goals are proposed in this document: initially set up "Anybody can Learn

Anytime and Anywhere" framework of learning society; built diverse, multi-leveled, accessible and open life-long learning system which provides formal education and leisure culture education. *The Outline of Shanghai Medium-and Long-Term Program for Education Reform and Development (2010-2020)* is another typical policy that is proposed in 2010. This policy is aimed at to promoting and integrating high-quality educational resources, improving the learning infrastructure and service system, building IT public service platforms". And this aimed at establishing 21st century city u-learning environment, providing personalized learning service for learners; thereby bring about leapfrog development in the education informatization.

3. Methodology

As guided by national policies, China is building the learning society, and setting up public learning platforms is an important means and guarantee to realize it. Relying on abundant learning resources and learner-centered design, good learning platforms can provide rich learning experience for learners, and stimulate learning motivation. The life-long learning, u-learning and relative policies all emphasize the personal learning support system of learning platforms.

This paper synthesizes learners' motivation and advantages of u-learning, and analyses the construction of learning platforms with ARCS model. The ARCS model is based upon the macro theory of motivation and instructional design developed by Keller (1979, 1983). Because of the boring content and short learning support, distance learning had high drop-out and low completion rates. The ARCS model was intended to change this phenomenon and stimulate learner's motivation originally. Although many changes have taken place, the ARCS model is significant in learning design.

The ARCS model defines four major conditions (Attention, Relevance, Confidence, and Satisfaction) that have to be met for people to become and remain motivated.

3.1 Attention

The first condition, attention, is an element of motivation and is also a prerequisite for learning. The motivational concern is for getting and sustaining attention. Although stimulate and sustain motivation refers to many other aspects and through the whole learning process, drawing and sustaining learners' attention are also the first and the most important step.

3.2 Relevance

Relevance is closely related to the learners. It may not come from the learning content; it can come from something is taught. According to expectations and value theory, the relevance of learners' learning objectives and learning content can determine their learning depth. To the extent that a course of instruction offers opportunities for an individual to satisfy these and other needs, the person will have a feeling of perceived relevance.

3.3 Confidence

Some people never quite achieve success even when the odds are in their favor; others always seem to excel through no matter what the odds. Differences in confidence, the third major component of the

ARCS model, can influence a student's persistence and accomplishment.

3.4 Satisfaction

This category incorporates research and practices that help make people feel good about their accomplishments. According to reinforcement theory, people should be more motivated if the task and the reward are defined, and an appropriate reinforcement schedules used. There are several factors that contribute to one's level of confidence, such as feedback, rewards and evaluation.

In summary, these four categories form the basis of the ARCS model. It is always further improved with the development of education informatization. In this paper, we use this model to analysis the construction of a learning platform – Shanghai Life-long Learning Network.

4. Analysis and Results

In 2000, Shanghai began to construct “ten learning websites and one educational resource center” according to the trend of education informatization. Following the goal of initially establishing "Anybody can Learn Anytime and Anywhere" framework of learning society “Anyone learns at Anywhere and Anytime” by 2010, Shanghai started to build digital life-long learning system on the basis of “ten learning websites and one educational resource center”. Shanghai Life-long Learning Network as an important part of this system has the most extensive study objects and the most comprehensive learning resources.

Shanghai Life-long Learning Network is a highly interactive educational website which opens to people of all educational levels and backgrounds within Shanghai province. The network provides people the opportunity of accessing a vast range of high- quality educational resources, and embodies an integration of multiple functions such as courseware search, learning, exchange, testing and evaluation. It is a large-scaled online learning platform that can help users effectively learn, investigate, manage and collect a great variety of information and materials. Figure 1 is the using flow chart of Shanghai Life-long Learning Network.

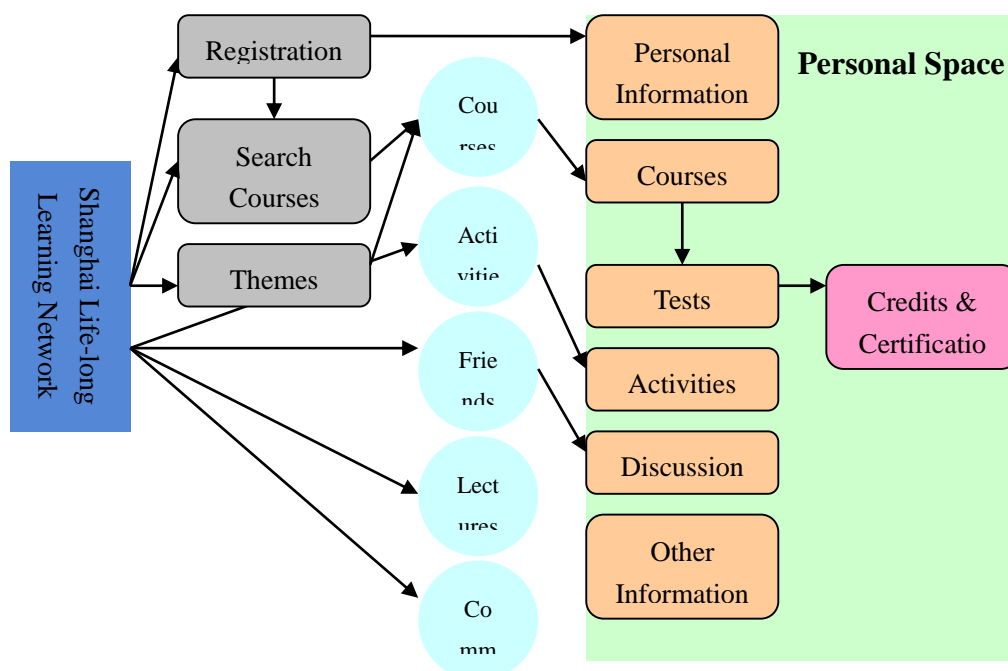


Figure1. The Using Flow Chart of Shanghai Life-long Learning Network

4.1 Courses Learning

Shanghai Life-long Learning Network provides a vast range of learning resources. People can use key words, contents or the various guidance of the platform to find the courses they want. The rich learning resources cover basic education, higher education, vocational education and life-long education, including linguistic literacy, information technology, career guides, and other various themes. Learners can choose the modes by themselves to learn the courses they appreciate, such as text reading, video browsing, audio lectures, three screen courseware, and micro learning.

Besides, there are “activities”, “reading”, “learning community” learning modules to provide learners with a wide range of popular e-books and interactive activities in the Shanghai Life-long Learning Network. For example, 2014 Shanghai community family talent show will be hold recently.

Additionally, the personalized resource recommendation system in Shanghai Life-long Learning Network can recommend high-quality courses with high evaluation by similar users on the basis of the learners’ learning records, vocation, and interests as the figure 2 shows. The personalized resource recommendation system is more convenient for users to check the courses, which saves a lot of browsing and course finding time to a large degree and allows more users to be involved in the Life-long Learning Network.

Rich learning resources and activities will attract learners’ attention, and make it easier for learners to acquire relevant knowledge and satisfy their basic motives. And the recommendation system could help learners find relevant courses. These designs meet the “Attention” and “Relevant” requirements of ARCS model.



Figure2. The Personalized Resource Recommendation

4.2 Learning Process Management

As figure 3 shows, learners are always being remained or encouraged by learning process management during their learning process. By comparing the personal learning process to the common, Shanghai Life-long Learning Network help advanced learners to build self-confidence and encourage backward learners to do much better. Learning process management is an important way to sustain learners' attention and help them gain confidence.

课程名称	课程分类	同学数	开始学习时间	最后学习时间	学习进度	是否学完
上海话的发展	终身教育	13人已学	2010.02.02	2010.02.02	<div><div></div></div>	标准 已超前4小时
★★★★★	语言文字	22人在学	7:50	7:50	<div><div></div></div>	当前 继续学习>>
上海话的发展	终身教育	13人已学	2010.02.02	2010.02.02	<div><div></div></div>	标准 已落后4小时
★★★★★	语言文字	22人在学	7:50	7:50	<div><div></div></div>	当前 继续学习>>
上海话的发展	终身教育	13人已学	2010.02.02	2010.02.02	<div><div></div></div>	标准 已超前4小时
★★★★★	语言文字	22人在学	7:50	7:50	<div><div></div></div>	当前 继续学习>>
上海话的发展	终身教育	13人已学	2010.02.02	2010.02.02	<div><div></div></div>	标准 已落后4小时

Figure 3. Learning Process Management

4.3 Personal Learning Space

Personal learning space is to allow learners easily master and manage their personal information. With chased curriculums presented in this space, it records all the information of learners in Shanghai Life-long Learning Network, including learning partners, online activities, discussion, and tests and so on. This information can set up a personal file for learners and record their learning activities. It can also help attract their attention to the study and remind the learning situation.



Figure 4. Personal Learning Space

4.4 Learning Interaction

In the learning process, Shanghai Life-long Learning Network provides an “Activities-Forum-Lecture” three-dimensional interactive learning system for learners to confirm the learning success. Learners can join into the course forum to discuss with other students as soon as they choose it. And this can help them find their partners with same interests. Activities are the good way for learners to present their learning outcomes and share something with others. Lectures give opportunities for learners to communication with experts, and let them answer confusion posed by learners. Learning interaction can not only urge learners to complete courses from each other, also can bring confidence and satisfaction for learners.

4.5 Learning Motivation

In order to sustain learners’ attention and desire their learning satisfaction, Shanghai Life-long Learning Networks established the “Credits-Certificates-Titles” the integrated motivation system as figure 5 shows. Users will win credits and certificates through learning. The accumulated credits can also be used to change in-kind incentives.

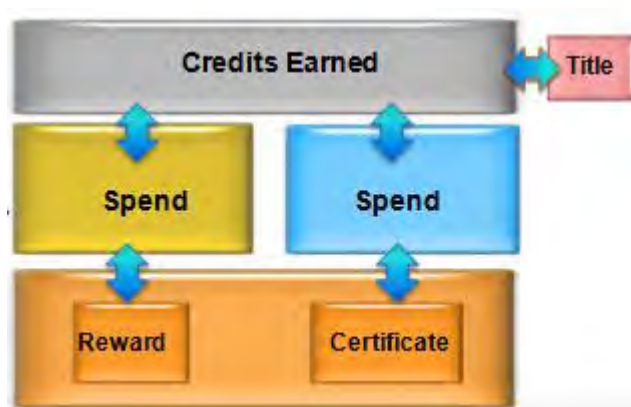


Figure 5. Motivation system of “Credits-Certificates-Titles”

In addition, Shanghai Life-long Learning Network also provides for each learner a

personal learning passport shown in Figure 6. Personal Learning Passport records history and learning outcomes of learners, demonstrates learners' awards in it. Learners can also access other people's learning passport, motivate each other and learn together.



Figure 6. Personal Learning Passport

According to ARCS model, Shanghai Lifelong Education Network can successfully attract and sustain learners' attention. Its rich learning resources and various presentation ways makes it easier to find relevant and interesting knowledge. It also has a complete record and motivate system to help learners build up confidence and feel satisfaction.

Since the official opening up of the Shanghai Lifelong Education Network on the 14th of April, 2009, the number of hits to the website within the first two weeks has reached 136,000 and the free online registration has reached 13, 2113. It is a successful social practice that supported by China's national policies.

5. Conclusion

The development of life-long learning in u-learning environment has attracted a great deal of attention in recent years that policies are proposed and infrastructure is constructed. Under the guidance of national policies, China has made efforts for the learning society to give life-long learners good learning environment. As the economy center of China, Shanghai is the largest city with the most advanced technologies and ideas. The construction of Shanghai Life-long Learning Network is a good example. Such platform reflects China's policies, meanwhile, has the potential to inform new policy-making and provides makers a vision towards drawing up better policies.

Acknowledgements

This paper is part of "Shu Guang" project which is supported by Shanghai Municipal Education Commission and Shanghai Education Development Foundation(13SG56). Besides thanks for the support of Shanghai Science and Technology Commission scientific research project "Shanghai Engineering Research Centre of Open Distance Education" (13DZ2252200).

Reference

- Saadiah Yahya, Erny Arniza Ahmad & Kamarularifin Abd Jalil (2010). The definition and characteristics of ubiquitous learning: A discussion. *International Journal of Education and Development using Information and Communication Technology (IJEDICT)*, 6(1), 117-127.
- Bomsdorf, B. (2005). Adaptation of learning spaces: supporting ubiquitous learning in higher distance education. Retrieved from <http://drops.dagstuhl.de/opus/volltexte/2005/371/pdf/05181.BomsdorfBirgit.Paper.371.pdf>
- Mark Weiser. (1991). The computer for the 21st century. Retrieved from <http://www.ubiq.com/hypertext/weiser/SciAmDraft3.html>
- Casey, D. (2005). *u-Learning = e-Learning + m-Learning*. In G. Richards (Ed.), *Proceedings of World Conference on E-Learning in Corporate, Government, Healthcare, and Higher Education 2005*, 2864-2871.
- The Ministry of Education of the People's Republic of China (2004). 2003-2007 Year Education Promotion Motion Plan.(In Chinese)
- The Ministry of Education of the People's Republic of China (2010). The Outline of China's National Medium-and Long-Term Program for Education Reform and Development (2012-2020). (In Chinese)
- The Ministry of Education of the People's Republic of China (2011). China's Ten-Year Plan for Educational Informatization(2011-2020). (In Chinese)
- Shanghai Propaganda Department, Information Commission et.al. (2003)Opinions on Promoting the City's Community and Cultural Information Integrated Services Construction. (In Chinese)
- Shanghai Multiple Government (2006). Guiding Opinions on Promoting the Construction of a Learning Society. (In Chinese)
- Shanghai Multiple Government (2010). The Outline of Shanghai Medium-and Long-Term Program for Education Reform and Development (2010-2020). (In Chinese)
- Jiefang Daily(2007). To build a learning society with the framework of "Anybody can Learn Anytime and Anywhere" in 2010 in Shanghai. Retrieved from <http://www.jasq.cn/show.aspx?id=403&cid=39>. (In Chinese)
- Fu Daoming, Xu Fuyin (2007).Ubiquitous learning in pervasive computing environment. *China Educational Technology*, 24(6): 94-98. (In Chinese)