Research on community resident autonomous learning based on virtual learning

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Abstract - Community resident learning is the key part of lifelong education. In the era of mobile Internet, virtual learning is becoming more and more important. Nowadays, there are some problems in community resident autonomously virtual learning, which affect learning quality. Aiming at the current state and problems of community resident virtual learning, we investigate how to improve community resident autonomous virtual learning ability, based on the theories of connectivism, constructivism, humanism and distributed cognition.

Keywords: Community resident; Virtual learning; Autonomous learning; Strategy

1 Introduction

John Dewey, in his book Democracy and Education, introduced learning communities in teaching, thought that learning was for getting knowledge and ability by interactive activity of mind and emotion among learners, and persons’ learning can’t be separated from interaction with environments. With the rapid development of mobile Internet technology and smart equipment, people’s studying ways were greatly changed, there are more channels for receiving information, and studying time is becoming more and more of fragments. Persons’ studying more relies on networks and increasing people, by virtual studying platform such as MOOC (Massive Open Online Courses), WeChat, QQ and Weblog, go to virtual learning community to study.

Communities are basic units of the society and residents in some regional space. Persons residing in communities are called community residents. Modern people’s life, from birth to developing, depends on communities and is restricted by community environment. In all of phases of lifetime, persons receive all kinds of education including not only school education but also society education, or formal education and informal education.

Virtual learning is one important means of lifelong learning for community residents in modern society. It is one kind of online learning ways. Network platform is its interactive interface. Among it, learning groups, interactive environment and existing relations constitute virtual learning communities. Learning groups in Internet communicate, exchange and share all varieties of learning resources with one another. It comprises remote school education which includes college network education with record of formal schooling, college network open courses, all sorts of network schools and so on, and remote society education that involves online learning website, weblog, BBS (Bulletin Board System) and so forth. Harvard University Internet open courses, Tencent QQ forum, Baidu post bar, Sina Blog, Tencent WeChat and MOOC Cloud classroom provide shared platform of knowledge spreading. In recent years, massive online open courses are fashionable in the world. Virtual learning breaks restriction of time and space, helps people construct shared information resources in greater range, promotes human being culture propagation and civilization exchange, and powerfully drives social development.

The United States and other developed nations, in 1970s, proposed the conception of autonomous learning. In 1990s, American scholar B.J. Zimmerman synthesized opinions of all kinds of school thoughts and greatly developed autonomous learning theory. Autonomous learning is one kind of modern learning means compared with traditional reception learning. In the learning way, learners are the principle part of learning and realize learning objectives by learners’ independent analysis, searching, practice, query and creation.

According to different ways of taxonomies, there are several varieties of modern community resident autonomous learning. In content, community resident autonomous learning can fall into the classifications of education background, technical ability, relaxation and entertainment. In form, it can be individual or collaborative. In function, it can be formal or informal. In studying media, it can be online or offline. Online learning is one important means for community residents.

In the paper, we will organize the content as follows. In Section 2, we will analyze current situation and existing problems of community resident virtual learning. In Section 3, community resident virtual learning autonomy training strategy will be proposed. Finally the conclusion will be drawn.

2 Current situation and existing problems of community resident virtual learning

We have come into the era of lifelong learning. Community resident learning is the core content of lifelong education. However, the complexity of community residents easily makes community education only of form. Residents’ autonomous learning is the key problem. Mr. Wei Hu, in the book Make learning become one living way, mentioned that in
the times of information, knowledge updating time is shorter
and lifelong learning becomes more and more important. One
Indian engineer, in his flight, noticed that after the lights were
turned off, those who were playing with iPad and didn’t sleep
were by and large Chinese. They were playing games and
watching movies and no one was reading. Not only in flight,
but also in long-distance buses, metros and buses, a lot of
children, youths and middle-aged adults are addicted to games,
films and movies. The development of online education and
social networking services is making education activities more
flexible and convenient. It can motivate learners’ interests and
promote collaborative learning. Although to some extent,
virtual learning has more advantages than traditional education,
the autonomy of virtual learning are facing many challenges.

With more abundant network learning materials and
quick development of social networking, people more depend
on network learning. In 2014, the authors investigated five
typical communities in Shanghai; the statistics showed that on
average each person spent more than three and a half hours
online, if on holiday, it was longer. Some persons surf the
Internet for the sake of searching learning materials and
watching network teaching videos, or in virtual communities,
study, exchange, communicate and share learning resources.
But, people in virtual learning communities can’t do what they
want to do in the course of all studying. Seeking mass
information often makes learners lose heart.

The era of big data derives from mass information and its
explosive increasing in Internet. In the beginning of 21st
century, the global data quantity was about several EB
(ExaByte), which is tens of thousands of times of total books
in the world. In the present age of mobile Internet, Internet of
things and smart mobile equipment such as smart phones will
generate more data, and global data quantity has rapidly added
to the level of ZB (ZettaByte). How much is the “big data” on
earth? International Data Corporation (IDC) showed that in
2011 global data was 1.8 ZB or so. If we use DVD compact
disk of 9GB to store them, the total height of all needed CDs
will exceed two hundred sixty thousand kilometers, about
second thirds the distance between the earth and the moon.
Moreover, in the age of big data, with the rapid development
of mobile technologies and social contact media, among
persons new interactive means are being constructed.
Therefore, the scale, speed, classification and complexity are
far beyond cognition and response ability of human brains. On
one hand, people need study by virtual learning. On the other
hand, persons hope computer intelligent systems to help
human beings think about and solve problems.

For example, people search required information from
mass information. Previously, artificial rules usually are used.
Nevertheless, when to some extent data are accumulated, the
system with this kind of artificial rules can’t exactly
understand learners so that it can’t provide personalized
services and has much disadvantages.

Because cognitive systems during intelligent interaction
with people provide them with all kinds of information
supporting, lots of structured and non-structured data have to
be analyzed for the sake of processing obscure information
and finding inherent relevance and trends. So, cognitive
systems are not limited by predefined rules by experts any
more, but on their own learn conceptions from big data,
analyze conceptions and mine relations among them and set
up big data models of scaled and intelligent machine learning.

Virtual learning is faced with not only the difficulty of
big data cognition, but also obstacles from software and
hardware, reality and reliance of learning resources,
differences of languages and culture, acknowledge of society
and psychology and conflict from responsibility and obligation.
Furthermore, it will face the problem of how to increase
learning efficiency. Therefore, if learners can really make it
come true to get autonomously virtual learning, there are still
many open problems to solve.

3 Community resident virtual learning
autonomy training strategy

Educators’ anticipation is to have learners acquire
innovative education where they get knowledge by themselves
from passive filling type education where they are required to
learn, that is to say, learners can autonomously learn.
Compared with traditional education, virtual learning has a
number of advantages such as no restriction of space and time,
flexibility, convenience and higher autonomy. But, autonomy
of virtual learning need be cultivated.

3.1 Scenario establishment of constructivism

In the field of vision of lifelong education, community
resident autonomous learning focuses on interior quality of
learning, different from rote learning and passive learning by
teaching. The theory of constructivism is the main theoretic
foundation of autonomous learning. Learning theory of
constructivism suggests that learning is the course of
constructing internally psychological expression on learners’
own and underlines autonomy, situationality and sociality of
learning. That is to say, learning patterns should focus more
on learners’ construction and organization of knowledge, it is
stressed that knowledge should be constructed by mutual
interaction between cognitive subjects and objective settings,
and all varieties of influence effects in learners’ learning
environment should be researched.

In the era of mobile Internet, in order to trigger
community resident learning autonomy, software and
hardware platform for autonomous learning must be set up to
establish scenarios for autonomous learning. People usually
attach importance to accumulation of software resources –
information content, but neglect construction of technical
support of learning platforms.

Virtual community learning needs multimedia technology
to integrate graphs, texts, audios and videos. Virtual reality
technology is required to finish interaction such as the
representation of reality by special input perceiving equipment
and some multi-dimension output equipment. It also requires
network communication technology to efficiently gather
information from learners in real time to break the restriction
from regions and time for the purpose of communication and
exchange among learners. Therefore, virtual learning relies on the development of network and electronic communication technology, and maturity of some key technologies such as bandwidth, video quality and guarantee of online sharing tools. However, incompatibility among technology decreases residents’ learning interests, for example, smart phones not supporting Android system can’t login WeChat. Similarly, mobile Internet equipment not supporting Android system can’t login MOOC cloud classrooms supporting Android system. Even if smart phones with Android system are used, because operating systems are not compatible with installed applications by users, the configuration for core functions is not compatible, and equipment providers have no updated strategies, it will result in large loss of mobile learners.

Present virtual community learning platforms have some shortcomings such as incompatibility between PC operating systems and mobile platforms, incompatibility between iOS (mobile operating system from Apple Corporation) and Android systems, and deficiency of mobile learning experiences and shared functions. Most of virtual community learning platforms solve the problem of video playing across terminals by adopting HTML 5. Virtual learning communities should provide similar scenario creation and learning experiences like PC platforms to make mobile learning terminals have not only functions of video playing, but also functions of exchange, group discussion, exercises and voting for the purpose of free switch between desktop systems and mobile systems. By integrating WeChat public platform open interfaces, in WeChat friends circles, it is realized to share course content. Relying on large-scale users of WeChat and other social contact platforms, by functions from interactive answer questions based on WeChat public service, and discussion learning based on WeChat grouping, community resident learning autonomy can be activated, providing community residents with free community Wifi to use.

3.2 Connectivism resource integration

Connectivism was proposed by Canadian scholar George Siemens and was the product of the age of digital network. Connectivism suggests that learning is not just personally psychological activity of learners, but one connection procedure and one learning model adapting to current social structure changes. Because social structure is changing, people’s needs and learning ways are changing as well. In the era of network, knowledge is increasing in exponential order and exists in form of fragments. Individual knowledge reserve and management space are contradictory with explosive increasing of knowledge. Thus, the means of knowledge acquiring are more important than mastery of knowledge. So, studying is where knowledge connects, recombines and recycles by different forms. In addition, connection studying is of society and drove by interests. Connectivism provides community residents with ways and methods for autonomous learning. Connectivism derived from the age of digital network, suggests that knowledge exists in multiple channels, and the ways of acquiring knowledge are more important than mastering knowledge. In order to promote sustainable learning, it is needed to cultivate and maintain connection.

Community residents have common characteristics with social groups: groupment, distributivity and autonomy. As connectivism shows, in the course of virtual learning, community residents’ individual knowledge and relations form one small network, which is integrated into all kinds of organizations and structures, whose knowledge is connected, changed, expanded, and further transmitted to individual networks, which serve personal continuous learning. Thus, organizers for community resident learning should provide community residents with necessary services such as learning resources, learning platform tools and related connection service.

Firstly, integrate learning resources. On one hand, provide community residents with appropriate needed learning resources with all kinds of majors for autonomous learning. On the other hand, basing on abroad and excellent learning resources, provide Chinese with online learning service suitting community resident learning. Take as one example, Coursera, one of three MOOC giants in the world, released the project plan of crowdsourcing The Global Translator Community (GTC) and agreed with cooperators to make captions for Coursera courses to help learners from non-English-speaking countries to more conveniently use their MOOC. Secondly, provide learning tools and platforms. By using mobile communication technology, multi-media technology and relevant IT technology in the age of big data, through MOOC, Facebook and so on, provide community residents with network learning connection platform, learning tools and other suitable software and hardware equipment. Thirdly, optimize internal and external networks, and reinforce connection service. The following three connections should be noted: connection among virtual learning platforms such as the one among schools, families, communities and museums in order to develop free connection of learning settings; interaction between people and machines such as mobile inter-connection for increasing human-machine collaboration; inter-connection among persons such as setting up community resident virtual learning network by WeChat group, QQ group, WebBlog and Email to promote networking communication in the course of teaching and studying.

3.3 Decentralized construction of distributed cognition

In the middle 1980s, Robert Maynard Hutchins et al. from University of California proposed the conception of distributed cognition, thought that knowledge exists in different positions and cognition is distributed in brains and external environment, especially structure and time of society and culture, and stressed that learning resources should be decentralized.

Virtual learning communities are learning collections where physics, society and culture are of distribution. Their learning individuals, personal learning time, learning resources and environment are of distribution as well. Their knowledge dissemination complies with sociology distribution cognition theory. It permits mentors, learners and learning
contents to distribute in different non-centralized positions and makes teaching and learning independent of time and space. It makes real open education, lifelong education and universal education possible and is an efficient path to increase development of learning society. It underlines non-centralization of resources, eliminates teachers’ absolute authorization, changes traditional teacher-centered patterns into learner-subjected ones, and makes learners have bigger initiative and autonomy. It focuses on scenarios, construction, cooperation and exchange, and provides students with individualized learning schemes to make learning not depending on top teachers and classrooms. Learners are resources providers and receivers. For example, MOOC has several innovations on online education. Learners who are of distribution can share rich distributed course resources. In the distributed learning, learners own more initiatives and accelerates changing from “want me to learn” to “I want to learn”. This is learning idea updating.

Big data overturns famous teacher effect. Community resident learning organizers necessarily need self-adaption to meet learners’ requirements. Thus, it is required to distribute educational resources to sufficiently embody education fairness.

3.4 Humanistic content pushing

Humanistic learning theory originated from Abraham Harold Maslow’s self-actualization and Carl Rogers’s personality ego psychology and learner-centered self-actualization education. Humanism suggests that human beings own learning potential in their blood and anticipation of self-actualization, educational fundamental objectives are guiding learners’ self-actualization, and educational key aims are to enlighten learners’ soul to have them liberate, discover and go beyond themselves.

Due to big differences among community resident individuals, particularly the differences among learning ability, learning style and learning strategy, makes personal learning procedure very different. In addition, different community residents have different learning needs. One learner has different learning needs in different learning stages. Therefore, teaching content and methods with “one size fits all” is not suitable for all community residents. One of means of solving the problem is community resident autonomous learning. Thus, community education should fully respect learners’ personality and individuality. Learning content should be designed according to students’ potentials and personality development. It should be done to consider learners’ psychological sensing and behavioral habits. Furthermore, perfect importing of new technology, new tools and new conceptions provides diversified learning resources.

3.5 Social identification and stimulation

Low cost, social identification and having learners acquire experiences of successful learning, benefit cultivating learners’ interests and increasing learners’ initiative and autonomy.

(1) Encourage community residents to join in virtual learning community for free education

Community residents have otherness of cognition degree and knowledge base. Traditional education has higher requirements of enrollment, tuition and learning cycle, and makes community residents shrink back at the sight. Online education based on MOOC is one good choice, as online virtual learning materials are abundant, materials getting is convenient, prices are low and learning time is of freedom. It pretty suits community resident autonomous learning.

(2) Construct virtual learning testing and certificate stimulation schemes

Community residents finish online virtual learning, pass related testing, and are eligible to get corresponding academic certificates and non-academic certificates. It can stimulate community residents’ enthusiasm for virtual learning. The United States integrates training, evaluation and promotion, and stimulates the public’s positivity for autonomous learning.

(3) Study in order to apply and increase social sense of identity

Our society is composed of communities and should make each social member fully sense the dignity of existence. Besides setting courses for different majors, some courses on psychology and laws should be appended. Study is for applying. Encourage old persons on their own intention to participate in some social work to provide their contribution. Let them sense that they are useful. Increase their social sensing of belonging and social sense of identity. The kind of sense of belonging and identity is the source of social public spirit and is the root of establishing learning society. Having this kind of sense of belonging and sense of identity, each community resident’s potential ability can become the consciousness of autonomic learning with some possibility.

4 Conclusions

Learning once for “charging” in the life had become history. The theory of storage battery told us that one high energy battery can only store limited electricity. As long as keeping charging, it is possible and sustainable to keep releasing energy. Human beings’ brains are one kind of high energy storage battery. Life is one procedure of keeping studying. In the times of big data, social network incredibly grows, intellisense is increasingly increased, updating period of knowledge is becoming shorter, and new ideas and new knowledge are emerging endlessly. Virtual learning by its advantages of quick charging for brains is being loved by people of all ages and levels. However, community resident virtual learning autonomy needs cultivation. Aiming at current situation and existing problems of community resident virtual learning, basing on connectivism, constructivism, humanism and theory of distributivity cognition, the authors discussed how to promote autonomy of community resident virtual learning. With the development of information technology, lifelong learning and autonomous learning for community residents will be and are being one main topic forever.
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6 References


