Education Journal
2018; 7(5): 136-145
http://www.sciencepublishinggroup.com/j/edu
doi: 10.11648/j.edu.20180705.16
ISSN: 2327-2600 (Print); ISSN: 2327-2619 (Online)

A Critique and Reconstruction of the Conception of "Networked Learning"

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To cite this article:
Zuo Huang, Huang Fuquan. A Critique and Reconstruction of the Conception of "Networked Learning". *Education Journal*. Vol. 7, No. 5, 2018, pp. 136-145. doi: 10.11648/j.edu.20180705.16

Received: September 29, 2018; **Accepted**: October 26, 2018; **Published**: November 19, 2018

Abstract: Along with the development of Internet technology and integrated with the theory of instruction and culture of the organization, the conception of "Network Learning(NL)" has gone through "e-Learning/Education" to "Networked e-Learning/e-Education", then to "Networked Learning." However, one aspect, the conception of NL, cannot escape the language system of traditional epistemology and the dualism of science and culture. Another aspect, the development of the network society requires the NL to expand its meaning. This article aims to reconstruct the conception of "NL". Based on the literature review of existed studies on NL, at the perspective of Actor-Network Theory, an etymology study is carried out. The result shows that the new conception of "NL", includes three meanings of technological, social and philosophical levels. Firstly, the "NL" at the technological level refers to the general learning activities by means of Internet technology. Secondly, the "NL" at the social level refers to the learning environment or context which aims to improve the interaction, communication and cooperation among learners. Ultimately, "NL" at the philosophical level refers to the basic form of the existence of learning life which is the heterogeneous network constructed around the knowledge. It is expected to become the new mode of education in the near future with the integration of learning as ontology, epistemology and methodology.

Keywords: Networked Learning (NL), e-Learning/Education, Networked e-Learning/Education, Network Learning, Network Society, Actor-Network Theory

1. Introduction

The advent of Arpanet and Internet initiated a new era of networking and Networked Learning (NL). Along with the development of technology and its integration with pedagogy and culture of the organization, NL has developed from "e-Learning/ Education" through "Networked e-Learning/ e-Education" to "Networked Learning." However, the epistemological beliefs of NL cannot escape from the traditional epistemology and the dualism of science and culture. As well, the essence of "network" in the world is becoming visible due to the medium of "network system". From the perspective of ontology, the ontology of relations (featured as network) is gradually taking the place of the ontology of entity. Meanwhile, the hierarchical organization, the linear teaching-learning relationship and authoritarian educational discourse are losing their dominance in the educational world. Against this background, the NL is becoming the medium which is responsible for the development of the knowledge society and network society. To sum up, the self-development of NL requires us to reconstruct our conception of it. [1]

In order to understand this better, this paper begins with a discussion of the evolution of NL through the different stages in the development of the technology that supports it.

2. The Evolution and Critique of the Conception of "NL"

The emergence of NL is coupled with Internet technologies.

Combined with Pedagogy and culture of the organization, several developing stages of NL have emerged: LAT (Learning Affiliated with Technology), ITL (Incorporation of Technology and Learning), ITL (Integration of Technology and Learning). These different stages reflect the process of pursuing an ideal education. Notwithstanding, it is hard to achieve the ideal "NL" due to the model of dichotomy thinking which distinguished subject and object, human and technology. Each of these stages will be discussed in detail below.

2.1. Evolution of the Conception of "NL"

2.1.1. The Stage of Learning Affiliated with Technology: E-Learning/Education

In the 1980s, the Internet, born in the military sector, vitalized learning activities. Since then, Internet-based /Web-based Learning has developed quickly. Eventually, it was combined with Computer-Assisted Learning/Instruction [2-4] and Distance Learning qe to form the original NL—e-Learning/ Education. Up to now, there has not been any consensus reached about the definition of "e-Learning/Education". Generally, there are two main groups of definitions.

The first one considers it as a new learning approach which differs from other approaches from the perspective of pedagogy. For example, the Department of Education of USA published an official paper in 2000 to define "e-Learning/Education" as an educational approach. In fact, there are various definitions of "e-Learning" based on the different interpretation of "e". [5-6] He (2002) defined it as "a new learning approach via learning environment with new communication mechanism and a large number of resources. [7] This approach will change the status of teaching and the relationships between teachers and students, then to change the pedagogical structure and educational essence". In summary, some researchers have come to an agreement that e-Learning/Education is a new learning approach for supporting traditional education, even though they have had different ideas of "e".

The second group of definitions considers e-Learning as the use of technology in education from the perspective of technology. For example, the online Wikipedia has taken "E-learning" encompassed by "Educational Technology", [8] it has defined it is "the study and ethical practice of facilitating learning and improving performance by creating, using, and managing appropriate technological processes and resources". [9] It is the use of both physical hardware and educational theoretics. It encompasses several domains including learning theory, computer-based training, online learning, and where mobile technologies are used, m-learning. For example, the Higher Education Funding Council for England published a document titled "HEFCE strategy for e-learning" in 2005. [10] The council claimed, "The definition of e-learning should be sufficiently broad to encompass the many uses of ICT that individual universities and colleges decide to adopt in their learning and teaching missions". There are lots of similar definitions. [11-12] It is obvious that all these definitions are inclined towards the determinism of technology. They "portray(ed) technology as simply a delivery mechanism, and fail(ed) to address the co-evolutionary nature of technology and its use." [13]

Whatever they viewed "e" as Internet, mobile devices, electronic or digital symbol, "e-Learning/Education" was no more than a combination of technology and learning at this time. The technology characterized by high-speed, timely and easy communication attracted the "learning" activities to follow the technological sequence and neglected the purpose of learning.

Some researchers have named this stage in the development of e-Learning/Education as the "Technicalization of Education". [5, 12]

At this stage, the "e-Learning/Education" was the main metaphor for "NL". It was featured as the Web1.0 of Internet technology, the centralized structure of the organization, content delivery of teaching and cognitive processing of personal learning. The content-driven learning approach was the main approach for this stage. [14] With this approach, it was necessary for the learning resources, including the electronic content developed for e-Learning/Education, to be the mediation between knowledge and their underpinning values. For example, the open courseware developed by MIT was a milestone in the history of NL because it broke the boundaries between schools, even nations. It should be viewed as one type of "e-Learning/Education" which constrained learning in the traditional educational world. Trentin, G. described this approach as a mediator-centered approach (see Figure 1). [15]

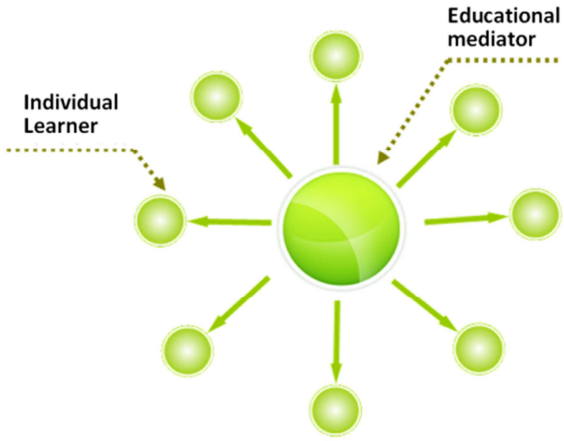

Figure 1. *The centrality of the educational mediator.*

To sum up, at the first stage of "NL", influenced by instrumentalism of technology, the learning technology was always separate from the learning world and technological determinism was fostering because of the brilliance of technology. Definitely, the theorists and practitioners in education all put their hearts into designing and developing learning technology without giving any attention to concepts of knowledge, learning and education. The result was a prevalence of rote learning.

2.1.2. The Stage of Technology Embraced Learning: Networked e-Learning/Education

The development of Internet technology fostered the advent of Web2.0, characterized by "participation, exhibition and interaction." [16-18] While Web1.0 was only a platform for outputting information, Web2.0 enabled much more interaction. [19] In 2002, the Economic &Social Research Council referred to networked e-learning as "those learning situations and contexts which, through the use of ICT, allow learners to be connected with other people (for example, learners, teachers/tutors, mentors, librarians, technical assistants) and with shared information-rich resources. [20] It also views learners as contributing to the development of these learning resources and information of various kinds and types. [21] In a literature review of advances in research on "Networked Learning", Goodyear et al.(2002) described "learning in which ICT is used to promote connections" and suggested that "the centrality of human interaction carries with it some pedagogical commitments and beliefs about learning." [22] Clearly, Goodyear et al. used the term "networked learning" to represent "Networked e-Learning" here. Accordingly, it can be seen that "Networked e-Learning/Education" emphasizes interaction more than did "e-Learning/Education", thus revealing the "network" essence of society. We can say that the "NL" has turned into the stage of "Educationalization of Technology", which means "NL" transcends the early heavy reliance on technology while neglecting the essence of learning. [23]

At this stage, the "Networked e-Learning/Education" is the main metaphor of "NL". The Web2.0 version of Internet technology has enabled the decentralized structure of the organization. The user-driven learning approach [24] has become the main approach for this stage. Within this approach, the role of the learning resource has changed from a mediator to a part of the personalized environment, and learners have strengthened their subjectivity by creating their own suitable learning environments. Trentin (2010) depicted this approach as user-centered (see Figure 2). [15]

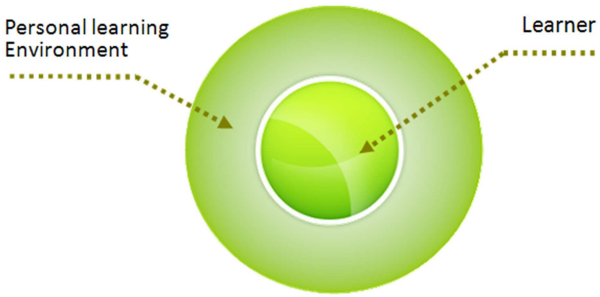

Figure 2. *The centrality of the learner.*

History has shown that technology has the potential to escape from and even control the culture in which it was born. So at this stage of "Networked e-Learning/Education", the technology adapts to the characteristics of learning; this differs from the earlier approach, that learning was under the control of the technology. Now more attention is paid to the learning subjects and their inter-subjectivity. This has fostered the second stage of "NL", featured as independence, collaboration, interaction.

2.1.3. The Stage of Integration of Learning and Technology: Networked Learning

If we say that Web 1.0 is portal-centered and Web 2.0 is user-centered, then Web 3.0 is service-centered. Actually, Web3.0 is more intelligent than the former generations. [25-27] It is said that Web3.0 will realize the "semantic network" and extend the concept of this. [15] This means that Web3.0 consists of intelligent, modular Web applications and that improved computer graphics play a key role in its further evolution. Beaty, L., et al. (2010) argued that the time is right to simply use the term "networked learning" and drop the 'e' because it is more important to foreground connectivity as a specific and important pedagogical feature of networked learning. [28] There are two principles for "NL" at this stage: one is to connect the user and resources through ICT, the other is to make learners the creators of learning resources. Based on this, Beaty proposed the three characteristics of "NL": connectivity, co-production of knowledge and e-quality. To be clear, the dropping of the "e" does not mean to deny the influence of technology on learning, but to lead us to pay more attention to the learning theories and learning activities. As Beaty said, updated definitions of networked learning should not only refer to pedagogy based on connectivity and the co-production of knowledge but should also aspire to support e-quality of opportunity and include reference to the importance of relational dialogue and critical reflexivity in all of this. Here, the "network" has begun to show its deepening essence more than technology. As John, N. (1985) said, "networking" is just for people to talk to each other, share their thoughts, information and resources. [29] He noted here that the "network" is a verb, not a noun. The most important is not the final product but the process to achieve the goals, namely, the communicating way between individuals and groups.

Along with the development of Internet technology, the first two stages "NL" gradually evolved to match the networked society. The new stage of "Networked Learning" which is featured as the Web3.0, incorporating the distributed structure of the organization, knowledge sharing and the co-production of knowledge through networked collaborative learning. Trentin (2010) described the networked relationship between teachers and students in this approach (see Figure 3). [15]

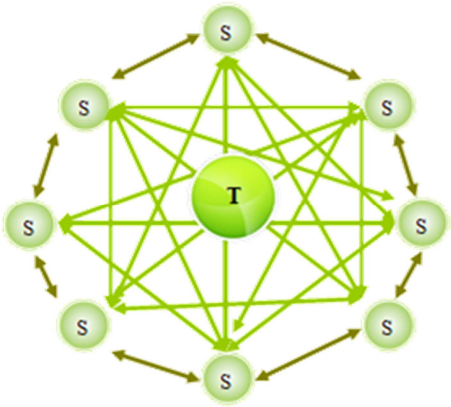

Figure 3. *Networked communication in NL (Trentin, 2010).*

At the basis of Web3.0, "Networked Learning", with a distributed network system, integrates technology and learning. At this stage, it is expected that both technology and learning will go beyond dualism and cooperate. Meanwhile, along with the development of educational culture, it is expected that it will be possible to get rid of the traditional, institutionalized schooling and "construct various educational webs increasing individual's learning opportunity." [30] If we say that institutionalized schooling is the product of pre-industrialism and industrialism, what are the outcomes of post-industrialism? What are the ways culture coexists with humans in the network Society? It is difficult to resolve these questions using the extant concepts of "NL". It is necessary to reconstruct the concept of "NL".

2.2. A Critique of the Conception of "NL"

Looking back on the evolution of "NL", it can be seen that the technology gradually adapted itself to the learning and kept up with the pace of learning culture while it urged learning to change. Along with the development of Internet technology, the network system evolved from centralized to decentralized and then to distributed network. Meanwhile, the learning approach in "NL" developed from the content-driven to user-driven to networked collaborative one. The progressing of "NL" is positive. However, after pondering it, we can find that the conception of "NL" did not get rid of the shackles of traditional epistemology or the dualism of science and culture.

2.2.1. Confined to the Discourse of Traditional Epistemology

As we can see, no matter whether the "NL" is treated as a new learning approach or a cognitive tool, as learning resources or the extension of the teaching-learning relation-ship, it hasn't been able to escape from the discourse of traditional epistemology.

Firstly, as a new learning approach, "NL" is in nature only a way to promote learning by use of new technology and learning conditions. In other words, it is only a way to help learners achieve their goals of learning with the teachers' guide. Therefore, even though the new media and Internet technology have broken the traditional model of linear teaching as well as created a lot of learning tools, learning resources and learning methods, it is still regarded as one of learning approaches with which teachers and learners carried out learning activities led by the educational goal. It is clear that "network" is only the medium to bear in the learning objects, regardless of how the technology changes, and the website or courseware are only the cognitive tools regardless of how convenient they are. All of these depend on the subject's knowing, that is the learner's learning.

Secondly, along with the development of the Internet, the existed real learning environment is surpassed by the virtual world so that the "NL" develops into a new kind of learning environment. As a learning environment, "NL" is not an approach or a method or a way because it has expanded the goals of learning with some new learning content including information technology and media literacy. Actually, the human living in the double worlds of "virtual" and "real" should develop for full man with network capacities to survive in the network society. Thus, the information literacy, media literacy, communication and cooperation skills, and innovation capacity become the new goal of education. The "NL" is still subject to the learners' activities around the goal of learning. In this sense, the "NL" as the new learning environment still confined to the discourse of traditional epistemology.

2.2.2. Indulgence in the Dualism of Technology and Learning

It is undeniable that technology is a myth which helped human beings to realize their dreams one after another. Along with it, the educational world is starting to shock and the revolution of it has arrived. The traditional education model established on the linear thinking began to collapse under the propelling of technology while the "NL" established on the network technology with non-linear thinking has been developed. Looking back on the history of the concept of "NL" again, it is found that the people has been firmly locked into the Cartesian Dualism between technology (science) and learning (culture).

First of all, from the portal-centered Web1.0 to the user-centered Web2.0 and to the service-centered Web3.0, with the development of broadband wired and wireless access advice, and the advent of P2P, the grid computing technic and the Internet of things, the "NL" is making progress constantly. Obviously, the technology always promoted "NL" and even decided the orientation of it. Thus, based on the emergence of the virtual university, some radical technology determinists proclaimed that the NL will take the place of the local universities completely, while some conservative determinists [31] argued that we need more adjustment in our practice of higher education in order to apply technology to teaching & learning successfully in the universities. These beliefs of technology philosophy make the "NL" focus on the developing and application of learning/educational technologies while neglect to reflect on the goal, content and approach of learning profoundly. So it is often to see the embarrassing situation that the technology is very modern whereas the learning is very traditional. This has arisen from the dualism of technology (science) and learning (culture), which led people to emphasize the technology but ignore the learning and its beliefs.

Secondly, when the technology determinism has shown its deficits of hindering learning, people has begun to adapt the relationship between technology and learning to address the learning and its culture. Depends on this view, "NL" is defined as the activities for supporting and promoting the learner's learning. It is called the stage of "educationalization of technology". However, this view makes "NL" which escaped from the technology determinism justly fall into the trap of technology instrumental rationality again. Therefore, under the guidance of such view of technology philosophy, the "NL" is going back to the learning world and it will be simplified as a physical tool which subjects to the learners. Learners would

not change themselves, however, the technology changed. However, it is a matter of fact that the technology and the Internet are reshaping the human brain and the structure of society in depth. Humans become the staff, affiliation, auxiliary, even the device of technology. [32] So the critique of technology determinism leads to the opposite side, the learning determinism. To sum up, the existed "NL" is in the deep of the pendulum movement between learning and technology, sometimes to focus on the development and application of technology, sometimes to focus on renewing the beliefs about learning and innovating the learning approach.

On the one side, we have to acknowledge the improvement of "NL"; on the other side, we still insist on the original "NL". This is a typical cultural paradox. As Wissler puts it, "The culture is an accumulative structure developed from the human reflective thought. According to this, as a special kind of culture, the development and prosperity of "NL" really need us to reflect on it in depth. [33] So it is the primary step to reconstruct the concept of "NL".

3. Etymology Study and Reconstruction of the Conception of "NL"

Along with the continuing fusion of technology and learning, "NL" has becoming the mediation of integrating human, technology and culture rather than an instrument. Meanwhile, the "NL" is sheering off epistemology to the ontology field which is concerned with the close relationship between Internet technology and people's lives.

Even though there are diverse names for NL, such as "e-Learning", "e-Education", or "Networked e-Learning", it originates from two key words, "network" and "learning". Through the different understandings of these two words, the meaning of NL will be enriched.

3.1. An Etymology Study of "Network"

Most people often connect the term "network" to the Internet or www. Actually, the Internet technology is one part of "network" which has a broader meaning.

The Chinese word of "network" originated from two classical Chinese words "(Wang)" and "(Luo)". The two words have the same meaning. The "Wang" has been interpreted as a fishing net and all of the things like net. [34] And "Luo" means floccules according to the "Analytical Dictionary of Chinese Characters". [34] There are three kinds of meaning of "network" in "The Contemporary Chinese Dictionary" [35]: things like a network; the system made up of interlaced parts; the system is composed of several components, devices and facilities with some functions. However, these interpretations are too simple to represent all meanings of the network because it has overlooked the history of conception of "network" and its changing in the present.

" 网络 (Wang Luo)" has several corresponding words including "net" "web" "Internet" "network" in descending order in English. According to "The Oxford Advanced Learner's English-Chinese Dictionary", [36] "net" means all kinds of mesh as a noun, remaining after all deductions as an adjective, yielding as a net profit or catching with a net as a verb. "web" means a spider web originally, then extends to refer to some intricate things or networks, now substitute the homepage or website. As for "Internet", its meaning is very limited to a special type of Internet technology. But "network" [37] has broader meaning than above three words. It refers to the Internet and web-like things and a group connecting informally; and to connect to the web or broadcast in the form of a net; and represent the process of networking. Contemplating on it further, "network" is composed of "net" and "work". The former represents a structure of a web which depicts a static social picture for us. The latter refers to an activity or acting which embedded people's praxis composing of physical activities and rational knowing. It describes a dynamic and vital social picture. They interlaced to be the radical characters in the social world. Therefore, the term "network" is developed into the systemic and cultural concept.

In terms of existed studies, the conception of "network" contains three meanings: technological level, social level and philosophical level. At the technological level, "network" includes all kinds of web system like communication network, power network, and so forth. In a broad sense, "network" contains computer networks, satellite communication network and telecommunications network. Castells, M. (2000) said, "The creation and development of the Internet in the last three decades of the 20th century resulted from a unique blending of military strategy, big science cooperation, technological entrepreneurship, and countercultural innovation." Even so, the Internet is only one part of this concept of network.

At the social level, "network" includes all kinds of social relations and forms of culture such as cyber-space, cyber-culture and so on. From the perspective of sociology, Internet and other web systems are not only a technological group, but also a series of technology institutions, form of culture and values coming together which changed the structure of society. Here, "A network is a set of interconnected nodes." It expands the space and time more than connects the technology. Moreover, it changed the relations between people. "A network-based social structure is a highly dynamic, open system, susceptible to innovating without threatening its balance." Castells said, the "network" is not a mysterious existence independent of people but a place for us to communicate, do business and share ideas. At this level, "network" shapes a new social mode including the modes of interpersonal interaction, social organization, power flowing and economic production; expands the living space of humans such as virtual community and mixture cyber-space; changes human behavior patterns like online writing and online communicating and so on. In brief, the "network" combined social level with technological level meanings brought us into "a purely cultural pattern of social interaction and social organization" as Castells said [38].

The third meaning of "network" is at the philosophical level. Actually, there are some philosophers who have already contemplated on the "network". For example, Michael, H. explored the metaphysics of virtual reality;[39] Mark, P. (1989)

investigated post-structuralism and the mode of information in the social context, and so forth. [40] All of these studies only uncovered the first level meaning of "network".

Besides, contemporary western philosophy opened a new era for the study of Non-substantialism, from H. Bergson's "Creative Evolution" to E. Husserl's "Life World", from A. N. Whitehead's "Process Philosophy" to M. Heidegger's "Being and Beings", and to J. Habermas's "Communicative Action Theory". Criticizing the ontological realism and the epistemological dualism is the Archimedes' Point of them. To start with it, non-substantialism theorists reversed the order of entities and its subordinated relations, environment and situation. Based on this, the relations are highlighted as the foundation of entities. "Network" is the ultimate representation of the complicated relations. In the history of Chinese philosophy, "relations(lian)" are more essential than the entities. [41] Especially in ancient Chinese philosophy, the non-substantialism spirit is embodied in "The Book of Changes (ZhouYi)", Taoism and Mahayana Buddhism. Essentially, the Eight Diagrams is a network. From the principle of language analysis, the Chinese philosopher Chang Tung-Sheng claimed that Chinese philosophy prefers to explore the relations. Y. H. Mao, et al. (1996) said, "Everything embraces each other like Intranet. Among it, pearls brighten each other and images reflect each other endlessly, things integrate with truth to become an extensive harmonious system." [42] To sum up, both Western philosophy and Chinese philosophy are regressing into studying relations between materials, information, technology and human. This is the second level meaning of "network".

On the metaphysics level, the essence of "network" has been developed by contemporary non-modern philosophers. The Actor-Network Theory (ANT), created by Latour et al., paid more attention to "network" as ontology. In 1999, in the article "On Recalling ANT", Latour (1999) pointed out that the "network" meant a series of transformations--translations, transductions. [43] According to this, "network" could be a collective of actors with some function which is dynamic and changeable and political. There are three characters of "network": be with more alliances and connections, be more powerful; be relatively in good order and stable even it changes frequently; be with integrity, "in a network, elements retain their spatial integrity by virtue of their position in a set of links or relations." [44] At the space dimension, "network" is the hybrid reality and functional collective of nature and society. At the time dimension, it is always transforming, changing and translating. By translating, more powerful networks will be formed by connecting actors. In other word, the "network" can be only understood during the relations it constructed. So that, the time dimension of "network" turned into the foundation of epistemology. Based on dynamic character of "network", we could realize and construct it only by following it. Therefore, rather than take "network" as the "something needed to explain", we should take it as "the tool to describing something." [45] According to the ANT, the "network" is the holistic conception blending ontology, epistemology and methodology.

3.2. An Etymology Study of "Learning"

Although the concept of "learning" is used more frequently along with the development of knowledge society, it is very difficult to define it exactly. There are diverse concepts of learning due to different beliefs of ontology, epistemology and education.

"(Xue Xi)" corresponds to two words, "learn" and "study" in English. The "learn (Xue)" and "teach (Jiao)" are equivalent. "Learn" has derived from "Lernen" of Middle English which originated from "leornian" of Anglo-Saxon. The root of them is "lore". And the original meaning of "lore" is learning or teaching. Now it refers to the teaching content. Thus "learn" is associated with teaching content. [46] In paralleled, there are some words represent teaching among the Germanic Languages such as German "lehren", Dutch "leeren" and Swedish "löra". The term "study" has derived from "studie" which originated from the Old French "estudie". "Estudie" stemmed from "studium" and "studēre". The former is a noun which meant "application of knowledge". The latter is verb which meant "be thirsty to learn and practice". Accordingly, the "study" refers to a specific learning activity, such as to study one discipline, one topic or conducting research in some disciplines. [47]

"Xue Xi" consists of concepts of "Xue", "Xi" and "Xue Xi" in Chinese. The "Xue" has been interpreted as the integration with teaching and learning; one interpretation is about the learner imitating teachers and the other is about teachers teaching "The reason why "teaching" is called "learning" is because the purpose of "learning" is to enable people to learn independently, and "teaching" is to let teachers help students learn to learn independently.". It shows that the "Xue" and "jiao" are equivalent. And "Xi" means to practice and do exercise to be skilled in the "Analytical Dictionary of Chinese Characters". The connective use of "Xue" and "Xi" appeared first in "The Analects of Confucius", "To learn and, at due times, to repeat what one has learned, is it not after all a pleasure?". Accordingly, the "learning" is defined as activities of optimizing in a broader sense, as growing up activities of children educated by elders in a narrow sense. It aims to acquire the knowledge, skills or truth by means of practicing and doing exercises.

Nowadays, the concept of "learning" has accumulated several meanings on different levels along with the development of learning culture. In a broadest sense, it refers to learning activities of organism. In a broader sense, it refers to the human being's learning activity. In a narrow sense, it refers to the learning activities of students in the different schools. At a more concrete level, "learning" refers to the learning activities of specific content. Generally, the conception of "learning" contains three meanings: personal epistemic level, social-cultural level and living existence philosophical level.

First, the "learning" at the personal epistemic level is mainly studied by psychology. On the micro level, there are several theories such as "behavior changed and experiences acquired theory" "information processing theory" "function

theory" "knowing theory" "activity theory" "knowledge acquirement theory" "effect theory" "interiorization theory" and so on. [48] Basically, the theory of learning developed from the exterior to interior, from simple to complex, from "Behaviorism" to "Cognitivism" to "Constructivism". Recently, Alexander, P. A., et al. (2009) [49] reviewed the theories of learning and found that learning has basis of human nature, with time sequence, with dynamic development, with values and ethicality. They proposed one definition of learning:

"Learning is a multidimensional process that results in a relatively enduring change in a person or persons, and consequently how that person or persons will perceive the world and reciprocally respond to its affordances physically, psychologically, and socially. The process of learning has as its foundation the systemic, dynamic, and interactive relation between the nature of the learner and the object of the learning as ecologically situated in a given time and place as well as over time."

At present, the physiological mechanism of learning will be possible to discover by the development of brain science.

Secondly, the "learning" at social-cultural level is mainly studied by the disciplines like Anthropology and Cultural Studies. Existed studies have demonstrated that the concept of "learning" individually has evolved to "learning" in-group. Lave, J. and Wenger, E. (1991) [50] claimed that "learning could be viewed as a special type of social practice associated with the kind of participation frame designated legitimate peripheral participation (LPP)."Actually, this analytical approach is based on the historical tradition of Marxist. As Lave and Wenger said, "Our theorizing about legitimate peripheral participation thus is not intended as abstraction, but as an attempt to explore its concrete relations. " This view uncovered the social nature and essence of relations in the "learning". Here, learning should be considered as the way of existence in the social world, not a way to know the world.

Last but not least, from the perspective of philosophy, the richness and diversity of "learning" can be revealed. "The essence of learning is the process of people's self-improvement, development and polishing by virtue of acquiring knowledge and skills with various methods, approaches in their practice activities. It's the process to make people strengthen their subjectivity." [51]

Associated with human subjectivity, "learning should be taken as the social practical activities of human's own reproduction" and "It represents the self-consciousness and self-transcendence of individual and wholly human." [52] With holistic stance, we have revealed "cultural learning" as a new mode of learning from the perspective of cultural philosophy. "The cultural learning refers to the mode of learning in which learning subjects adapted their learning living to integrate with culture endlessly, and then achieved freedom by virtue of the culture as mediation." [53] During the cultural learning, the colorful picture of learning will be unfolded.

On the metaphysics level, the essence of "learning" has been developed by contemporary philosophers. In ANT, "Learning is not a matter of mental calculation or changes in consciousness. Instead, any changes we might describe as learning--new ideas, innovations, changes in behavior, transformation – emerge through the effects of relational interactions, in various kinds of networks that are entangled with one another, that may be messy and incoherent, and that are spread across time and space." [54] As Fox, S. (2005) explained that "the learning is a continuing struggle during the process of enactment which is the interplay of force relations among technology, things and changes in knowledge at every point in the network." [55] Accordingly, on the ontological level, the conception of "learning" is not only the personal epistemic process or social practice, but also a network affecting which results from the networking of nature and society. In the view of ANT, humans and non-humans (learning content, learning technology and so on) existed equally. Therefore, learning would not be the privilege of human in which the humans and non-humans constructing the harmonious network of learning together.

To sum up, at the philosophical level, the conception of "learning" contains three meanings: 1) The ontological level. It's a human's special way of existence and optimizing of their life which is a constructing network with various powers produced by knowledge. 2) The epistemological level. It is the process of translation as the necessary ways to constructing learning network. 3) The methodological level. It is a method for individual to consume, deliver, spread and create knowledge. This method should be carried out in the collaborative activities between actors.

4. The Reconceptualization of "NL"

According to the Etymology Study of "network" and "learning", the richness of "NL (Wang Luo Hua Xue Xi)" is coming to be clear. Certainly, it is obviously that the conception of "NL" is not just the adding or paralleling simply of "network" and "learning". Why do we add the "Hua" in the "Networked Leaning"? Because the "Hua" is usually used to represent the process of changing some objects into another situations or states by add it to the noun or adjective (The Contemporary Chinese Dictionary (5th ed.), 2002). So the term "Wang Luo Hua" contains both the static and the dynamic meanings of "network". At the basis of multi-levels meanings of "network" and "learning", the conception of "NL" should be developed to "Networked Learning" which contains three level of meaning.

Firstly, the "NL" at the technological level refers to the general learning activities by means of Internet technology. Here, the "network" is a tool for supporting learning and the "NL" is only a learning approach differed from traditional ones. According to the three meanings of "learning", there are also three meanings of "NL" at the technological level. 1) At the personal aspect, technology (network) is often regarded as a cognitive tool. For example, Jonassen, D. H., et al. (1996) has regarded as a cognitive tool. [56] They have discussed the theory and practice of taking computers as the cognitive tools in the "Handbook of Research for Educational

Communications and Technology". Based on the metaphor of cognitive tool, there are two ways to develop the research of "NL". One is to offer various learning tools for learners, so we should "design the network as cognitive tool during the process of designing the learning system." [57] Another is to study the impact of Internet technology on the learner's cognition processing. 2) At the social living aspect, Internet technology is the tool to accelerate the interaction and communication from individual to individual, from individual to group, and from group to group. Accordingly, the Internet technology for promoting the social interaction between people is becoming the main trend so that the traditional relationship between teachers and learners, even learners themselves is changing. For example, Beaty, L. and Howard, J. (2010) noted that the core of innovations brought by "NL" is the change of the nature of the teacher-student relationship and their roles. [58] Especially, the flourish of virtual communities showed the impact of Internet technology on learning at the social level. 3) At the metaphysics aspect, technology (network) has embedded into the beliefs and ideas of human to strengthen the instrumental rationality which could affect people's way of acting, selection of content and location of values and so forth. At here, the technology (network) is value-free and the human become their subject. It is need to alert that the technology will rebel and control human.

Secondly, the "NL" at the social level refers to the learning environment or context which aims to improve the interaction, communication and cooperation among learners. The "network" which shaped the modes of interpersonal interaction, social organization, power flowing should promote the learning by learners communicating and the forming of the "learning community". Similarly, according to the three meanings of "learning", there are also three meanings of "NL" at the social level. 1) At the personal aspect, technology is regarded as a communicative tool to help learners developing their social skills, and then "NL" aims to construct a network for individuals' learning. 2) At the group aspect, "NL" focused on the forming of learning communities and virtual communities. And the research of it mainly paid attention to the degree of participation and involvement of learners. 3) At the metaphysics aspect, the concept of "NL" is characterized by social constructivism of technology. That is to say, the essence of it is determined by the characters of social groups or organizations. It is worth to mention, at the social level, the Internet technology is also value-free.

Ultimately, "NL" at the philosophical level refers to the basic form of the existence of learning life which is the heterogeneous network constructed around the knowledge. From the perspective of dynamic culture, "Wang Luo Hua (Networked)" is the basic condition of people living at the present age. On the one hand, it requires human to reflect it so that to influence the structure of their cultural psychology. On the other hand, it is led by human's subjectivity so that to innovate network culture. From the perspective of existentialism, "Wang Luo Hua(Networked)" becomes the ontology of contemporary culture which includes two meanings. One is the network being as the basic structure of human life. Another is the networked action as the activities of the exteriorization of the human spirit and life structure. This special action usually maps into the process of the person knowing. According to this, Siemens, G. (2009) has proposed the connectivism which takes "Learning as the process of building a network". [59] It includes two aspects. One refers to the building of learning networks outside of ourselves. The other refers to the existed neural network resided inside our brains. At the social aspect, "NL" is the process of learners involved the practice of authentic or virtual social group and formed the identities in the learning community. At the metaphysics aspect, with the principle of dialectical unity, the "NL" becomes complex which contains ontology, epistemology and methodology. As an ontology, the concept of "NL" shifts from the epistemic approach to seek for the identities of learners in the complex network society. According to the ANT, "NL" is the collectives of actors such as learners, learning objects and learning environments and so forth. As an epistemology, the truth in the "NL" does not mean to construct a copy of the thing in the manner of "correspondence" or means to everything must hold together in a system in the manner of "coherence" but means to test something's strengths and weaknesses in such a way as to project it into feasibly accessible form. [60] In another word, truth means to practice continuingly. As a methodology, the "NL" can be taken as a complex method to deliver and produce knowledge with the theory of action research. Now it will be realized by transform it into "network action research". [61]

5. Conclusion and Implication

In the future, network society will embed the real world and the virtual world. Then the "NL" is expected to be a fundamental way to make us living better in this world. In this social world, the netizens will destroy the authority, subvert the hierarchical relationship, disintegrate the centralized system and exile the personality. In this world, the human will rebuild themselves, reconstructing the relationship and reorganizing the language. Based on this, "NL" as a new mode of education is forming. It aims to optimize the life of network learners in the network society by means of Internet technology. Based on the new concept of "NL"，we might live a more democratic life in this world. Firstly, the development of technology will promote the democratization of knowledge dissemination, which means that everyone can acquire knowledge more conveniently. Secondly, the change of social relations will promote the democratization of knowledge production, promote the transformation of the subject of educational activities, leading to new forms of educational activity, such as the birth of autobiographical method for curriculum theory. Finally, the "NL" in the philosophical sense will push the construction of post-human pedagogy and shape the democratic learning environment between human and non-human.

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