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Retrospection and Reflection on the Development of Distance Education

LIN Qiaoyan[a],*

[a] Professor of management, Taizhou Radio and Television University, Taizhou, China.
*Corresponding author.

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Abstract

By tracing back into the process of the generation of distance education, this paper shows that distance education is not generated by technology alone, but also related to the level of social development, system, culture and other factors. It puts forward the explanation framework of distance education and provides a more comprehensive analysis and understanding of the distance education and its phenomena, so as to go beyond the simple thinking of internet technology and understand the Internet technology and the essence of network education built on the basis. And based on this, it further analyzes the characteristics of online education and discusses the combination of Internet technology and education from the perspective of lifelong education to provide ideas for the possible development of distance education.

Key words: Interconnection; Distance Education; Retrospection; Interpretation Framework

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QUESTIONS RAISED

On the classification or dating of distance education, although some scholars have questioned and expressed different views, most mathematicians and teachers still accept the three generations distance education theory based on the evolution of technical means, that is, correspondence education as the first generation, radio and television education as the second generation, and network education as the third generation. Among them, the word "modern" is specially added to the third generation to express their views Different from the previous two generations of distance education. Ding Xingfu, a Chinese scholar, has analyzed and compared the corresponding technologies and characteristics of the three generations of distance education on the basis of the above theories (Ding, 2009, pp.2-9). Although the theory of three generations of distance education has strong generality and intuition, it is easy to be misunderstood. For example, it directly "implies that the later generation is advanced, the former is backward, and the latter will replace the former." (Jiang, 2009, p.32) What's more important is the technology determinism education change view brought by this theory, which thinks that the change of distance education is the natural result of the upgrading of technology. In fact, this view is not consistent with history, which leads to the over investment of education in technology, the low ratio of input to output, and the expansion of the view of technology instrumentalism. "A leader of a university jokingly said: education informatization is" burning money ". Although it has to be burned continuously, it should also be burned more rationally and more valuable." (Wang, 2012, p.27) This invisible in part of the scholars and teachers of distance education distrust, the formation of possible resistance to development. Once the concept is formed, just like what Heidegger said when he asked about technology, the debate between the two concepts established by people using educational technology on the basis of traditional education has largely obscured the essence of Internet technology, as well as the possible influence and variation on distance education. Therefore, we need to go back to the occurrence process of distance education, explain the concept of distance education from the requirements of the times and culture

rather than from the perspective of simple technology, go beyond the simple thinking of Internet technology, analyze the essence of Internet technology, and explore the perspective of the possible combination of Internet technology and education, so as to provide ideas for the possible development of distance education.

THE EMERGENCE OF DISTANCE EDUCATION FROM A HISTORICAL PERSPECTIVE

There is no doubt that there is no distance education without technology. Historically, the occurrence of education is always based on certain technology. Chinese scholar Jiang Guozhen believes that the modern school system is formed on the basis of the invention of printing and gradually popularized all over the world (Guo, 2011, pp.143 & 145). However, what we need to discuss is whether the emergence of education and its distance education is only led by the progress of technology. If not, what are the reasons? The following is a review of the emergence of distance education by technology classification or chronology.

An investigation of the emergence of correspondence education

From the technical point of view, correspondence education needs to have the following technologies: papermaking, printing (including ink technology, book printing, etc.) and postal system (including transportation), etc. However, the invention and maturity of these technologies can directly lead to the emergence of correspondence education?

As we all know, papermaking was invented by Cai Lun in 105 A.D. according to the records of the Han Dynasty. If it is based on archaeology, it can be pushed forward for more than a century (Keller, 1986, p.257). Later, it spread to Italy in Europe as late as the 13th century, and then spread to Europe. In this process, the war played an important role. Printing was first invented in China. Block printing was invented in 868. Movable type printing also appeared in China in the 1940s of the 11th century. According to textual research, printing in Europe also originated from stereotyped printing. In 1440, Gutenberg in Germany re invented movable type printing, which was popularized in European society. Now we are not sure about the connection between the two, but we can be sure that the invention of movable type printing has a far greater impact on European society than on Chinese society. Guo Wenge, a scholar, thinks: “although China invented movable type printing technology earlier than Europe, the actual publishing still relies on block printing, and the social reading culture and literacy population have remained at the level of Europe in the middle ages.” (Guo, 2011, pp.143 & 145) This may seem exaggerated, but it is not unreasonable. As for the postal system, as early as 1464, France under Louis VI established a relatively perfect national postal service system and promulgated the postal law. As late as 1635, Britain also established a royal monopoly postal system during the reign of Charles I. at that time, it was possible to “send a letter from London to Edinburgh and send a reply from Edinburgh to London” within six days (Gulding, 1986, pp.544 & 545). In other words, the postal system is quite convenient at this time. So far, although the technical conditions of the first generation of distance education still need to be improved, they are mature, and can be produced not only in Britain, but also in other European countries, such as France. However, we know that the academic consensus is that the origin of correspondence education in 1840, the British Isaac pitman will shorthand course letter to students. Then there is a question: what is the reason that Isaac Pittman sent a shorthand course to his students in 1840, and what events happened in England around 1840 that led to the emergence of correspondence education?

The postal service provides an opportunity for the country to increase revenue, which makes the local governments very happy and increases the construction of the postal system. At the end of the 18th century, Britain not only improved the roads, but also introduced the postal carriage first, which improved the speed and efficiency of postal service. However, the postage also increased, especially after the outbreak of the Napoleonic War. This caused great dissatisfaction. At this time, a member named Roland Hill proposed to abolish the system based on distance and postage meter, and replace it with a consistent charging standard based on weight, and charge in advance by gluing the “label” on each letter. “These proposals were put into effect on May 6, 1840” (Gulding, 1986, pp.544 & 545). At that time, the British government issued two earliest “labels”, which were the predecessor of stamps. As soon as the new postal system was implemented, it was immediately successful. Although the revenue of the government was greatly reduced and the postage was reduced, the number of letters delivered that year was twice that of the previous year. According to Jiang Guozhen, “the key event that triggered Isaac Pittman’s adoption of postal communication in teaching is probably the invention of stamps in 1840.” (Jiang, 2009, p.33). The acceptability of cost has become an opportunity for the emergence of distance education. Therefore, it can be inferred that distance education is not elite education at the beginning, but popular education. If we can see from behind the phenomenon of Isaac pitman’s letter to send shorthand course to students, the invention of stamps marks that correspondence education has come into being.

Around 1840, Britain took the lead in completing the industrial revolution in the world, and its industrial output value ranked first in the world. At this time, the British industry and trade were developed, the urbanization

was basically completed, and the middle class and working class formed. With the rapid development of economy, it is necessary for Britain to look for foreign markets and push its strong commodity production capacity abroad. Therefore, at this time, Britain had the movement of promoting free trade and colonizing the world, and the Opium War also happened at this time. In addition, the emerging class will inevitably produce new interest demands, which leads to the prominent class contradictions in Britain and needs to be solved to solve the problems of class status and the gap between the rich and the poor, the British government began to pay attention to the welfare of the people. In this way, Britain "laid the foundation for becoming a welfare state in the early Victorian era." [education is a national welfare. At that time, "four fifths of the working class children in London were uneducated" (Roberts, et al, 2013). Therefore, in addition to the public schools and liberal arts schools that already provided education for the children of the nobility, the rich and the middle class, a primary education system was established to solve the education problems of the working class children. At the same time, it is also the need of the development of industrial society. It needs not only high-quality industrial and commercial talents, but also skilled workers with literacy in machine production. At this time, British "businessmen, handicraft workers, technicians They are required to have their own appropriate education" (Wang, 2000, pp.266, 504, 502, 508, 507,505, 505). Moreover, under the influence of education in the United States, Germany and other countries, Britain began to establish secular universities in the industrial cities of London, Bermingham and Manchester, resulting in University promotion campaigns, forcing the reform of Oxford, Cambridge and other old universities. In order to meet the needs of machine production, Britain began to carry out vocational education for workers. It can be said that from then on, Britain began to build a universal education system.

However, correspondence education does not necessarily come into being when Britain starts to construct its national education system, but it creates an atmosphere of educational innovation. At this time, in the process of carrying out vocational education for workers in Britain, there was such a situation: Although Vocational Colleges in Britain developed rapidly at that time, the vocational education for workers was disappointing, "because it was impossible to carry out any technical education for illiterate workers, many colleges turned to spread basic culture such as reading and writing." (Li, 1995, 19) Only by providing the workers with the necessary elementary education and making them have the basic knowledge of reading, writing and calculating, can they master advanced skills. This can roughly explain why correspondence education started from the course of shorthand by mail. It also reflects the demand of adults at that time to master the basic knowledge of reading, writing and arithmetic, which led to the innovation of education mode. There is no doubt that the emergence of correspondence education makes it possible for education to cover everyone. To a certain extent, it can be considered that the proposal of education for all began more than 100 years later.

The origin of radio and television education

The occurrence of correspondence education is not a natural deduction of technological logic. In addition to pure technology, there are many factors such as the development of British society, the progress of technology application and management, and the educational reform caused by class contradictions. It is these factors that promote the combination of education and technology to produce correspondence education.

So will radio and television technology play a more important role than correspondence education technology in the process of producing radio and television education?

The development of radio and television technology is based on the second industrial revolution, namely the electrical age. In the following half century, radio and television has been rapidly popularized. Radio and television technology is born with the characteristics of fast, cross time and space and direct audio and video transmission, which has obvious advantages over paper media. Some countries and regions, including Beijing and other big cities in China, began to try radio and television education in the early 1960s. However, as a narrow sense of education and its influence on distance education, the UK Open University is undoubtedly in the forefront. It is not too much to say that it is a major innovation of British higher education with far-reaching international influence. However, it is not the direct logical deduction of radio and television technology.

First of all, from the founding process, the UK's Open University is not achieved overnight. Britain's Open University has experienced three stages: The Labor Party's proposal in 1963, the government's approval in 1969, and the enrollment in 1971. In the meantime, they have to solve the doubts of people from all walks of life. At that time, the question was: "the press was not enthusiastic, educators were suspicious of the purpose, broadcasters were dubious, and the public was obviously not excited" (Wang, 2000, pp.266, 504, 502, 508, 507,505, 505); there was also the problem of funding for running an open university, where did the money come from? To solve the problem of school running mode, the channel of radio and television, how to ensure the quality of teaching, and the way of school running.

Secondly, from the formation of the name of the University, the British Open University is not called Open University at the beginning. In 1963, when the labor party began to propose an open university, the name of

the University was not open university, but air University. As for the evolution of the University's name, Perry, former vice president of the Open University, said in his book Open University: "after the Second World War, there were three major trends in British education: first, the development of adult education; second, the rise of Educational Broadcasting; third, the political motivation to promote egalitarianism in education. The concept of Open University evolved from the aggregation of these three potentials." (ibid) The name of the University embodies the idea of running an open university in Britain and bears the political ideal of the labor party. So former British Prime Minister Wilson said: "the decision to establish an open university is a political act." John Daniel, former vice president of the Open University, also said that when the Open University was founded in the UK, the Planning Committee at that time believed that the university should be named according to its pursuit and goal, not according to the teaching media it used (Wang, et al, 2011, p.247).

Third, from the perspective of the orientation and mode of running a university, the Open University in the UK has been positioned as a university with independent governance right from the very beginning. British Open Universities are not limited to ideas and ideals. They have formulated operational principles and models for running schools. First of all, from the very beginning, the Open University has been positioned as an autonomous and completely independent university, which has the right to award degrees. The standard of degree is comparable to any other degree. To this end, they follow the example of the University grading system in Scotland and the United States and "design a plan on how to compare the degrees of open universities with those of other universities" (Wang, 2000, pp.266, 504, 502, 508, 507,505, 505); secondly, they stipulate that the education level and academic qualifications of students will not be taken into account when recruiting students, and take this provision as an axiom. For this reason, they set up basic courses for the first year of the Open University, in order to enable students to smoothly enter the second year of study; (ibid) Finally, the school running mode of the open university is clearly defined. Open university courses are broadcast by the BBC and funded by the University. The teaching methods are short discussion, boarding, regional listening and watching. (ibid) At the same time, the course is not entirely live broadcast, and correspondence courses are provided. (ibid) Therefore, the British Open University is not limited to radio and television technology, but forms a new open teaching and management mode according to the purpose and goal of running the University.

Thus, from radio and television technology to education relying on it, the needs of society and the participation of all walks of life are indispensable. In this process, education and technology need to be integrated step by step.

The emergence of network education

In the production of radio and television education, we not only see the role of some factors in the production process of correspondence education, but also see the role played by politics and its corresponding social and political system. The orientation and mode of running a school obviously highlight the influence of educational laws on the mode of running a school and its quality control. Therefore, it is not difficult to speculate that network technology cannot be the decisive factor of network education, but the emergence of network education also shows some of its characteristics, that is, there is a time overlap between the emergence of network education and the maturity and popularization of network education technology.

Network education is mainly based on communication technology, PC (portable computer) technology and software technology. Communication technology comes from the development of telephone, Telegraph and radio technology; personal computer comes from the development of computer technology, while software technology comes from the development and application of management and function of communication equipment and computer hardware. Their combination originated from the Advanced Research Projects Agency (ARPA) of the U.S. Department of defense. In 1990, ARPANET was closed and NSFNET was expanded to the Internet. In 1992, under the initiative of the National Science Foundation of the United States, a non-profit Internet association was established to undertake the previous supervision and coordination organization. During the establishment of ARPANET, scientists realized its value in academic exchanges. However, the first web browser mosaic was developed in 1993, which has been more than 20 years since the first PC was connected to the Internet. Therefore, it can be considered that the popularity of the Internet should be in the late 1990s. The information superhighway plan of the United States was put forward in 1993, and it will really start in the second half of 1996.

From the past experience, network education should be in the late 1990s, such as China's open education and the network education pilot in Colleges and universities began in 1999. However, according to the investigation of Feng Zhiguo, the scholar, network education came into being in New Jersey Institute of technology from 1985 to 1987. Hiltz, its inventor, believes: "students in virtual classroom share their thoughts, questions and answers with their professors and classmates through a kind of computer and software. This kind of computer and software enables them to publish and receive information, interact with their classmates, read and comment on lecture materials, take exams, and receive feedback without taking part in the curriculum arrangement. Virtual classroom learning can be carried out anywhere and at any time - a computer at home or in the workplace " (Feng, 2003, pp.134, 132).

It is not difficult to see that it basically covers the main elements of our usual cognition of online education mode. Therefore, it is reasonable to think that network education has come into being.

As a result, we can see that network education came into being when network technology is not yet mature. Why is there such an abnormal situation? Feng Guozhi, a scholar, believes that online education first surfaced in the United States. In addition to the fact that the United States is the leader of the Internet, it is also determined by the current situation of American education. "In the 1960s and 1970s, the United States experienced the birth peak after the Second World War." (Feng, 2003, pp.134, 132) However, the institutions of higher education for college students in the United States did not make enough preparations. In addition, the concepts of Lifelong Education (1972) and education for all (1985) have been put forward at this time, which have penetrated into all aspects of society in developed countries, and the theories of constructivism and post Fordism have also been widely spread. Therefore, a platform for practice and bearing is needed in Education. The scholar he Kekang once thought: "the reason why constructivism is rising in the contemporary era is closely related to the gradual popularization of multimedia and network technology." (He, 2004, p.15) In addition to these reasons, American innovation culture and educational technology have become an academic field, which make people more conscious and active in the application of technology in education.

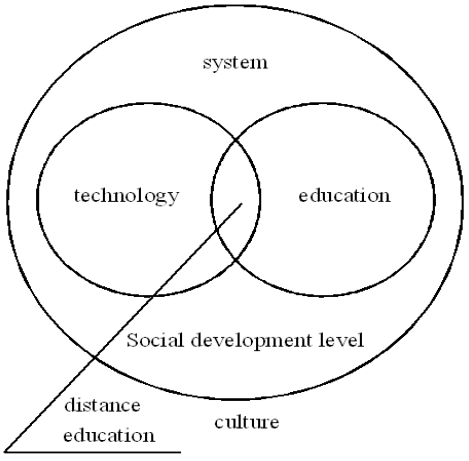
Therefore, it is not difficult to see that the application of network technology in education cannot be explained by simple technology development.

AN INTERPRETIVE FRAMEWORK FOR THE EMERGENCE OF DISTANCE EDUCATION

In the history of education, new technology, with its powerful impact on life, has affected people's judgment on the application of new technology in education. People will unintentionally strengthen the role of technology, expecting to bring about an educational revolution, thus ignoring the regularity of education itself and other social and cultural factors, resulting in unnecessary waste of human and material resources. In history, after the film appeared, Edison predicted that "books will soon be abandoned in school It's possible to use movies to teach every branch of human knowledge." (Gagne, 1992, pp.14, 19) It was not long ago that television played a negligible role in formal education (idbd). After the rise of the Internet, we have heard a kind of opinion that online education will replace the current school education. However, these prophecies or statements went bankrupt one by one.

However, their bankruptcy does not mean that the opposite view is correct. In order to solve the above two views of educational technology, scholar Wang Zhuli puts forward the theory of integration, integrating different views with inclusive thinking (Wang, 2012, p.27). This view seems perfect, but ignores the dynamic and interaction of things, so it is difficult in practice. In addition, the relationship between education and technology is not a question of who is inclusive, but how to build it. Based on the history of distance education, it is necessary to put forward an explanatory framework for the emergence of distance education, which enables us to understand the relationship between education and technology from a broader and comprehensive perspective, so as to provide an effective guidance for the educational orientation, methods and models of distance education.

Education must be based on technology, but the combination of technology and education can be divided into strong and weak. The invention of language, writing and books and education are naturally compatible. As long as there is education, they are indispensable and belong to strong combination. However, some technologies, such as slides, movies, and various audio and video devices, can improve teaching conditions and increase the intuition of teaching, but without these devices, education can still be carried out. Therefore, they are not strongly integrated with education. This can explain why these technologies often do not achieve the expected degree of integration with education.



In the field of distance education, the combination of education and technology can be divided into strong and weak. However, in the field of distance education, the strength of the combination of technology and education is related to the understanding and maturity of technology, as well as the understanding and corresponding design of education, which is determined by the uncertainty of the management and quality control of distance education. Therefore, no matter what stage distance education is in, it needs the interaction between technology and education.

We should deepen the understanding of technology and education in the interaction, and combine the methods and models of evolutionary technology and education, so as to increase mutual infiltration. And the effectiveness and level of this interaction are related to the level of social development and its system. This is the main reason why correspondence education and radio and television education come into being after the technology is mature or even quite mature, while network education comes into being before the education technology is mature.

However, social development and system correspond to its culture. As we all know, open universities in the UK are relatively successful. So far, there is no distance education school in the world that is on the right side. Apart from the process from the proposal to the establishment of open universities and what happened in the process mentioned above, it is worth noting that although there were famous universities like Oxford and Cambridge in the UK at that time, compared with the surrounding countries such as France and Germany, The popularity of their education is not high, but Britain has a good self-learning culture, "the British love reading, more than people in other countries" (Roberts, et al, 2013), in their country "nonliterary books and literary books are as popular as literature books, books about the creation of the universe and books about life compete with each other." (Roberts, et al, 2013) Therefore, although British higher education is insufficient, "it can still cultivate the most educated people in the world." (Roberts, et al, 2013) The author thinks that this should be due to the fact that Britain has been able to successfully establish an open university for nearly half a century, which is closely related to this national culture.

Therefore, the author believes that the explanation of the emergence of all kinds of distance education cannot be simply explained from the perspective of the emergence or maturity of technology, but from the development law of education and technology itself, the formation of the social development level and system of distance education, and the culture of the society and system. They constitute the explanation framework as shown in figure above. Therefore, we can explain why the educational ideas or models we introduced from abroad lead to the phenomenon of South Orange and North orange, which is the same reason that the late development of economic development does not necessarily have advantages.

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