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On the Educational Value of Technology in the 21st Century

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ABSTRACT

Starting from the requirements of human development in the 21st century, countries around the world have reached a broad consensus that 21st century skills with high-order thinking ability as the core are the purpose of current education. From the perspective of technology as a field for human beings to gain freedom and liberation, technology for the development of higher-order thinking ability enables people to obtain the freedom and liberation of the right to exert their own creativity. This kind of educational values that aims to make people become the masters of the future society and have the ability to actively transform the society demonstrates the meta-value of education. Throughout the ages, technology has always played an intermediary role in educational activities. In the 21st century's educational activities, technology should become the medium of education's meta-value.

Keywords: *Human Development, Technology, Education Meta-Value.*

I. INTRODUCTION

The educational value of technology has always been the deepest issue in the field of educational technology research and application. Some scholars discuss the integration of technological tool rationality and value rationality from the perspective of educational philosophy (Zhang Hong,2016), some discuss the essence of technological value from the perspective of technological philosophy and some discuss the importance of technical education from the perspective of subject courses Significance (GuJianjun,2018), these three categories are the main perspectives of current related research. There are also studies that put forward a "people-oriented" educational technology value orientation from the perspective of human development. The sudden new crown pneumonia epidemic forced human beings to reflect on their own behaviors, and also gave education an opportunity for profound reflection: What kind of people should we cultivate to adapt to and build a future society? At this time, it is of great theoretical and practical significance to explore the deep relationship between technology and educational value from the perspective of human development.

II. RESEARCH METHOD

This paper is based on key documents to let people understand human development and the main role of technology in human development. It allows researchers as speakers and webinar listeners to discover and learn something about the impact of technology on human development. This methodology has multiple values because it involves various disciplines related to education and technology. This is an exploratory dissertation aimed at researching, analyzing and investigating the demand for creativity and innovation in terms of technical issues and high-level thinking in this aspect of promoting human development in the 21st century.

III.DISCUSSION

3.1 Proposal of 21st Century Skills

In 1987, the OECD realized the need to establish an educational information system that facilitates statistics and comparison among member countries, and the INES (Indicators of National Education Systems) project came into being. Following the INES project, in order to develop a conceptual framework with theoretical foundations to help people better understand the skills needed to obtain a high-quality life in modern democracies, the OECD started in 1997 through DeSeCo (Definition and Selection of Competencies, 1997-1999) The project extracted a "key capability" framework from a number of related pre-projects (Haozaojie,2012). Subsequently, regions and countries such as the European Union, the United States, Canada, Singapore, and Japan have begun to study and formulate key competence frameworks in line with their national conditions, calling on the education system to promote a 21st century skills learning revolution. China proposed the core literacy concept system in 2014, which is regarded as a 21st century skills framework with Chinese characteristics. The core literacy concept system has the connotation of Chinese traditional

culture and focuses on the internal development of people, which is different from the OECD's more emphasis on external skills.

3.2 Relationship with higher-order thinking ability

Different countries have different understandings and expressions of 21st century skills based on their political, economic, and cultural backgrounds, but behind them there is a consistent consensus: 21st century skills are the key capabilities needed for human beings to adapt to future social production and life. "It is mainly not knowledge. , Is not content, but has the ability to operate and action" (Zhengli,2018), the core of which is high-order thinking ability. Here, "operational tendency" and "action tendency", in layman's terms, are people's problem-solving ability. Obviously, in the face of complex, changeable and poorly structured situations, rational thinking, in-depth analysis, critical views, innovative methods, and effective cooperation are more important than knowledge. In a nutshell, people only have high-level thinking ability to deal with the uncertain and highly changing new world. It is very necessary to reach this consensus understanding. On the one hand, this is conducive to the exchange of educational achievements between different countries; on the other hand, focusing on the concept of 21st century skills with high-order thinking ability as the core is more conducive to integrating with school education goals, thereby guiding the implementation of teaching activities.

The Taxonomy of Educational Goals by Benjamin Bloom first revealed the existence of higher-order thinking ability through the hierarchical division of educational goals. The core point of view is that in the process of achieving higher-level learning goals, the cognitive level of learners must be higher than the cognitive level of achieving lower-level learning goals. For example, "evaluation" is more difficult than "analysis". But this view of the accumulation of simple behaviors to complex behaviors has been questioned. Marzano (Robert J. Marzano) pointed out that it is unreliable to place taxonomy on the difficulty level of psychological processing, because people can sometimes use less psychological effort to complete more complex psychological processes. Mental processes should not be sorted according to difficulty, but should be sorted according to their "controllable degree". Based on this view, Marzano's classification of educational goals includes self-system, metacognitive system and cognitive system. After long-term thinking training practice, Marzano put forward the theory of "the dimension of learning", revealing the interaction between cognition and emotion, and regards willingness to learn, ability to learn and good at learning as a whole as the development of learners' higher-order thinking ability. The key (Robert Marzano,2015) John Dewey believes that the purpose of education should be to teach people to solve problems in a better way of thinking (reflection thinking). The value of this kind of reflective thinking lies in that, first, it makes reasonable actions have a conscious purpose; second, it may make systematic preparations and inventions; third, it makes the meaning of things more substantial. From this point of view, reflective thinking also belongs to the category of higher-order thinking ability. These theories about higher-order thinking ability have important guiding significance for the development of educational practice activities.

At the social level, the world's attention to higher-order thinking abilities is increasing day by day. In 2015, the President of the United States Obama signed the "Every Student Success Act" solemnly points out that it is the right and obligation of every educated person to acquire higher-order thinking skills. Many celebrities in society have also called for education reform to be geared towards higher-order thinking skills. In 2020, Jack Ma, the founder of Alibaba.The speech called for: "In the schools of the future, students will not only learn knowledge, but more importantly, the ability to cope with challenges and changes." It can be seen that all sectors of society are reaching a broad consensus: future learning must reach a high level. Level goals, the development of learners' higher-order thinking ability is the key to the success or failure of education.

3.3 Educational value from the perspective of human liberation

Human development in the 21st century is fundamentally human liberation. To examine education from the perspective of human emancipation is to examine fundamental issues such as the purpose, function, and technical tendency of education. Some scholars pointed out that the freedom of teaching under the background of artificial intelligence contains the liberation value based on the initiative of the teaching subject (Lihongxiu,2020). Thinking about the educational value of technology from the perspective of human development cannot avoid examining the value of education from the perspective of human emancipation.

3.3.1. Reconstruction of the due meaning of the value of education

The famous Chinese educator Lu Jie pointed out: "Education as training Human activities are to cultivate people who can transform the real world, have practical awareness and practical ability, and can surpass the real world and the real society. " Therefore, education not only teaches people how to adapt to the current real society, but also inspires people to dare to build an ideal society in the future. This is also an important manifestation of the value of education. From the double dimension Marx said, the educated person first obtains the liberation of the subject dimension, and then obtains the liberation of the social force dimension. But no matter in which dimension, people can be liberated because they have a certain production and labor ability and realize their own the value of social life. At this time, the relationship between the instrumental value, consumer value and meta-value of education is also clear, that is, when the instrumental value and consumer value of education are in the dual dimension of human emancipation (subject and social When the power is realized, the meta-value of education is realized.

3.4 The role of technology in educational activities

3.4.1 The evolution of the concept of technology-for human freedom and liberation

In ancient societies, due to the lack of scientific knowledge, working people in production practice usually invented and manufactured tools based on the accumulation of personal experience rather than theoretical guidance. Therefore, people gradually formed an understanding in the concept that technology is only related to material tools. It

was in modern society, especially under the extensive influence of the European Industrial Revolution, that people began to consciously use the laws of nature and realized the power of machines instead of manpower. In the encyclopedia written by the French philosopher Diderot in the 18th century, technology is defined as "a system of various tools and rules that collaborate to accomplish specific goals". The more implicit and abstract functions of technology are beginning to be realized by people. From ancient times to modern times, people's understanding of technological concepts shows that human beings understand the objective world through the system of technology, and finally gained physical freedom and liberation through continuous production practice and theoretical reflection. In modern society, people pay more attention to the design, control and use of technology than to materialized technological forms. The French philosopher of technology Ellul pointed out: "Technology is the totality of methods that are reasonably obtained and absolutely efficient in all fields of human activity, and is the sum of order, mode, and mechanism." This shows that mankind has begun to pursue a higher level. The right to exert one's own creativity. This pursuit transcends the body and is spiritual freedom and liberation.

3.4.2. Intermediary-the true nature of technology in educational activities

The application of technology in education as a conscious teaching behavior can be traced back to Pestalozzi's intuitive teaching method in the early 19th century. Its principle is to show students objects, models and other teaching aids through certain methods to improve the learning effect. The techniques used in the intuitive teaching method are generally objects and models. These are all intuitively visible, that is, they exist in the form of materialization, so we call them "intermediaries". In the 20th century, with the rise of Western communication theory, the term "Media" gradually became the new identity of technology in educational activities. The concept of educational media was born from this. In 1946, the American audio-visual educator Edgar Dale proposed the classic "Tower of Experience" theory. In this theory, from the viewpoint of "the process of learning is the process of obtaining experience", Dell expounds how audiovisual media can be an intermediary for the mutual transformation of learners' concrete and abstract experiences. This is the first theory to clarify that teaching media has an important position in teaching, and is an important theoretical basis for modern educational technology.

With the gradual enrichment of experience in the use of media in teaching, people have a deeper understanding of the intermediary role of technology in educational activities: not only can the materialized form of technology become an intermediary, the role of intelligent form of technology has also become more prominent. In the 1990s, the much-watched "Study-Media Controversy" recorded an in-depth discussion about the role of technology in education. In the "Study and Media Controversy" incident, the famous metaphor of American educational technology expert Richard E. Clark described it as follows: "Media is only a vehicle for disseminating information and has no effect on learning. It is like transporting food in a car. It will change our nutritional structure. What really affects our nutritional structure is the food it transports, not the car." It can be seen from this that Clark believes that what really affects learning is teaching methods and strategies. At the same time, another American educational technology expert, Robert Kozma, believes that media and methods and strategies should not be viewed separately. Learning itself is a complex process that is affected by many factors. When teachers properly combine media and teaching methods, learning can indeed be positively affected. In this view, technology still plays an important intermediary role, but it is not only a tangible materialization part, but also exists in an intangible intellectualized form in combination with teaching methods.

Now it seems that Kauzman's point of view is more reasonable at the moment. As written in the definition of the educational technology discipline itself, "educational technology is research and ethical practice that promote learning and improve performance by creating, using, and managing appropriate technical processes and resources.

(AECT, 2005)" (Peixinling,2010). The expression "technical processes and resources" points out that tangible technology must be organically integrated with educational processes and resources in order to achieve the purpose of promoting learning and improving performance. Throughout the ages, technology has always been It plays an intermediary role in the relationship between man and nature, man and society. Educational technology disciplines should clearly recognize the role of technology, and pay more attention to how to play the intermediary role of technology, rather than technology itself.

3.4.3. The intermediary of education's meta-value-the reshaping of the role of technology in education in the 21st century

Throughout the history of the evolution of technological concepts, we can see that its interpretation always extends in the depth and breadth of human freedom and liberation-from physical freedom and liberation to spiritual freedom and liberation. Through the understanding of the role of technology in educational activities, we also clearly see that with the help of intangible and tangible technology, people gain experience leading to higher-level learning goals. Higher-level learning is a necessary condition for the development of higher-order thinking ability. Therefore, the development of higher-order thinking ability is inseparable from technology. From a philosophical point of view, the educational interest contained in the high-order thinking ability as the core of 21st century skills points to the freedom and liberation of people's creative rights. It can be seen that in the context of the 21st century, the connotation of the role of technology as an intermediary and its conceptual interpretation have been highly unified. At this time, let us revisit the educational technology view of Donald Ely, a pioneer in educational technology. He once pointed out clearly and profoundly that technology itself is only a means, it cannot provide a purpose for educational technology, and the purpose of educational technology can only come from education itself. From this point of view, in real educational technology, education and technology are inseparable. Some problems in education do need technology to solve, but "what technology to use" and "how to use technology" also need to maintain a dialogue with education.

Education in the 21st century is for people to better prepare for the future, become the master of the future society and have the ability to actively transform society. Technology should always focus on this goal and firmly become an intermediary of the value of education.

IV. CONCLUSIONS

No one can predict that human society will enter the third decade of the 21st century in the context of the new crown pneumonia epidemic raging around the world. I think back when the OECD proposed the 21st Century Skills Framework, it had already issued the aphorism of "preparing for the future". But standing in the moment, is our education prepared for this? The epidemic has made the competition between countries more intense, and this competition is prominently manifested in the competition for talents. China's demand for the cultivation of innovative talents is more urgent than before. This is the common task and mission faced by governments and educators at all levels in the post-epidemic era. At the same time, in the era of artificial intelligence, how to control technology and play its due educational value is also a huge challenge for us. It is true that people's grasp of value and value practice are themselves a creative process (Jin Shengpi,2015). Therefore, the broader the understanding of the educational value of technology, the richer the creative activities in education will be, and the educational practice of cultivating innovative talents will be more important. It will go deeper.

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