

# Encyclopedic Learning and Mastery of New Tools

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**Abstract:** *Under the background of the deep integration of knowledge explosion and digital technology, the traditional education paradigm with the core of subject and examination is facing severe challenges. Based on the philosophical thinking of the essence of education and the analysis of the realistic dilemma, this paper puts forward the dual core education concept of “encyclopedic learning” and “new tool Mastery”. The research shows that: providing broad knowledge stimulation in stages is the key path to stimulate individual potential, and the acquisition of “new tools” such as digital literacy and critical thinking is the survival cornerstone to control the information flood. The two endow each other, and point to the ultimate goal of education, which is to train modern citizens with freedom of thought, lifelong development and a better life.*

**Keywords:** Encyclopedic learning, New tools, Digital literacy, Critical thinking, Education paradigm, Lifelong learning.

## 1. Introduction

We are in an unprecedented era of knowledge. The total amount of information is growing exponentially, and the cycle of knowledge updating is sharply shortened. “What to learn” and “how to learn” become the core proposition of education. At the same time, digital technology deeply reshaped the way of knowledge production, dissemination and acquisition. The traditional subject based teaching, textbook center and exam oriented mode increasingly show its limitations: the knowledge acquired by students is often fragmented and inert, divorced from real life, and difficult to deal with complex and changeable real challenges; The application of emerging technology tools mostly stays in the shallow operation, lacking the ability of deep integration and critical control. In this context, it is an inevitable direction for the transformation of education paradigm to re-examine the ideal of “Encyclopedia”, endow it with the connotation of the times, and integrate the mastery of “new tools” [1].

## 2. Encyclopedic Learning: Nurture Depth and Interest in Breadth

### 2.1 Connotation: Knowledge Enlightenment Beyond the Boundary of Disciplines

Encyclopedic learning is not the pursuit of omniscient, but through the provision of multi-disciplinary and interdisciplinary knowledge stimulation in different stages of education, such as history, geography, biology, art and philosophy, to build a cognitive framework for students. In each stage, provide as much “encyclopedic” knowledge as possible. Students may be interested in some of the knowledge in each stage. If they are interested, they will take the initiative to understand and learn, and eventually learn well. At the same time, we should see that students may not be interested in the knowledge they are interested in at that time, so this is the necessity of providing “encyclopedic” knowledge at each stage. It allows students to choose and adjust at each stage, until students form a more stable and clear knowledge accumulation, which is beneficial for life. The core of this learning mode is to stimulate depth by breadth, allowing students to discover their potential in contact, rather than being disciplined by a single discipline too early. For example, the activities of depicting pictures, observing clouds and planting crops in natural education are essentially to get

through the boundaries of science, art and life through multi sensory experience; And being familiar with history is not a dead record event, but a learning of historical experience and spirit. This kind of questioning of the nature of knowledge is exactly the value of “encyclopedic” learning.

### 2.2 Necessity: To Solve the Separation Dilemma of Traditional Education

The prominent problem of current education is the separation of knowledge and life. After students learn English, mathematics and other subjects, they have vague basic cognition, which is difficult to apply to the actual situation; The imbalance between rural education and urban education resources leads to the fact that the contact advantages of rural children to nature are not transformed into cognitive advantages. Encyclopedic learning responds to these questions in the following ways. One is to connect life and knowledge. First aid knowledge, legal common sense, risk avoidance skills and other practical content into the curriculum, so that knowledge from books to reality. Two is to respect individual differences. Recognize that people’s natural endowment is different, and through the supply of multi field knowledge, students with different interests can find the driving force for self-development. Three is to make up for the rural short board. The rural life scenes, such as planting, handicraft, folk knowledge and experience, are transformed into learning resources, so as to realize that rural areas are schools, and society is education.

## 3. The Mastery of New Tools: From “Knowledge Acquisition” to “Ability Construction”

### 3.1 Connotation: The Dual Dimension of Tools – Thinking and Media

“New tools” do not only refer to technical means, but the unity of thinking tools and media tools. Thinking tools take logical thinking as the core, including critical thinking, systematic thinking and empathy [2]. The transformation of people’s ideas can’t be completed overnight, it needs a long-term training process, and such training is gradually formed by constant impact and stimulation of a person’s mind in one case after another. With the help of this new tool of thought experiment, people’s complex thinking can be gradually

formed [3].

Media tools refer to the Internet, videos, museums, digital resources and other modern learning carriers. The emergence of the Internet era puts forward new requirements and new precautions for training talents. Under the influence of the Internet environment, students will absorb, accept and interpret this new information, and consciously imitate this new behavior to think about and complete their next life. The resulting psychological factors such as emotions, motivations and personalities directly or indirectly affect students' life and learning. If you can cultivate students' interests, hobbies, then students will take the initiative in their spare time to understand and learn what they are interested in. It's an educational force. For example, one may not learn much knowledge from the school's history and geography curriculum, or the knowledge is just to cope with the exam, after a period of time, these written knowledge disappeared; But if he likes fitness, food and tourism, he will take the initiative to understand and learn with the help of the network, and master a large number of relevant knowledge and skills. In the same way, if he likes history and geography, he will read relevant books and documentaries in his spare time. With the help of these convenient and abundant learning resources, he can learn better and easier than in school. This provides the possibility for "encyclopedic" learning and "new tools" mastering.

### **3.2 Value: Breaking the Dilemma of "Institutional Screening" in Education**

Traditional education takes examination subjects as the threshold, leading to some students becoming companions, and the mastery of new tools can reconstruct the learning path. One is the democratization of knowledge acquisition. Through the network platform, rural students can access urban high-quality resources to make up for the resource gap between urban and rural education. Two is the diversity of ability evaluation. Instead of defining talents according to their scores, they are committed to training students' ability to seek knowledge, screen knowledge and apply knowledge. Just as the top three of the poetry conference may only be poetry lovers, but the ability to test and research is different. Three is the sustainability of lifelong learning. Mastering new tools means having the key to autonomous learning. In learning, some students are good at all subjects. This is because there is a tool in the compilation of textbooks, the implementation of teaching and the specific methods to get high scores, similar to the situation of drug therapy. And this part of students are better at this mode. If there is another test mode, it may be replaced by another part of students who get high scores. Or in other words, this mode (including other things, of course) has a key to high scores. These people have mastered it, known as "new tools.". Once you enter it, the later process will be much easier, and it will be like a fish in water. So another part of people don't have to struggle with this, they can go to find their own "new tools".

## **4. Practice Path: in the Integration of Tradition and Innovation**

### **4.1 Curriculum Reform Should Change from "Textbook Center" to "life center"**

One is content integration. Design a curriculum framework integrating wide area knowledge and core literacy, and greatly increase the proportion of inquiry and project learning. Simplify repetitive and outdated content to make room for interdisciplinary integration and interest exploration. Primary and secondary schools should update their knowledge in time and teach students the knowledge in life. Teach students the knowledge of earthquake, let them learn to avoid danger; Teach students legal knowledge so that they can effectively safeguard their rights and interests in future life; Give the students the knowledge of first aid so that they can help others in special situations in life; Teach students reading methods to make them more comfortable and effective to talk with books; Teach students the basic knowledge of beauty, and let them go to museums, science and technology museums and art museums to have a more specialized view and dialogue with nature; Show children dragonflies, snails and butterflies with various vivid pictures and videos.

Two is form innovation. Make full use of the role of modern media, for the existing high-quality videos, such as historical stories, geographical knowledge, biological common sense, let students see, they stimulate students more than words and pictures, which is an effective supplement to the form of words and pictures, and often can play a better role. The state organizes or assists in the production of videos on history, geography, science and astronomy, and organizes students to learn. Today's textbooks should not only be limited to paper textbooks, but also a set of digital new tools should be created to conform to the direction and advantages of social development in science and technology, and reasonably applied to the process of education and teaching [4].

### **4.2 The Role of Teachers Should be Changed from "The Teacher" to "The Guide"**

One is to build a platform. The introduction of people in various fields of society into the field of knowledge production, [5] to get through the school and society. On the one hand, it can strengthen the contact between the school and students' daily life, forming a good social atmosphere; On the other hand, it can enable students and all walks of life to get what they need, increase their knowledge, enrich their knowledge, guide them to understand life, know how to live and live, and also give certain subsidies to all walks of life.

Two is to stimulate interest. Cultivate children's interests from childhood and make them become children's living habits. In this way, children will take the initiative to read, and feel that reading is a pleasure. No matter where they are, or whether they are urged, they will use their time to read. When they grow up, they will also take the initiative to find books, rather than being forced to read them or because of some additional factors. On the contrary, those reading plans imposed on children by their parents may not be able to read, and the efficiency and quality of reading will not be very high. If they are placed in an environment without supervision, they may not pick up books and turn to other things.

Three is the use of demonstration tools. In classroom teaching, teachers should not only explain the tool functions, but also guide students to gain practical experience through practical demonstration. The core is to cultivate the scientific method

of logical reasoning, improve the critical ability of information screening and screening, and cultivate the comprehensive literacy of efficient use of various types of digital resources [6]. Finally, it cultivates an active, open and flexible thinking quality. Like the overpass, you can go up, down, left and right, and you can come here.

#### **4.3 The Evaluation System Should Change from “Single Score” to “Multiple Growth”**

One is process evaluation. Abandon single score evaluation, establish a diversified evaluation system, and focus on high-level elements such as process performance, work achievements, problem solving ability, collaboration ability and critical thinking. Pay attention to the cultivation of students' interests, habits and thinking development, rather than just judging the merits by the test results.

Two is personalized feedback. Invest in the construction of an open and high-quality digital learning resource library; To provide teachers with continuous training focusing on new tools and interdisciplinary teaching; Ensure that all students have fair access to digital devices and network connections. Through dialogue, encouragement and democratic atmosphere, students' potential can be found, and interest direction can be re established for students who fail in the exam. For students who are gifted in a certain field but have insufficient total scores, a special selection mechanism should be established to avoid talents being submerged in the flood.

### **5. Challenge and Reflection: Looking for Balance between Ideal and Reality**

The implementation of the concept of “encyclopedic learning” and “new tool Mastery”, of course, points to the ideal picture of education, but its promotion process is inevitably embedded in the complex reality structure and social and cultural context, facing multiple tensions and challenges. A profound understanding and prudent response to these challenges is the key to the smooth transformation of education paradigm.

The first challenge is the dialectical unity of knowledge breadth and cognitive depth [7]. “Encyclopedic learning” emphasizes to stimulate interest through extensive contact with knowledge to build a cognitive framework, but this approach is likely to be superficial in practice. Information overload may lead to students who are just superficial, extensive but lack of structured system, neither patience nor deep expertise. This is in contradiction with the trend of specialization emphasized by higher education and the trend of social fine division of labor. The solution lies in recognizing that “breadth” is the premise of “depth” rather than the substitute. The key lies in the cultivation of persistent curiosity and refined habits of critical thinking. Educators should guide students through well-designed project-based learning and problem-driven inquiry tasks, and help them turn curiosity into an internal driving force for professional exploration through extensive participation in natural focus and continuous questioning. At the same time, the curriculum design must be clear about the “core concept” and “knowledge framework map”, avoid falling into endless knowledge piling up, ensure that comprehensive knowledge

ultimately supports the understanding of core concepts, shape cognitive models and cultivate cross field transfer ability. This requires educators not only to improve the ability of curriculum integration, but also to improve students' evaluation ability, and find the best dynamic balance between “spreading the big net” and “deep cultivation”.

Secondly, the tension between technology empowerment and humanistic care constitutes another challenge. Although the “new tools” expand the learning boundary, the excessive expansion of technological rationality may lead to the “instrumentalization” and “dehumanization” of education. On the one hand, deep dependence on digital tools and online resources may lead to problems such as insufficient information discrimination, distracted attention, weak ability of deep reading and independent thinking, which makes students trapped in the shackles of “information cocoon room” or algorithm recommendation, leading to passive acceptance of knowledge rather than active construction of cognition. On the other hand, without the nourishment of humanistic spirit, the efficient and convenient technology may weaken the value cultivation. Digital literacy should not only refer to technical operation skills, but also include information ethics, civic responsibility in the digital era, critical judgment and deep concern for human common values [8]. Education must guard against technology becoming a new control tool or aggravating social inequality. Therefore, while embracing technological convenience, we must strengthen the core position of humanistic education, and integrate philosophical speculation, ethical discussion, classical reading, artistic cultivation and social participation into the curriculum system. In this way, the application of science and technology has always served the all-round development of human beings, cultivated a sense of social responsibility, pursued the meaning of life, and established a solid connection between efficiency and temperature, and between instrumental rationality and value rationality [9].

Finally, the structural contradiction between the concept vision and the institutional inertia is a deep practical obstacle. Rooted in the traditional education system of subject teaching, standardized examination and teacher led mode, it has long formed a deep-rooted path dependence. In order to achieve “encyclopedic learning” and “new tool Mastery”, it is necessary to restructure the curriculum framework to break the disciplinary barriers and integrate the knowledge system, which is a great challenge to the existing textbook system, teachers' knowledge structure and school management mode. To change the evaluation system from a single score indicator to a multi-dimensional growth record, it is necessary to develop a reliable formative assessment tool and establish a talent selection mechanism recognized by the society, which involves complex issues such as education equity and social trust. Teachers must transform from knowledge transmitters to learning guides, curriculum designers and technology integrators, which requires the establishment of large-scale, continuous and efficient teacher training and resource support systems [10]. To ensure that urban and rural students and students of different socio-economic backgrounds can get high-quality “encyclopedic” learning resources and necessary “new tools”, it needs strong policy incentives and financial investment. Breaking through these institutional barriers requires systematic top-level design, sustained policy support,

social consensus building and innovative exploration of front-line educators. This is a long-term process, involving the adjustment of interests, the renewal of concepts and capacity building. It needs to be led by the ideal goal and gradually achieve breakthroughs with a pragmatic attitude.

## 6. Conclusion

In the era of information explosion and the rise of artificial intelligence, the combination of “encyclopedic learning” and “new tool Mastery” represents an important direction of the evolution of education paradigm. It no longer pursues the classical “omniscient”, but emphasizes the seeds of extensive knowledge in the critical period of individual growth, and stimulates the flame of internal interest; It is not satisfied with the surface application of technology, but is committed to training the core literacy of controlling information, deep thinking and solving complex problems. These two wings are like the wings of a bird, jointly supporting learners to fly in the boundless universe of knowledge, giving them the ability to learn for life, adapt to change, create value and eventually lead to a “better life” for individuals and society. The core of reconstructing education is to cultivate free thinkers who can establish connections in chaos, maintain concentration in changes and expand cognitive boundaries with tools. Just as the sower knows that not every seed will germinate in the season, providing full knowledge stimulation in stages is exactly the opportunity for individual life to bloom in the unknown future.

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