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Exploration of Core Literacy from the Perspective of Educational System

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Abstract: Core literacy is not only the embodiment of the educational goals of the 21st century, but also the "paradigm shift" of the educational goal system in the context of the information society, knowledge economy, lifelong learning and globalization. The reform of the education system triggered by core literacy is multi-dimensional, including the change of thinking mode, the adjustment of system hierarchy, and the adjustment of content and structure. Therefore, the reform of the education system provides an effective research perspective for us to deeply understand the concept of core literacy.

Keywords: core literacy, educational system, thinking mode

Introduction

Since the Ministry of Education promulgated the *Opinions on Comprehensively Deepening Curriculum Reform and Implementing the Fundamental Task of Moral Education* in 2014, the document mentioned that "the Ministry of Education will organize research and propose a core competency system for student development at each school stage, and clarify the lifelong adaptability that students should possess." The necessary character and key abilities required for development and social development"[1]. At this point, "core literacy" began to be rapidly spread by various academic circles in my country. The research structures and development paths of core literacy from different perspectives are different, and the research ideas are also different based on different positions. The current mainstream is the consequentialist orientation and Systems theory orientation[2]. From a systematic perspective, core competencies can be put into practice, but how to implement them? Worth pondering.

1. Core competencies under systems theory

1.1 The necessity of transforming systems theory

Early research on core literacy under consequentialism mainly focused on its connotation and definition, and its focus was on solving the problem of "what kind of people should be cultivated?" Core competencies were first mentioned in the research report of the Organization for Economic Co-operation and Development and the Council of the European Union (OECD). In 1997, the organization formulated the *Definition and Selection of Competencies: Theoretical and Conceptual Basis* (DeSeCo) research project plan. , in 2016, each system was explained in detail from the three perspectives of knowledge, skills and attitudes, and finally the core competencies were defined as: the various skills necessary for everyone to develop themselves, integrate into society, and be competent at work in a knowledge society. A collection of knowledge, skills and attitudes[3].

The research idea of consequential theory is to provide a clear definition for core competencies, analyze the internal structure, and provide a direction for practice. However, the theoretical basis is weak. How can core competencies be

implemented in student groups and how should they be specifically cultivated? All are worthy of related system design.

However, due to the shortcomings of consequentialism, many scholars have begun to put forward the perspective of systems theory. The research approach with a systems perspective not only focuses on issues such as index selection and connotation definition of core competencies, but also focuses on support for the implementation of core competencies. For example, the core literacy research of the United States Alliance for 21st Century Skills (referred to as "P21") is carried out under the guidance of this idea. The 21st century core literacy framework proposed by P21 is comprehensive and systematic, and supporting systematization is the guarantee for the implementation of "21st century skills" . Under the leadership of this policy, different countries have proposed their own systematic proposals, represented by France's "common culture", Germany's "key competencies", and Japan's "basic academic abilities". Subsequently, the National Student Assessment Project (PISA) proposed Chinese literacy , mathematical literacy, scientific literacy and other research[4], from "what kind of people to cultivate" to "how to cultivate people" as the fundamental purpose.

1.2 Core competencies under China's system theory

So, what are the core competencies under the system theory of China? Professor Chu Hongqi from China drew on the research results of the *Core Competencies for the Development of Chinese Students* released in September 2016, and divided the core competencies into six dimensions: innovation ability, critical thinking, citizenship literacy, cooperation and communication abilities, and independent development abilities. , information literacy[5]. Analysis shows that these six dimensions not only specify the general line of positive development for contemporary students, but also provide feasible methods. Integrate and apply the above 6 abilities to form a higher-order ability complex, so that you can meet various challenges critically and creatively. The tendentious conclusions on these six dimensions are as follows.

(1) Innovation ability, the ability to create novel, unique, and socially valuable products. A person must have innovative thinking, innovative ability and the ability to put it into practice at the same time. Only the spirit of innovation is undoubtedly just talk on paper, while only practical ability seems to lack the ability to think. Only by combining the above two abilities can we make practical contributions. We must have the courage to think and practice without fear of failure.

(2) Critical thinking, the spirit of speculation was proposed as early as in ancient Chinese philosophy. The language version of "Book of Rites· Doctrine of the Mean": "Learn extensively, inquire carefully, think carefully, discern clearly, and practice diligently ." Volume of "Chuanxi Lu": "If it is just a matter of gentleness and care, you can If you talk all in one day or two, what kind of intellectual thinking is needed ? "Ancestors have long explained the importance of thinking. To cultivate talents in the new era, individuals need to use induction, introspection and reasoning abilities. . Carry out effective analysis and comparison, and finally draw conclusions based on it. In short, critical thinking, as a scientific thinking method, is also an advanced thinking ability.

(3) Cooperation ability is a strong driving force for enterprise development and the strongest competitiveness for personal advancement. Cooperation also includes the ability to actively participate, have the ability to discuss effectively, respect every member of the group, encourage others to propose diverse viewpoints, objectively evaluate viewpoints, and analyze the relationship between various elements in the group. It can be seen that cooperation is a symbiosis of personal qualities and group cooperation.

(4) Communication skills. Communication skills are particularly important today in the 21st century. The dissemination of any ideas is achieved through communication. Communication not only refers to the freedom to express one's opinions, but also refers to the ability as a "listener" to respect others, understand others, and respect cultural multidimensionality.

(5) Information literacy determines whether an individual can capture key information in a timely manner, ignore invalid information, and use accurate information to better handle problems. For example, with the advancement of science and technology, qualitative analysis software such as Nvivo is often used in educational research to classify effective information and code different nodes, thereby improving work efficiency.

(6) The ability of self-development, which is a profound insight ability for individuals. Individuals must understand their own strengths and weaknesses, understand the changes in the background of the times, and keep up with the times. Features adaptability and flexibility.

In this way, these six dimensions have provided preliminary ideas for "how to cultivate better people", allowing our country to implement core competencies and make up for the shortcomings of the result-oriented theory.

2. Interdisciplinary thinking based on system theory

2.1 The importance of cultivating interdisciplinary thinking in core competencies

Cultivating interdisciplinary thinking is mentioned in the *American 21st Century Super Core Competencies*, and it is proposed that its thinking is important in implementing core competencies under systematization. Since the promulgation of the No Child Left Behind Act in 2001, the American education sector has reaffirmed the relevant provisions of the Elementary and Junior Secondary Education Act of 1965. On the basis of retaining the traditional core curriculum, five additional interdisciplinary subject learning contents are added. The purpose is to help students further learn to deal with specific problems in real life, and effectively enhance the feasibility of applying core competencies into educational practice. Implementation, reflecting the importance of interdisciplinary thinking. And use the characteristics of system theory to further implement this idea into practice.

After the release of China's *Core Competencies for the Development of Chinese Students* in 2016, it triggered an upsurge in research on core competencies at different academic levels and in different subject areas. How to carry out core literacy research scientifically and effectively has attracted more and more attention from researchers . Core competencies do not belong solely to a certain discipline, nor are they targeted at specific issues in a specific field. On the contrary, they emphasize that individuals should strengthen their acquisition of knowledge and skills. From the perspective of personal growth and development and future social adaptability, competencies that are of critical significance to any individual are defined across disciplines and situations. Therefore, interdisciplinarity under core competencies has higher-order functionality and integration, and possesses interdisciplinary core competencies. According to domestic and foreign research perspectives, interdisciplinary thinking is a necessary comprehensive quality for contemporary people that integrates a few key factors. Therefore, it is particularly important for students' development and may even directly affect future success. In this way, cultivating interdisciplinarity is urgent and must be put on the agenda as early as possible.

2.2 Development direction based on systematic interdisciplinary

As education in the new era focuses on cultivating students' interdisciplinary thinking, there is currently a lot of research on "core literacy + disciplines", such as mathematics exploration based on core literacy, high school chemistry exploration based on core literacy, and high school chemistry exploration based on core literacy. Primary school English exploration and other titles. Driven by hot words, all basic subjects are moving closer to "core competencies". So how should we cultivate students' interdisciplinary core literacy thinking so that their systematic thinking can be transformed into correct and practical practice?

At present, it is concluded that the development direction of students can be roughly divided into several levels. 1. Master basic knowledge and skills. This is the purpose of establishing basic subjects. However, it cannot focus on students' mastering of basic subjects. On the contrary, it is necessary to go beyond it, master the thinking ability between disciplines and conduct continuous reflection and induction. Based on this, it is even more necessary to change the direction of education, from "examination-oriented education" to "quality education." 2. Transform basic methods from theory to practice. Practice without direction is wrong and blind. The basic method serves as a guiding tool to transition theory into higher-order ideas. From this point of view, mastering the practical method also requires students to figure it out carefully. 3. Finally, after a long period of time, a small number of core thinking qualities with interdisciplinary characteristics are systematically condensed in learning activities.

This integrated interdisciplinary core competency is stable in at least two aspects: one aspect is not easy to change

across situations. Because mastering core thinking literacy can not only deal with complex problems in different disciplines, but also master a kind of learning ability. Applying this learning ability, such as creative thinking, critical thinking, etc. to learning, such a learning method is meaningful. , only then can we have a direction; on the other hand, it is not easy to change with the changes of the times. From ancient times to the present, no matter how the times develop, a person's core qualities will not change. For example, innovative talents are the focus of active cultivation in every country, and even in every era. Students trained in this way will eventually use interdisciplinary thinking to better integrate into social work practice and devote themselves to the reform and development of socialism with Chinese characteristics in the new era.

3. Reflections and suggestions

3.1 Existing issues in core competencies under systems theory

Today, our country's education has entered deep water, and "core literacy" faces opportunities and challenges. In terms of opportunities, there are many international research results that we can refer to, learn from, and point out a feasible general direction, such as cultivating students' innovative thinking, critical thinking, integrating interdisciplinary thinking, etc. However, there are still many problems we have to solve in terms of challenges, which are as follows: 1. The current existing research methods in our country are not closely related to core competencies. Although scholars are currently working hard to study a variety of methods, the current progress is far from sufficient. Although core competencies have been theoretically proposed, they cannot be quantitatively studied. 2. Regarding the matching of core competencies and basic disciplines, although considerable achievements have been made, there has been a trend of "following the trend". Some contemporary scholars have not conducted in-depth and lasting research on a point of view, but instead " Because of the research motivations of "following the trend" and "hot spots", the research on core competencies is one-sided. This is the trend that leads to various basic disciplines to be arbitrarily linked to core competencies. 3. The core competencies have not been truly put into practice. Practice is the only way to test the truth. If you want to verify whether a point of view is correct, you must test it in practice. However, our country's current education still lacks practical capabilities for core competencies.

3.2 Suggestions for future research paths

3.2.1 Conducting research on “core literacy” based on multiple methods

There is still a lack of relevant research methods for the study of core competencies. Although methods serve to solve problems, each research method has its own structure and logic. Based on this, we can boldly propose that core competencies are a "hot topic". The word "puts forward a future outlook. Large-scale statistical measurement research on students' core competencies in China's education sector has not yet been carried out, and no standardized scale has been introduced as a norm for comparison. Building a map of students' core competencies from elementary school to university will help us study the relationship between core competencies and relationship with other variables. In the future, we can also connect core competencies with cognitive neuroscience and use technologies such as ERP or fMRI to examine the differences in brain electrical activity between individuals with high and low core competencies. In future research, we can combine brain physiological methods to explain the differences in individual core competencies. Intrinsic physiological characteristics and functional roles.

3.2.2 Making core education long-term

Some scholars have suggested that "core competencies" are outdated, or have replaced "core competencies" with "key competencies". These views are all wrong. Regardless of whether they are key competencies or core competencies, in fact, they only have different names, but their content is the same. They are all a few competencies that promote better development of students. So there is no need to follow trends. It is necessary to study the topic thoroughly, to understand its connotation and structure, and to grasp its development. The problems faced in different eras are also different. Core

literacy is a comprehensive literacy that benefits lifelong positive development, so long-term research in this field is of far-reaching significance to both the student group and the country. The best method is to conduct longitudinal follow-up research on individual cases or groups. Through long-term research, we can discover the importance of core competencies to human development and how to cultivate good people.

3.2.3 Putting "core competencies" into practice

We believe that "literacy" is essentially an external behavior that can be implemented and measured and must not be mixed into a theoretical system. Nowadays, all people are developing core competencies. The key is to implement core education in the education system and practice from practice. Different disciplines must integrate interdisciplinary literacy, and the word "core" must be implemented in practice. However, the current education in our country still focuses on examination subjects, and non-examination subjects cannot be provided in sufficient numbers. If a school cannot strictly follow the class schedule, then the core competencies are just words on paper and have no foundation, which will ultimately affect the all-round development of students. Strictly following the curriculum is the fundamental foundation for core education. Professor Yang Xiangdong also pointed out that students should have process experience, including the experience of knowledge generation, the experience of knowledge growth, the experience of knowledge results, and the experience of knowledge application. Only through these processes can knowledge transfer and knowledge innovation be finally achieved . "How to implement core education into practice as early as possible" and then proposed three changes in the educational system: 1. Educational goals need to be upgraded and structural adjustments made; 2. Curriculum content needs to be accurately aligned with core competencies; 3. , the teaching and learning methods must be accurately connected with the core competencies.

4. Conclusion

In conclusion, the exploration of core literacy from the perspective of the educational system reveals the profound implications and necessary reforms in contemporary education. Core literacy, as a pivotal educational goal of the 21st century, signifies a transformative shift in educational paradigms, driven by the demands of the information society, the knowledge economy, lifelong learning, and globalization. This shift necessitates comprehensive changes within the educational framework, encompassing alterations in thinking modes, system hierarchies, and curricular content and structure. By examining these dimensions, we gain a deeper understanding of core literacy and its critical role in shaping effective and responsive educational systems. The ongoing reform in education, motivated by the principles of core literacy, underscores the importance of adaptability and innovation in nurturing individuals who are well-equipped to thrive in an ever-evolving global landscape.

Conflicts of interest

The author declares no conflicts of interest regarding the publication of this paper.

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