

# Cultivation of Civic Literacy and Curriculum Innovation in the Digital Age

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**Abstract:** With the in-depth development of digital technology, civic literacy in the digital age has become an essential quality for citizens to adapt to social development. This study aims to explore the path of civic literacy cultivation and curriculum innovation in the digital context. Adopting the methods of literature review, comparative analysis and case study, it systematically sorts out the connotation and core elements of digital civic literacy, analyzes the current problems of civic literacy cultivation and curriculum construction, and explores the innovative strategies of curriculum design, teaching implementation and evaluation system. The results show that digital civic literacy includes information literacy, ethical literacy and participatory literacy, and curriculum innovation should focus on integrating digital elements, optimizing teaching modes and improving evaluation mechanisms to promote the all-round development of citizens' digital civic literacy.

**Keywords:** Digital Age; Civic Literacy; Curriculum Innovation; Digital Civic Literacy

## 1. Introduction

### 1.1 Research Background and Significance

Digital technology has penetrated into all aspects of social operation and personal life, reshaping the way citizens communicate, work, study and participate in social affairs. The popularization of intelligent terminals and the development of network technology have made digital participation an indispensable part of citizens' daily life, and the requirements for citizens' comprehensive quality have been raised to a new level. Digital civic literacy is no longer an optional ability but a basic quality that citizens must possess to adapt to the digital society. The uneven development of digital civic literacy

among citizens has led to the emergence of a series of social problems. Some citizens lack the ability to identify false information, which easily leads to the spread of rumors and misinformation on the network, affecting social order and public trust. Some citizens ignore digital ethics and norms, and there are behaviors such as network violence, privacy infringement and intellectual property infringement, which damage the healthy ecological environment of the network. At the same time, the digital divide caused by the differences in digital literacy also affects the fairness of social resources distribution and the realization of social equity. In this context, strengthening the cultivation of citizens' digital civic literacy and promoting the innovation of related courses have become an important task to promote social progress and realize the high-quality development of education. The research on the cultivation of civic literacy and curriculum innovation in the digital age helps to clarify the core connotation and cultivation path of digital civic literacy, provide theoretical support for the reform of education and teaching, and help citizens improve their digital adaptation ability, so as to better participate in digital social life and promote the construction of a harmonious and healthy digital society.

### 1.2 Research Status at Home and Abroad

Foreign research on digital civic literacy started earlier, and scholars have carried out in-depth exploration on its connotation, composition and cultivation path. Foreign research pays more attention to the combination of digital technology and civic education, emphasizing the cultivation of citizens' digital participation ability and digital ethics awareness. Some foreign universities have set up special digital civic education courses, integrating digital literacy training into the whole process of education and teaching, and formed a relatively mature curriculum system and teaching mode. However, due to the differences in social system,

cultural background and educational concept, foreign research results cannot be directly applied to China's national conditions, and need to be adjusted and optimized according to China's actual situation. Domestic research on digital civic literacy has developed rapidly in recent years, and scholars have carried out a lot of research on the concept definition, composition elements and cultivation strategies of digital civic literacy. Most studies hold that digital civic literacy is a comprehensive quality including information literacy, ethical literacy and participatory literacy. However, there are still some deficiencies in domestic research. On the one hand, the research on the cultivation path of digital civic literacy is relatively superficial, lacking in-depth analysis and practical verification, and the proposed strategies are not targeted and operable. On the other hand, the research on curriculum innovation of digital civic literacy is not sufficient, and there is a lack of in-depth exploration on the design of curriculum content, the optimization of teaching mode and the improvement of evaluation system. The connection between curriculum innovation and the actual needs of citizens' digital literacy cultivation is not close enough, which makes it difficult to give full play to the role of curriculum in cultivating citizens' digital civic literacy.

### 1.3 Research Ideas and Methods

This study takes the cultivation of civic literacy and curriculum innovation in the digital age as the research object, and adopts a combination of multiple research methods to ensure the scientificity and comprehensiveness of the research. The literature review method is used to systematically sort out the relevant literature at home and abroad on digital civic literacy and curriculum innovation, clarify the research status, existing problems and research trends, and lay a theoretical foundation for the research. The comparative analysis method is used to compare the research results and practice experience of digital civic literacy cultivation and curriculum innovation in different countries and regions, analyze their advantages and disadvantages, and provide reference for the innovation of digital civic literacy curriculum in China. The case study method is used to select typical cases of digital civic literacy curriculum construction and teaching practice in some schools and social institutions, conduct in-depth analysis of their

implementation process, effect and existing problems, and summarize practical experience and enlightenment. Through the comprehensive use of these research methods, this study systematically explores the connotation and core elements of digital civic literacy, analyzes the current situation and problems of civic literacy cultivation and curriculum construction, and puts forward targeted curriculum innovation paths.

### 1.4 Research Innovations and Framework

The research innovation of this study is mainly reflected in two aspects. On the one hand, in terms of research perspective, it breaks through the limitations of previous single research on digital literacy or civic literacy, and combines digital technology with civic literacy cultivation, focusing on the integrated research of digital civic literacy cultivation and curriculum innovation, which enriches the research content of digital civic literacy. On the other hand, in terms of research content, it focuses on the actual needs of China's digital society development and citizens' digital literacy improvement, and puts forward targeted and operable curriculum innovation strategies, which have strong practical guiding significance. The research framework of this study is divided into five parts. The first part is the introduction, which expounds the research background and significance, research status at home and abroad, research ideas and methods, and research innovations and framework. The second part combs the core connotation and theoretical basis of digital civic literacy, defines the concept of digital civic literacy, analyzes its core components, and sorts out the theoretical support for its cultivation. The third part analyzes the current situation and problems of digital civic literacy cultivation and curriculum construction, including the current situation of civic literacy cultivation, the deficiencies of the existing curriculum system and the prominent problems in curriculum implementation. The fourth part puts forward the curriculum innovation path of digital civic literacy cultivation, including the innovative design of curriculum objectives and content, the optimization and upgrading of teaching modes and methods, the improvement and innovation of curriculum evaluation system, and the integration and development of curriculum resources. The fifth part is the conclusion, which summarizes the main research results, points out the limitations of the research

and looks forward to the future research direction.

## **2. Core Connotation and Theoretical Basis of Civic Literacy in the Digital Age**

### **2.1 Definition of Civic Literacy in the Digital Age**

Digital civic literacy is a comprehensive quality formed by citizens in the process of adapting to the digital society, which is based on traditional civic literacy and combines digital technology and digital thinking. It is not a simple superposition of digital literacy and civic literacy, but an organic integration of the two, reflecting the new requirements of the digital age for citizens' quality. Digital civic literacy refers to the comprehensive ability and quality that citizens need to possess to correctly use digital technology, participate in digital social activities, abide by digital ethics and norms, and safeguard their own and others' legitimate rights and interests in the digital environment. It includes not only the ability to use digital tools and process digital information, but also the awareness of digital ethics, the ability of digital participation and the sense of digital responsibility. Different from traditional civic literacy, digital civic literacy emphasizes the adaptability and ability of citizens in the digital environment, and its core is to enable citizens to use digital technology rationally and effectively, and realize the organic combination of personal development and social progress in the digital age. The definition of digital civic literacy needs to combine the characteristics of digital technology development and the actual needs of social development, and it is a dynamic concept that constantly develops and improves with the progress of digital technology and the changes of social needs.

### **2.2 Core Components of Civic Literacy in the Digital Age**

Digital civic literacy is a multi-dimensional comprehensive quality, which is composed of multiple interrelated and mutually restrictive elements. Information literacy is the foundation of digital civic literacy, referring to the ability of citizens to collect, sort out, analyze, evaluate and use digital information. In the digital age, a large amount of information is spread through the network, and citizens need to have the ability to identify the authenticity, accuracy and authority

of information, so as to avoid being misled by false information. Information literacy also includes the ability to use digital tools to obtain and process information, such as using search engines to find information, using office software to process data, and using social media to spread information. Ethical literacy is the key to digital civic literacy, referring to the awareness and quality of citizens to abide by digital ethics and norms in digital activities. It includes respecting the privacy of others, not spreading false information and harmful content, not infringing on the intellectual property rights of others, and resisting network violence and other uncivilized behaviors. Ethical literacy is related to the healthy development of the digital society and the maintenance of social public order. Participatory literacy is the extension of digital civic literacy, referring to the ability and awareness of citizens to participate in digital social affairs through digital technology. It includes participating in public opinion discussion through network platforms, putting forward suggestions and opinions on social issues, and participating in public welfare activities and social governance through digital channels. Participatory literacy helps to improve citizens' sense of social responsibility and participation, and promote the democratization and modernization of social governance.

### **2.3 Theoretical Support for the Cultivation of Civic Literacy in the Digital Age**

The cultivation of digital civic literacy is based on multiple theories, which provide theoretical guidance for the research and practice of digital civic literacy cultivation. The theory of lifelong learning holds that learning is a lifelong process, and citizens need to continuously learn and update their knowledge and skills to adapt to the changes of society and technology. In the digital age, the update speed of digital technology is very fast, and citizens need to establish the concept of lifelong learning, continuously improve their digital literacy and civic literacy, so as to adapt to the needs of digital social development. The theory of constructivism learning holds that learning is an active construction process of learners, and learners obtain knowledge and skills through their own practice and exploration. The cultivation of digital civic literacy should adhere to the concept of constructivism, guide citizens to actively participate in digital activities, and obtain digital

literacy and civic literacy through practice and exploration. The theory of civic education points out that civic education is an important way to cultivate citizens' civic awareness and civic ability, and its goal is to cultivate qualified citizens who abide by laws and regulations, have a sense of social responsibility and participate in social governance. The cultivation of digital civic literacy is an important part of civic education in the digital age, which needs to inherit and develop the concept of traditional civic education, and combine digital technology to innovate the content and form of civic education. The theory of digital education provides a theoretical basis for the curriculum innovation of digital civic literacy, emphasizing the integration of digital technology and education and teaching, and promoting the informatization and digitalization of education.

### **3. Current Situation and Problems of Civic Literacy Cultivation and Curriculum Construction in the Digital Age**

#### **3.1 Current Situation of Civic Literacy Cultivation in the Digital Age**

With the continuous development of digital technology and the increasing attention of the whole society to digital civic literacy, the cultivation of citizens' digital civic literacy has made certain progress. The government has issued a series of policies and measures to promote the popularization of digital technology and the improvement of citizens' digital literacy, such as carrying out digital skills training for citizens, building digital public service platforms, and strengthening the supervision of network information. Schools at all levels have gradually integrated digital literacy training into the education and teaching system, set up related courses and activities, and laid a foundation for the cultivation of students' digital civic literacy. Social institutions have also actively participated in the cultivation of digital civic literacy, carrying out various forms of digital literacy training and publicity activities to improve citizens' digital adaptation ability. However, there are still some problems in the current cultivation of digital civic literacy. The overall level of citizens' digital civic literacy is uneven, and there are obvious differences between different age groups, educational levels and regions. The digital literacy level of young and middle-aged citizens with higher educational

levels is relatively high, while the digital literacy level of the elderly and citizens with lower educational levels is relatively low. The attention paid to digital civic literacy cultivation is not balanced. Some regions and institutions pay more attention to the training of digital skills, but ignore the cultivation of digital ethics and participatory literacy, leading to the one-sided development of citizens' digital civic literacy. The form of digital civic literacy cultivation is relatively single, mostly in the form of centralized training and publicity and education, lacking targeted and personalized training methods, which is difficult to meet the different needs of different citizens.

#### **3.2 Deficiencies of the Existing Curriculum System in Civic Literacy Cultivation**

The existing curriculum system has obvious deficiencies in the cultivation of digital civic literacy, which is difficult to meet the needs of citizens' digital literacy improvement and social development. The curriculum objectives are not clear enough, and most courses only focus on the training of digital skills, ignoring the cultivation of digital ethics, participatory literacy and other aspects, resulting in the one-sidedness of curriculum objectives. The curriculum content is outdated and single, and the connection with the actual needs of digital social development is not close enough. Most courses still focus on the basic operation of digital tools, lacking in-depth content such as digital information identification, digital ethics norms and digital participation skills. The curriculum content does not keep up with the development pace of digital technology, and it is difficult to help citizens adapt to the changing digital environment. The curriculum structure is unreasonable, and there is a lack of systematic and hierarchical curriculum design. The courses at different levels and stages are not closely connected, and there is a phenomenon of repetition or omission of curriculum content, which affects the effect of curriculum teaching. The integration of curriculum and digital technology is not in place, and most courses still adopt the traditional teaching mode, failing to give full play to the role of digital technology in curriculum teaching, and the interactivity and pertinence of teaching are not strong.

#### **3.3 Prominent Problems in Curriculum Implementation**

Even if there are relevant curriculum settings,

there are still many prominent problems in the process of curriculum implementation, which affect the effect of digital civic literacy cultivation. The teaching mode is backward, most teachers still adopt the "teacher-centered" teaching mode, focusing on theoretical explanation and skill demonstration, ignoring the active participation and practice of students. Students can only passively accept knowledge and skills, and it is difficult to apply what they have learned to practical digital activities. The quality of teachers is uneven, and some teachers lack sufficient digital literacy and teaching ability, unable to effectively carry out digital civic literacy curriculum teaching. They are not familiar with the latest digital technology and digital ethics norms, and it is difficult to guide students to correctly use digital technology and abide by digital ethics. The teaching resources are insufficient, and there is a lack of high-quality digital teaching resources such as digital courseware, online courses and practice platforms. The existing teaching resources are mostly simple and rough, and the pertinence and effectiveness are not strong, which is difficult to meet the needs of curriculum teaching. The supervision and evaluation mechanism of curriculum implementation is not perfect, and there is a lack of effective supervision and evaluation of the teaching process and teaching effect. The evaluation of curriculum teaching is mostly based on the results of written tests, ignoring the evaluation of students' practical ability and comprehensive quality, which is difficult to reflect the actual effect of digital civic literacy cultivation.

#### **4. Curriculum Innovation Path for Civic Literacy Cultivation in the Digital Age**

##### **4.1 Innovative Design of Curriculum Objectives and Content**

The innovative design of curriculum objectives should adhere to the principle of comprehensiveness and pertinence, and clarify the specific objectives of digital civic literacy cultivation from the aspects of information literacy, ethical literacy and participatory literacy. The curriculum objectives should be closely combined with the actual needs of citizens' digital life and social development, and formulate hierarchical and differentiated curriculum objectives according to the differences of different groups of citizens. For

example, for young citizens, the curriculum objectives should focus on improving their digital innovation ability and digital participation ability; for the elderly, the curriculum objectives should focus on improving their basic digital operation skills and information identification ability. The innovative design of curriculum content should focus on timeliness, practicality and comprehensiveness. Update the curriculum content in a timely manner, add the latest digital technology knowledge, digital ethics norms and digital participation skills, and eliminate the outdated and useless content. Strengthen the connection between curriculum content and practical life, select typical cases in digital social life, integrate them into the curriculum content, and help citizens apply the knowledge and skills they have learned to practical activities. Enrich the curriculum content, not only pay attention to the training of digital skills, but also strengthen the cultivation of digital ethics and participatory literacy, and realize the all-round development of citizens' digital civic literacy. At the same time, the curriculum content should be designed hierarchically according to the cognitive level and learning needs of different citizens, so as to meet the learning needs of different groups.

##### **4.2 Optimization and Upgrading of Teaching Modes and Methods**

The optimization and upgrading of teaching modes should break through the limitations of the traditional teaching mode and establish a "student-centered" teaching mode. Pay attention to the active participation and practice of students, guide students to carry out independent learning, cooperative learning and inquiry learning, and improve their learning initiative and creativity. Integrate digital technology into the whole process of teaching, use online teaching platforms, virtual simulation technology, intelligent teaching tools and other means to enrich the forms of teaching, improve the interactivity and pertinence of teaching. For example, use virtual simulation technology to simulate digital social scenes, let students experience digital activities in a virtual environment, and improve their digital adaptation ability and practical ability. The innovation of teaching methods should focus on practicality and diversity, adopt a variety of teaching methods such as case teaching method, project-based teaching method and situational teaching method, and make the teaching process

more vivid and interesting. Case teaching method can select typical cases of digital civic literacy in real life, guide students to analyze and discuss, and help students understand and master the relevant knowledge and skills. Project-based teaching method can set up practical projects related to digital civic literacy, let students complete the projects independently or in groups, and improve their practical ability and cooperative ability. Situational teaching method can create real digital social situations, let students participate in them, and enhance their sense of experience and identity.

#### **4.3 Improvement and Innovation of Curriculum Evaluation System**

The improvement and innovation of the curriculum evaluation system should adhere to the principle of comprehensiveness, process and development, and establish a multi-dimensional and multi-angle curriculum evaluation system. Change the single evaluation mode based on written test results, and integrate process evaluation and result evaluation, quantitative evaluation and qualitative evaluation. Process evaluation should focus on the performance of students in the learning process, including learning attitude, participation, practical ability and progress, and record and evaluate the learning process of students in a timely manner. Result evaluation should focus on the improvement of students' digital civic literacy, including the mastery of digital skills, the awareness of digital ethics and the ability of digital participation. Quantitative evaluation can adopt the form of tests, questionnaires and other forms to quantify the learning effect of students; qualitative evaluation can adopt the form of interviews, observations and self-evaluations to comprehensively evaluate the comprehensive quality of students. Strengthen the participation of multiple subjects in evaluation, and let teachers, students, parents and social institutions participate in the curriculum evaluation, so as to make the evaluation results more objective and fair. Establish a feedback mechanism for evaluation results, timely feed back the evaluation results to students and teachers, help students find their own deficiencies and improve their learning methods, and help teachers adjust the curriculum content and teaching methods to improve the effect of curriculum teaching.

#### **4.4 Integration and Development of**

#### **Curriculum Resources**

The integration and development of curriculum resources should adhere to the principle of diversification and sharing, and fully tap and integrate various curriculum resources to provide support for the cultivation of digital civic literacy. Integrate school resources, social resources and family resources, form a joint force for curriculum resource construction, and realize the sharing and complementary of resources. Schools should strengthen the construction of digital teaching resources, develop high-quality digital courseware, online courses, practice platforms and other resources, and improve the level of curriculum teaching. Social institutions should actively participate in the construction of curriculum resources, provide practical teaching bases, professional teachers and technical support for digital civic literacy education, and enrich the forms of curriculum resources. Families should cooperate with schools and social institutions to create a good digital learning environment for citizens, guide citizens to use digital technology rationally, and cultivate their digital literacy and civic literacy. Strengthen the construction of digital resource platforms, integrate various curriculum resources into a unified digital resource platform, and facilitate citizens to obtain and use resources. At the same time, pay attention to the updating and maintenance of curriculum resources, keep up with the development pace of digital technology and social needs, and ensure the timeliness and effectiveness of curriculum resources.

#### **5. Conclusion**

Digital civic literacy is an essential quality for citizens to adapt to the digital age, and curriculum innovation is an important way to cultivate citizens' digital civic literacy. This study systematically explores the core connotation and theoretical basis of digital civic literacy, analyzes the current situation and problems of digital civic literacy cultivation and curriculum construction, and puts forward the curriculum innovation path of digital civic literacy cultivation from the aspects of curriculum objectives and content, teaching modes and methods, curriculum evaluation system, and curriculum resources. The research finds that digital civic literacy is composed of information literacy, ethical literacy and participatory literacy, and the existing digital

civic literacy cultivation and curriculum construction have problems such as uneven development level, unclear curriculum objectives, outdated curriculum content, backward teaching mode and imperfect evaluation system. The innovative design of curriculum objectives and content, the optimization and upgrading of teaching modes and methods, the improvement and innovation of curriculum evaluation system, and the integration and development of curriculum resources can effectively solve these problems, promote the improvement of citizens' digital civic literacy, and provide support for the construction of a digital society. This study also has some limitations. The research scope is relatively broad, and the in-depth analysis of specific groups and specific regions is not enough. The practical verification of the proposed curriculum innovation path is not sufficient. In the future research, we will further narrow the research scope, carry out in-depth research on specific groups and specific regions, and conduct practical verification of the curriculum innovation path to improve the scientificity and operability of the research results. At the same time, we will pay attention to the latest development of digital technology and the new needs of digital civic literacy, and continuously enrich and improve the research content and research methods.

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