Research on the Construction of University Education Informationization Leadership in WEB3.0 Era

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Abstract. The leadership of educational informatization in the informatization scene needs to adapt to the new technological changes and provide strong support for educational organizations to maintain their competitive advantage and development. This means that in order to form effective educational information leadership, the leadership behavior in educational organizations needs to be deeply integrated with the tools of the information age. In the era of WEB3.0, the construction of educational informatization leadership in colleges and universities needs to start from many aspects, and constantly strengthen their own information technology application ability, management coordination ability and planning decision-making ability.

Keywords: WEB3.0; Education informationization; Leadership

1. Introduction

With the development of the new generation of Internet technology, the education system will face great development opportunities in scientific and technological innovation and talent cultivation. In practice, whether it is the construction or application of educational informatization, its process will be restricted by the leader's informatization leadership level, which will ultimately affect the survival state of the whole educational organization in the information society. The existing literature defines the connotation of educational informatization leadership mainly based on the dimension of "ability" or "process", and accordingly constructs the evaluation system of educational informatization leadership. Based on the key attribute of the concept of leadership-influence, this study re-examines the connotation, essence and evaluation dimension of educational informatization leadership in the WEB3.0 era, so as to enrich and improve the existing research results [1].

2. The background of the 2.WEB3.0 era

In the era of Web3.0, the Internet can effectively collect, sort out and recommend available online learning resources for different groups by using the intelligent computing of semantic web. At present, semantic algorithms have played an important role in many fields, such as Google adjusting search results according to users' location, and many large domestic e-commerce companies personalized push different users according to online consumption behavior. The education system still stays in the era of Web2.0 and even Web1.0. Most teaching systems and resource platforms do not actively provide personalized recommendation function modules, and learners face the same application interface; the teaching management system has not provided personalized data matching function, and the phenomenon of repeated information reporting still exists, which is contrary to the development concept and trend of the Internet in the era of Web3.0. These problems urge educational researchers to think deeply about the main strategies of Web3.0 to empower high-quality personalized education.

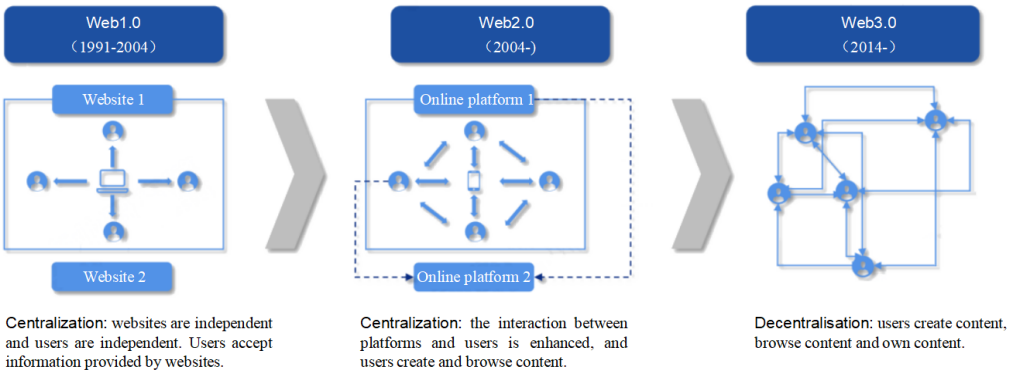


Figure 1. Development of 1:Web 1.0-3.0 [2].

First of all, in the era of Web3.0, semantic algorithm has become an important means to fully tap the recent development area of online learners. At present, the main challenge faced by online learners is that they can't find the most matching digital learning resources efficiently. Therefore, we should take care of students' previous knowledge and ability and accurately locate their recent development areas in the initial stage. Second, we should anchor students' back-end academic and career development needs and adjust the nearest development zone according to the logical framework of students' needs [3].

Secondly, Web3.0 places special emphasis on users' emotional computation. In the era of Web1.0 and 2.0, machines can only learn programs, without fully considering users' emotions and emotions in online learning (Bhattacharya & Pal, 2020). In addition to text, the machine should also fully tap the physiological parameters such as body posture, micro-expression and voiceprint, and carry out multimodal collaborative analysis. At present, virtual digital human technology combines the two advantages of semantic algorithm and computer vision, which can pay attention to more emotional interaction and communication while outputting knowledge. In this context, virtual digital teachers have important application value to the development of online learners' empathy ability [4].

Thirdly, fully disclose the rules of intelligent algorithm, so that teachers and students have the right to choose algorithms. The important feature of Web3.0 technology is the built-in algorithm for developing, sharing and configuring applications based on programming interface, and analyzing and interpreting data. In the Web2.0 network environment, learners can only passively receive algorithm recommendations, but they are not clear about algorithm logic and rules. In the era of Web3.0, the programming interface is more open, the algorithm is more open and transparent, and it can provide rich algorithm modules for teachers and students to choose from. For example, Google is improving the Web3.0 network application for educational environment.

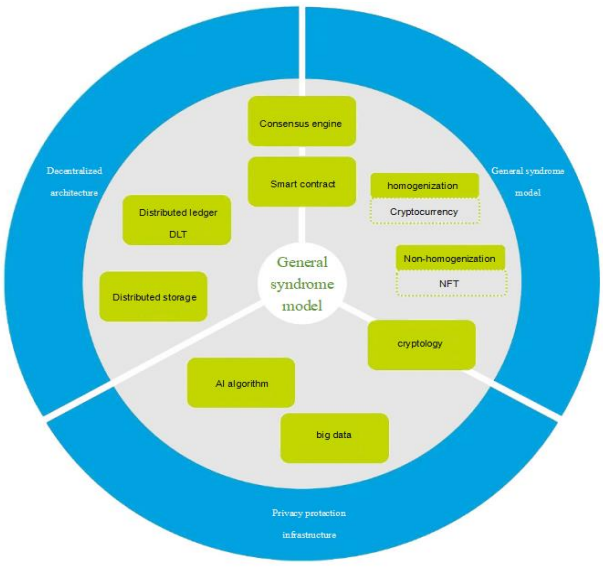


Figure 2. Three key elements of Web3.0 operation [5].

Finally, using crowdsourcing technology, learners can label data unconsciously in the process of online learning and realize self-service. The difficulty in the development of "Internet+Education" is the lack of large-scale and reliable labeling data. Some large artificial intelligence companies, such as Google, use crowdsourcing technology to allow users to annotate images in modules such as login verification, which has precipitated a large number of reliable annotation data for their research on autonomous driving technology. The researchers also found that teachers and students lost too many opportunities to participate in information tagging in online learning, which led to the lack of data sources in the semantic computing stage. Making full use of crowdsourcing technology, allowing large-scale online learners to label in the learning process and providing self-service for future algorithm simulation is a direction worth exploring.

3. Connotation and structure of leadership in educational informatization

In the report "Top Ten IT Issues in 2023" published by EDUCAUSE in 2023 [6], the first item is "having a place in the meeting" to ensure that the IT leadership is a comprehensive partner in the school's strategic planning. The research points out that information technology leaders should be involved in the strategic planning and decision-making of the school, because they know both the school and the technology and data. In today's information age, educational informatization has become an important trend of educational development. As an educational leader, you need to have various abilities to promote the smooth development of educational informatization. Among them, educational informatization leadership is the most critical ability. The following will discuss the connotation and structure of educational informatization leadership from the aspects of information technology application ability, information teaching innovation ability, information management coordination ability, information planning decision-making ability and information learning guidance ability.

3.1. Information technology application ability

The foundation of educational informatization leadership is the application ability of information technology. As an education leader, you need to know and master the basic knowledge and skills of information technology, including computer operation, network technology, and multimedia technology and so on. In addition, it is necessary to understand the development trend and application prospect of information technology in order to better guide the construction of educational informatization [7].

3.2. Information teaching innovation ability

The innovative ability of informatization teaching is the core of educational informatization leadership. As an educational leader, we need to pay attention to the latest trends and trends of information-based teaching, and actively promote and apply new teaching techniques and methods to improve teaching quality and effect. At the same time, it is necessary to encourage and support teachers to carry out information-based teaching innovation and promote the deep integration of education and teaching with information technology.

3.3. Information management coordination ability

The leadership of educational informatization also includes the coordination ability of informatization management. As an educational leader, he needs to have the ability of management and coordination, and can effectively organize and coordinate the work of various departments and units to ensure the smooth progress of educational informatization. At the same time, we need to pay attention to the latest trends and trends of information management, and constantly improve and optimize the system and mechanism of information management [8].

3.4. Information planning decision-making ability

Decision-making ability of informatization planning is the key to educational informatization leadership. As an education leader, we need to have a strategic vision and overall awareness, and formulate the development plan and implementation plan of educational informatization in line with the actual situation of our region and school according to the national education policy and plan. At the same time, it is necessary to have decision-making ability and risk awareness, make scientific and reasonable decisions according to the actual situation, and ensure the smooth implementation of educational informatization [9].

3.5. Information learning guidance ability

The guiding ability of information learning is an important part of educational information leadership. As an educational leader, we need to pay attention to the latest trends and trends of information-based learning, understand and master the basic knowledge and skills of information-based learning, and can effectively guide and support students in information-based learning. At the same time, it is necessary to actively promote and apply new learning techniques and methods, encourage students to carry out independent inquiry learning and cooperative learning, and improve students' learning effect and learning literacy.

4. The construction strategy of university education informatization leadership in the 4.WEB3.0 era.

4.1. Cultivate information awareness

University leaders should actively understand and master the trend and frontier information of informatization development, establish informatization consciousness and incorporate informatization development into the overall planning of school development. At the same time, it is necessary to guide the teachers and students of the whole school to establish the concept of informatization, improve their information literacy, meet the needs of education and teaching in the information age, strengthen the investment in informatization construction in colleges and universities, and fully support the construction of educational informatization leadership in colleges and universities. The data shows that the average funding for network security and informatization in colleges and universities in 2021 is 11.694 million yuan, an increase of 10.8% compared with the previous year. In 2021, the proportion of informatization funds to the total school funds is 3.5%, a decrease of 1 percentage point compared with the previous year. Therefore, it is necessary to increase the proportion of informatization construction in the total university funds and enhance the awareness of informatization.

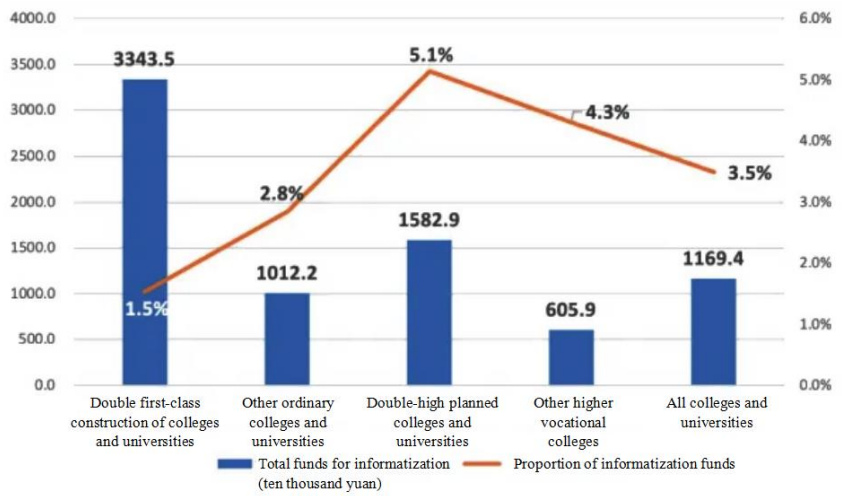


Figure 3. The amount and proportion of university informatization funds in China in 2021 [10].

4.2. Enhance the application ability of information technology

University leaders should have basic information technology application ability, such as computer operation, network technology and multimedia technology. At the same time, we should pay attention to the development of information technology and constantly learn and master new information technology in order to better guide the construction of educational informatization in schools. On the basis of improving the application ability of information technology, we should also strengthen the coordination of information management, effectively organize and coordinate the work of various departments and units, and ensure the smooth progress of educational informatization. At the same time, we should pay attention to the latest trends and trends of information management, constantly improve and optimize the system and mechanism of information management, and improve management efficiency and level. The data shows that the construction of computer rooms and networks in colleges and universities in 2021 has increased significantly compared with the previous year, and the number of systems and websites is also increasing, which makes the construction of systems supporting teaching stronger.

4.3. Promote information-based teaching innovation

In the information age, university leaders should actively promote the innovation of information-based teaching, encourage teachers to apply new teaching techniques and methods, and improve teaching quality and effect. We can organize training, seminars, teaching competitions and other forms to promote exchanges and cooperation between teachers and promote the deep integration of education, teaching and information technology. At the same time, we should also pay attention to the cultivation of teachers' comprehensive literacy, and pay more attention to the cultivation of teachers' comprehensive literacy on the basis of teachers' professional growth. Constantly enrich and improve the path and platform for teachers' growth, strengthen the construction of learning organizations, and constantly promote teachers' learning, especially mutual learning among teachers.

4.4. Strengthen the decision-making ability of information planning

On the one hand, university leaders should pay attention to the latest trends and trends of information-based learning, understand and master the basic knowledge and skills of information-based learning, and can effectively guide and support students in information-based learning. Students can be guided to master the learning methods and skills of informatization by offering relevant courses, holding lectures and organizing practical activities. On the other hand, the leaders of colleges and universities should have strategic vision and overall awareness, and formulate the development plan and implementation plan of educational informatization in line with the actual situation of the school according to the national education policy and planning. At the same time, we should have decision-making ability and risk awareness, make scientific and reasonable decisions according to the actual situation, and ensure the smooth implementation of educational informatization. Finally, it is necessary to promote data-driven decision-making. In the era of WEB3.0, data has become an important basis for decision-making. University leaders should attach importance to the role of data in decision-making, establish a perfect mechanism for data collection, analysis and reporting, and formulate the development plan and implementation plan of educational informatization based on data.

4.5. Create a good campus cultural atmosphere

Campus culture has an important influence on the development of colleges and universities. University leaders should pay attention to creating a good campus cultural atmosphere, including respecting knowledge, encouraging innovation and pursuing truth. In such a cultural atmosphere, both teachers and students can actively participate in the construction of educational informatization and jointly promote the development of the school. After having a good campus cultural atmosphere, we should strengthen exchanges and cooperation with the outside world to understand the latest development trend of educational informatization and the application of technology. We can broaden

our horizons, absorb advanced experience and technology, and promote the information development of our school by attending meetings, seminars, inspection and other forms.

5. Conclusion

To sum up, educational information leadership is one of the important abilities that educational leaders must have. As an educational leader, you need to have many abilities, including the ability of information technology application, the ability of information teaching innovation, the ability of information management coordination, the ability of information planning and decision-making, and the ability of information learning guidance. Only with these abilities can we effectively promote the construction and development of education informatization.

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