

A survey of AI-enabled one-stop student community construction in vocational colleges

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Abstract. In the new era, vocational college has been an important component of the education system in China, responsible for the mission of cultivating high-quality technical talents. The construction of one-stop student communities has become an important way to promote the modernization of vocational education governance. With the deepening of education reform, vocational colleges are facing new challenges in the construction of student communities. The contradiction between the expansion of the scale of vocational college students and the diversification of demand is prominent, and the traditional management model has shortcomings such as scattered resources and insufficient collaboration. How to explore a one-stop student community construction path that is in line with the characteristics of vocational colleges has become an urgent issue to be solved. Nowadays, the development of artificial intelligence (AI) technology is flourishing, and deeply changing the face of higher education. The rapid development of AI technology provides strong support for the construction of student communities in vocational colleges. AI intelligent tools, big data information collection and other technologies, can effectively help colleges continuously optimize their management models, greatly improve service efficiency and quality, and enhance student satisfaction. Hence, based on the AI technology, building an equal, inclusive, and interactive student community network, responding to students' needs for digital learning resources, platform tools, service support, and improving the accuracy and satisfaction of education management, are of great significance for the vocational education reform in China. This article overviews pervious achievements of AI-enabled student community construction in colleges, to provide actionable solutions for the paradigm shift of the student service system in vocational colleges at the practical level.

Keywords: Artificial intelligence (AI), student community, education reform, student service and management.

1. Introduction

As an important component of the education system in China, vocational college is responsible for the mission of cultivating high-quality technical talents. To promote the modernization of vocational education governance, the construction of student communities in Chinese vocational colleges is of great significance.

In recent years, with the acceleration of the popularization of higher education, the continuously increasing number of students in vocational colleges and the increasingly prominent diversified characteristics of student groups have posed new challenges to the management of vocational college students. Traditional student education and teaching management often focuses on administrative management, neglecting the personalized and diversified needs of students. Therefore, building a student-centered and fully functional one-stop student community has become an important way for vocational colleges to enhance management efficiency and promote students' comprehensive development [2].

Specifically, the educational management innovation of one-stop student communities in vocational colleges in the era of artificial intelligence is rooted in two important backgrounds: firstly, one-stop student communities have become the closest educational space to students' daily lives in vocational colleges; secondly, the era of artificial intelligence has brought new challenges and opportunities to the educational function of this space. On the one hand, one-stop student communities have become the closest space to students' daily lives in vocational colleges, and how to fully utilize the role of this space has become an unavoidable and important issue. With the deepening of reforms in vocational colleges such as general enrollment and credit system, student communities have become the most frequent and stable place for student communication and interaction, and an important educational battlefield outside the classroom. So, how to leverage and effectively utilize the advantages of one-stop student communities in vocational colleges, and promote student management work to truly be done on a daily and individual basis, has indeed become an important issue that vocational colleges cannot avoid. On the other hand, the era of artificial intelligence has arrived, which brings new challenges and opportunities for how to fully leverage the educational role of one-stop student communities in vocational colleges. In the context of the era of artificial

intelligence, cutting-edge technologies such as digital technology, network technology, and intelligent technology have become important forces for social change and are profoundly changing the development situation of one-stop student community education in vocational colleges. The digital technology has achieved seamless integration between humans and the virtual world, enabling students to form a two-dimensional survival norm of digital virtual survival and physical reality survival. This poses a new challenge to the education of one-stop student communities, requiring the active expansion of online education space and the realization of online and offline collaborative education. At the same time, the rapid development of artificial intelligence technology enables the combination of “data+computing power+algorithms” to help humans analyze and understand data more efficiently, as well as make scientific predictions based on it. This provides an opportunity for achieving precise education in a one-stop student community. Therefore, how to cope with the new challenges brought by the era of artificial intelligence, seize new opportunities, and fully play the role of one-stop student community education management has become another important issue that vocational colleges need to explore.

The construction of a one-stop student community not only helps optimize the management structure of vocational colleges and improve management efficiency, but also provides more convenient and efficient services for students. More importantly, by building and improving a one-stop student community, vocational colleges can create a comprehensive education platform that integrates education, value guidance, cultural shaping, academic support, practical innovation, and life services, providing strong support for students’ comprehensive development, helping to integrate resources, optimize services, improve education quality, and student satisfaction. Hence, studying how to innovate the education of one-stop student communities in vocational colleges in the era of artificial intelligence, seize the new opportunities brought by this era, adapt to the new trends of change, promote high-quality development, and ultimately implement the fundamental task of cultivating morality and talents, has the following research significance.

Firstly, it is conducive to expanding the theoretical research perspective of one-stop student community education in vocational colleges. Currently, relevant research mostly focuses on the education model itself, and rarely explores its integration with the perspective of the artificial intelligence era. Therefore, studying the one-stop student community education in vocational colleges in the context of the era of artificial intelligence and integrating the elements of the artificial intelligence era is conducive to expanding the research perspective of this education model and enriching its research horizon.

Secondly, it is conducive to enriching the theoretical research results of empowering higher education with artificial intelligence. The one-stop student community education work in vocational colleges is the concretization of higher education in this place. In the context of the era of artificial intelligence, an important aspect of promoting innovation in one-stop student community education in vocational colleges is to utilize artificial intelligence technology to empower and enhance the effectiveness of education. Therefore, the research on one-stop student community education in vocational colleges is also conducive to deepening and enriching the theoretical research results of empowering vocational college education with artificial intelligence.

Thirdly, it is conducive to optimizing the specific measures of one-stop student community education in vocational colleges under the background of artificial intelligence era. On the basis of analyzing the one-stop student community education in vocational colleges in the era of artificial intelligence, relevant innovative paths can be found from five aspects: (1) Strengthen organizational leadership and policy support; (2) Pay attention to resource integration and optimized configuration; (3) Strengthen the teaching staff and talent cultivation; (4) Improve the evaluation and feedback mechanism; and (5) Promote the cultural exchange, cooperation and sharing. Therefore, the research on one-stop student community education in vocational colleges is conducive to optimizing relevant specific measures and achieving high-quality development.

Fourthly, it is conducive to enhancing the effectiveness of higher education. Whether it can meet the needs of learners is an important factor affecting the effectiveness of education. The one-stop student community education work in vocational colleges requires various teams to settle among students in order to respond to their needs in a timely manner. Therefore, this educational practice is an important lever to enhance the effectiveness of higher education. In the era of artificial intelligence, cutting-edge technologies such as big data and deep learning have flourished. In depth exploration of how to cleverly integrate these cutting-edge technologies into one-stop student community education work can more accurately and efficiently connect with the real needs of students’ growth and development process, respond to their real concerns, and further leverage this education model as an important lever to enhance the effectiveness of higher education.

This article reviews and invents the development status of relevant research, comprehensively grasps the existing research progress and shortcomings, and accurately grasps the existing research foundation and development trends. At present, the research achievements in the academic community mainly focus on four aspects: the research of higher education in the context of the era of artificial intelligence, the research of one-stop student communities in vocational colleges, the research of one-stop student community education in vocational colleges, and the research on artificial intelligence and educational development.

2. Research Achievements

2.1. Higher Education in the Context of the Era of Artificial Intelligence

For the educational opportunities in the context of the era of artificial intelligence, Gong et al. believe that in the context of the era of artificial intelligence, numerous emerging cutting-edge technologies have broken the limitations of time and space, enabling students to engage in personalized learning based on their own needs [9]. In addition, these technologies can liberate teachers from traditional complex work, thereby enhancing the happiness of educators. Huang believes that in the context of the era of artificial intelligence, the development of artificial intelligence technology can bridge the temporal and spatial gaps, promote diverse interactions, assist in the scientific education supply, expand the narrative education style, and thus comprehensively enhance the educational effectiveness [10].

About the challenges faced by education in the context of the era of artificial intelligence, Cui points out the risks and challenges from the dimensions of conceptual cognition, educational space, and practical order [4]. In terms of conceptual cognition, he points out that “data worship” may ultimately lead to a negative situation where the value of data tools exceeds the value of education and nurturing. In the spatial dimension, he points out that long-term “virtual addiction” can easily lead learners to lose their true selves and distance themselves from the practical essence of education. In the dimension of practical order, he points out that the “identity inversion” between subject and object would weaken the authority of education, which could provide an opportunity for the spread of erroneous social ideologies. Fang points out that in the context of the era of artificial intelligence, education faces problems such as distorted scene information, emotional settings, and narrative entertainment [7]. These problems can lead to risks such as a lack of objectivity, guidance, and leadership in education.

For the development strategy of education in the context of the era of artificial intelligence, Fu believes that it is necessary to create an artificial intelligence resource system for vocational colleges to strengthen teachers’ media literacy [8]. In addition, it is necessary to establish a coordinated education mechanism based on artificial intelligence, build a caring dialogue between the subject and object, and promote the artificial intelligence selection, application, and evaluation of educational methods. Liu points out that in the era of artificial intelligence, education should focus on achieving innovative development in three aspects: comprehensive construction of digital courses at the teaching level, deep development of precise services at the service level, and efficient operation of collaborative management at the management level [15]. To achieve these developments, it is necessary to improve the infrastructure of data governance, enhance the data analysis capabilities of educators, and apply the “large language models+education” in practice.

2.2. One-Stop Student Communities in Vocational Colleges

For the concept of one-stop student communities in vocational colleges, the academic community generally emphasizes the function of meeting various needs of students in the community. For example, Zhang points out that a one-stop student community in vocational colleges refers to a place where students’ various needs and services encountered on the colleges are summarized outside the student classroom for shared living and learning [21]. Its purpose is to provide students with more centralized, convenient, and unified services. Zhou et al. point out that a one-stop student community gathers elements such as space, team, resources, and systems in vocational colleges, which is a new platform for education, a new environment for student growth, and a new mechanism for management services [23].

About the value of one-stop student community construction in vocational colleges, Li et al. point out that one-stop student communities in vocational colleges are an inherent requirement for vocational colleges to fulfill their educational responsibilities and an effective expansion of their educational channels [12]. Zhou et al. not only emphasize the important significance of one-stop student communities in vocational colleges in implementing educational responsibilities and expanding educational pathways, but also point out that they provide a composite field for students’ growth, are conducive to strengthening educational guidance and promoting the innovation and optimization of management services [23]. Yan et al. believe that the one-stop student community in vocational colleges is a powerful tool for implementing frontline rules, a highland for building a safe campus, and an innovative field for cultivating new talents in the era [19].

For the construction path of one-stop student communities in vocational colleges, Wang points out that the construction of a one-stop student community in a vocational college should focus on five keys: the strategic thinking to drive the multi-directional expansion of functions, the systematic thinking to drive the innovation of education mechanism, the co-governance thinking to drive the coordination of multiple subjects, the platform thinking to drive the matching of supply and demand of services, and the Internet thinking to drive the improvement of governance efficiency [18]. Wang points out that the construction of one-stop student communities in vocational colleges needs to strengthen the publicity, deepen the consensus of various work teams, innovate the institutional

and mechanism construction, build a sinking mechanism for educational strength and resources, optimize the spatial design and transformation, and strengthen the digital empowerment [17].

2.3. One-Stop Student Community Education in Vocational Colleges

For the value of conducting educational work in one-stop student communities in vocational colleges, Liu believes that conducting education in one-stop student communities in vocational colleges is conducive to improving the level of vocational college education work, achieving full coverage of educational positions, and bridging the last mile of education [14]. Zhou et al. point out that the one-stop student community in vocational colleges has brought teachers and students closer in space, and conducting education within it is conducive to enhancing the affinity of education [22]. Bai et al. believe that providing education in a one-stop student community in vocational colleges is conducive to integrating education with students' daily lives, solving teaching problems with practical problems, and combining extensive coverage with classified guidance, thereby significantly improving the effectiveness of student education work [3].

About the problems and optimization paths of one-stop student community education in vocational colleges, Zhang believes that there are issues such as inadequate subject cognition, low recognition, mixed multiple education mechanisms, difficulty in forming a joint force in student community education, and unclear characteristics of student community education [20]. In response to these issues, he proposes to first enhance the recognition of teachers and students, and secondly clarify the responsibilities and rights of the student community education team, to form a professional and efficient management and collaboration system with the college as the main body and the counselor team as the core. Liu et al. point out that the utilization of big data analysis in the construction of one-stop student communities often remain at the local, phased, and technical levels, which has led to the inability of vocational colleges to achieve precise education in one-stop student communities [13]. To address this issue, it is possible to strengthen the integration of big data analysis platforms, and achieve the co-construction and sharing of big data in student communities, to obtain a complete portrait of students' educational needs. Fan et al. believe that the current one-stop student community education in vocational colleges faces problems such as how to achieve the unity of theoretical and vivid educational contents, how to achieve the linkage of diverse teams in the educational process, how to make educational methods more precise, and how to better play the role of students as the main body [6]. To address these issues, it is necessary to strengthen the aggregation of educational forces, leverage the important role of cultural education, and promote the development of artificial intelligence community through digital empowerment.

2.4. Artificial Intelligence and Educational Development

For addressing the challenges brought by artificial intelligence to education, Smith et al. discuss the privacy and security issues of individuals in the era of artificial intelligence, as well as the ethical issues arising from facial recognition technology [16]. They emphasize the need to strengthen data management and prevent information leakage when applying artificial intelligence to the education process. Islam et al. believe that the excessive use of ChatGPT in education may lead to an over reliance on this artificial intelligence model, thereby reducing individuals' critical thinking and innovative content production abilities [11].

About the development direction of education in the context of the era of artificial intelligence, Aoun advocates for experiential lifelong learning in the future. He advocates focusing on cultivating students' creative thinking, reading and writing abilities, cognitive abilities, critical thinking, systematic thinking, entrepreneurial spirit, and cultural agility in the era of artificial intelligence, and emphasizes experiential learning for students in different living environments [1]. David et al. advocate for the construction of K-12 artificial intelligence education, believing that today's children are growing up with the companionship of artificial intelligence, and they may have already had years of communication with intelligent technology when they enter kindergarten [5]. In this situation, it is necessary to integrate education related to artificial intelligence throughout the entire education process from kindergarten to high school (K-12), and encourage students to consider pursuing careers related to artificial intelligence as early as possible.

3. Conclusion and Suggestions

In summary, the academic community has conducted comprehensive discussions on the construction of one-stop student communities in vocational colleges in the era of artificial intelligence, including the interpretation of related concepts, important values, the faced opportunities and challenges, as well as the construction path and development strategies, and has formed rich research results. However, it should be seen that in the era of artificial

intelligence, the construction of one-stop student communities in vocational colleges is a long-term and complex system engineering and requires multi-faceted efforts and collaboration. Hence, vocational colleges should actively explore one-stop student community construction paths that are in line with their own characteristics, achieving integration, innovation, and sustainable development.

The article suggests that vocational colleges should strengthen organizational leadership, resource integration, and faculty building, improve evaluation and feedback mechanisms, and promote the cultural exchange, cooperation, and sharing. Thus, they can provide students with a more convenient, efficient, and comfortable learning and living environment, promoting their comprehensive development and quality improvement. The detailed suggestions are listed as follows.

– **Strengthen organizational leadership and policy support.**

Vocational colleges should strengthen organizational leadership and policy support for the construction of one-stop student communities. It is suggested to establish a dedicated work leadership group or committee responsible for overall planning and coordinating the promotion of community construction work; At the same time, relevant policies and measures should be formulated to provide strong policy guarantees for the construction and development of the community.

– **Pay attention to resource integration and optimized configuration.**

Vocational colleges should make full use of both on campus and off campus educational and service resources, and optimize the resource allocation. It is suggested to introduce high-quality educational resources and service projects by strengthening cooperation and communication with enterprises and social organizations; At the same time, attention should also be paid to the sharing and collaborative utilization of resources within the campus, to improve the efficiency and effectiveness of resource utilization.

– **Strengthen the teaching staff and talent cultivation.**

Vocational colleges should strengthen the construction and training of their teaching staff. By introducing high-level educational talents and strengthening teacher training, the overall quality and ability level of the teaching staff can be enhanced; At the same time, attention should also be paid to the cultivation and selection of student backbone and community workers, to provide strong talent support for the construction and development of the community.

– **Improve the evaluation and feedback mechanism.**

Vocational colleges should establish a sound evaluation and feedback mechanism. It is suggested to regularly evaluate and inspect the effectiveness of one-stop student community construction, to promptly identify and solve existing problems and deficiencies; At the same time, attention should also be paid to collecting students' opinions and suggestions, continuously improving and perfecting service content and methods, and enhancing students' satisfaction and sense of gain.

– **Promote the cultural exchange, cooperation and sharing.**

Vocational colleges should actively promote the cultural exchange, cooperation, and sharing. By strengthening communication and cooperation with other vocational colleges and social institutions, vocational colleges can share high-quality resources and achieve the win-win development; At the same time, they should also pay attention to international exchanges and cooperation, introduce advanced educational concepts and management experience from abroad, and provide new ideas and references for the construction and development of communities.

In the future, with the continuous development of information technology and the deepening of education reform, the construction of one-stop student communities in vocational colleges will face more opportunities and challenges. Vocational colleges should continue to adhere to the student-centered concept, constantly innovate service models and management mechanisms, strengthen connections and cooperation with all sectors of society, and jointly promote the sustainable development and progress of one-stop student community construction in vocational colleges.

4. Conflict of Interest

The authors declare that there are no conflict of interests, we do not have any possible conflicts of interest.

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Biography

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