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Research on the Construction of Ecological Teaching Mode for Tourism Majors in the Era of Smart Education

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Abstract: The advent of the smart education era has brought severe challenges to the development of education, and the application of various smart technologies has forced education to carry out in-depth self-reform. Against the background of smart education, the reform of the teaching mode for tourism majors is extremely urgent. Through literature analysis and in-depth investigation, this paper conducts an in-depth study on smart education and a comparative analysis of existing teaching modes for tourism majors. It deeply interprets the theoretical basis of the ecological teaching mode and discusses its internal compatibility with the smart education era. This paper concludes that the ecological teaching mode has great appropriateness in the smart education era. To construct an ecological teaching mode for tourism majors in the smart education era, we can take ecology, educational ecology and constructivism as the main theoretical basis; take promoting the all-round development of teachers and students and building a harmonious teacher-student relationship as teaching objectives; take humanistic literacy, interdisciplinary knowledge and real industry scenarios as teaching content; take smart education technology as the main teaching method; take open, multi-dimensional and interactive ecological space as the teaching environment; and take visual, diversified and process-based evaluation as the main assessment method. The proposal of this model provides certain enlightenment for the reform and development of tourism majors in the new era, and is also a response to the requirements of the smart education era.

Keywords: Teaching Mode; Ecological Type; Smart Education; Tourism Major; Teaching Reform

1. Introduction

Nowadays, intelligent technology is increasingly integrated into the field of education, bringing more possibilities for teaching. The application of intelligent technology makes education more personalized and intelligent, and helps teachers better understand each student's learning status and needs to achieve personalized teaching. Humanity has entered the era of smart education, which brings more possibilities and opportunities to education, and also requires educators to continuously adapt to and apply new technologies, and promote education to develop in a smarter and more innovative direction [1]. Smart education has become an inevitable trend of education reform, and the reform of the teaching mode for tourism majors is particularly urgent and necessary. First, the global tourism industry continues to boom, and the industry's demand for talents is growing. Tourism education under the traditional teaching mode is often difficult to meet the industry's escalating demand for talents, so a more flexible and innovative teaching mode is required to cultivate professional talents with practical ability and innovation ability. Second, the wide application of smart technology has changed people's learning habits and teaching methods. Students need more convenient and personalized learning methods, while the singleness and rigidity of the traditional teaching mode can no longer meet their needs. Therefore, the teaching mode for tourism majors must keep pace with the times, introduce smart education elements, and provide teaching methods that better adapt to students' needs.

The concept of ecological teaching mode emerged as early as the end of the 20th century, and its core idea is to break the closed teaching process and build a diverse ecosystem of harmonious coexistence [2]. The ecological teaching mode emphasizes that all learning resources should flow around learners, which is consistent with the "learner-centered" concept that smart education strives to build [3]. From the perspective of educational ecology, the ecological teaching mode itself has the

characteristics of self-organization, dynamic evolution and symbiotic evolution; therefore, smart education is the overall direction of the transformation of the education ecosystem [4].

2. Appropriateness of Ecological Teaching Mode in the Smart Education Era

2.1 Consistency of Educational Concepts

The concept of smart education emphasizes the use of advanced information technology, educational science theories and teaching methods to improve the quality of education and teaching and promote the development of students' comprehensive quality. In smart education, teachers and students can use digital tools for personalized learning, realize individuation and differentiation of teaching content, and make learning more efficient and convenient. The ecological teaching mode is a teaching mode that focuses on the relationship between human and environment, human and human, human and knowledge, and emphasizes the integrity, interaction and collaboration of teaching activities [5]. In the ecological teaching mode, a close interactive relationship is formed between teachers and students, through which students not only acquire knowledge, but also cultivate innovation ability, cooperative spirit and problem-solving ability.

2.2 Consistency of Teaching Objectives

Smart education emphasizes that education should develop students' scientific, technological, artistic and humanistic qualities in an all-round way, and pay attention to students' learning experience, so that they can feel happiness, growth and harvest in the learning process. The ecological teaching mode also emphasizes that education should cultivate students' abilities and qualities in all aspects in an all-round way, and advocates creating a learning environment with ecological characteristics to promote students' all-round development. The core value of smart education, which pursues students' good learning and development experience, is consistent with the teaching objective requirements of the ecological teaching mode. Both emphasize that students should obtain comprehensive growth and development in the learning process, not just the acquisition of knowledge and cultivation of skills.

2.3 Consistency of Teaching Space

Smart education advocates ubiquitous intelligent learning space, emphasizing that the time and location of learning are more flexible, so that students can access learning resources and study anytime and anywhere [6]. At the same time, the ecological teaching mode emphasizes creating a learning environment with ecological characteristics, and requires that the teaching space can provide rich and diverse resources and interactive opportunities to support students' independent learning and cooperative learning. Therefore, it can be said that the requirements for teaching space of the ubiquitous intelligent learning space in smart education and the ecological teaching mode are consistent, both emphasizing the diversity, flexibility and interactivity of the learning environment. This trend helps improve students' learning experience and learning effect.

2.4 Consistency of Teaching Evaluation

Both smart education and ecological teaching mode emphasize people-oriented education and promote the overall development of students through educational practice. Both attach importance to fairness, hold that educational resources should be rich and diverse, and advocate building a space for teaching and learning anytime and anywhere to ensure that every student has equal learning opportunities. Both emphasize integrity, advocate connecting education of all learning stages to promote the overall development of education. Both emphasize individualization, and believe that educational evaluation should respect the law of students' growth and be committed to providing personalized learning support for every student.

In conclusion, the combination of smart education and ecological teaching mode can better meet students' needs for individualization, interaction, innovation and cooperation, and promote the improvement of students' comprehensive quality and the improvement of education and teaching quality. This combination will bring broader development space to the field of education and promote education reform to a deeper stage.

3. Theoretical Basis of Ecological Teaching Mode for Tourism Majors

3.1 Constructivism

The earliest origin of constructivism can be traced back to Swiss scholar Jean Piaget.

Constructivist teaching theory originated from Lev Vygotsky's sociocultural theory, which holds that learning is the process that individuals acquire and construct knowledge through interaction with others. Although different schools have different ideas and methods on learning, they all emphasize that students learn through active participation, exploration and knowledge construction, and attach importance to the role of social interaction, individual experience and cultural diversity, which provides rich perspectives and methods for teaching [7].

Constructivist teaching theory provides direct theoretical support for the construction of ecological teaching mode. This theory focuses on cooperative learning and interactive teaching, that is, cooperative communication between teachers and students and among students. Its core concepts "autonomy", "construction" and "communication" cover the main processes inside and outside the ecological classroom, and support the ecological teaching mode to establish the following views: First, endow students with the dominant position in classroom life, cultivate their active awareness of solving problems, and promote them to actively construct knowledge structures to complete teaching tasks; Second, based on the "learning community", promote the common construction and sharing of learning meaning among individuals through interactive teaching activities, and promote teachers, students and the teaching environment to gradually improve and develop in the cycle of "balance - imbalance - new balance"; Third, emphasize the close connection between teaching content, students' life and social progress, expand humanistic vision and improve the connotation of education.

3.2 Ecology

The term "ecology" originates from the ancient Greek wordoikos, meaning "the place where one lives". Ecology refers to the relationship between organisms and the environment, including the interaction between organisms and between organisms and their environment. Where there is life, there is ecology. As an independent science, ecology emerged in the 1860s, but ecological thought has existed since ancient times. In traditional Chinese culture, Taoist ideas such as "following the way of nature", "unity of man and nature", "harmony" and Confucian "doctrine of the mean" all contain the basic ideas of ecology. In 1866, German zoologist Ernst Haeckel first clearly defined "ecology" inGeneral Morphology of Organisms as the science that studies the relationship between animals and their environment.

In 1935, British plant ecologist Arthur Tansley introduced the concept of system theory and put forward the concept of ecosystem, emphasizing the relative balance formed by organisms and the environment. People applied ecosystem theory to the social field and believed that society is the largest artificial ecosystem. Ecological theory holds that the world is a complex ecosystem composed of human, society and nature, and is an organic whole. Educational ecology uses ecological concepts to understand the educational system. All elements in the educational system are interconnected and interact with each other, and exchange energy, materials and information with the outside world, forming a multi-dimensional relationship [8]. Nowadays, ecological theory has received more and more attention in education and teaching. Among them, the basic laws and principles of ecology, such as the law of limiting factors, the law of tolerance, the optimum principle, the niche principle, the principle of co-evolution and the overall effect, all have reference significance for the theoretical construction and practical exploration of the ecological teaching mode.

3.3 Educational Ecology

Lawrence A. Cremin first proposed the concept of "educational ecology" in his bookPublic Education in 1976. He advocated using ecological principles and methods to study the development law of educational subjects in physical and spiritual environments. The proposal of this concept has made important contributions to interdisciplinary research and the development of education and teaching. Educational ecology conducts research from both macro and micro levels: the macro level mainly focuses on national education system issues, while the micro level focuses on micro issues that directly affect teaching, such as schools, classrooms, teaching equipment and curriculum. The development of educational ecology not only provides a conceptual space for the construction of ecological teaching mode, but also creates a brand-new teaching thinking mode.

4. Construction of Ecological Teaching Mode

for Tourism Majors

The combination of smart education and the ecological teaching mode for tourism majors promotes the transformation of teaching concepts, and presents the characteristics of personalized learning, social interaction, cross-border integration, practice orientation and data drive. Against the background of smart education, constructing an ecological teaching mode for tourism majors is an important way to promote students' growth and improve teaching quality, and is conducive to cultivating innovative talents that adapt to the development of the tourism industry. Based on the systematic thought, practical concept, cooperation and sharing idea and holistic thinking in ecology, this paper constructs the ecological teaching mode for tourism majors from five aspects: teaching objectives, teaching content, teaching methods, teaching environment and teaching evaluation [9].

4.1 Teaching Objectives

The determination of teaching objectives should take into account three levels: students, teachers and teacher-student relationship. The overall goal is to promote the all-round development of students, improve the life value of teachers, and build a harmonious teacher-student relationship. At the student level, promoting all-round development is the core goal. It is necessary to cultivate students' in-depth mastery of tourism knowledge, cultivate their independent learning and practical ability, and stimulate their innovative awareness and entrepreneurial spirit. At the teacher level, improving teachers' life value and professional growth is another important goal, which stimulates teachers to pay attention to students' psychological, spiritual, social development and innovative potential, explore knowledge together with students, and enhance mutual trust and understanding between teachers and students. In terms of teacher-student relationship, it is necessary to promote communication and understanding between the two sides and establish an equal and mutually beneficial relationship.

4.2 Teaching Content

The design of teaching content should integrate three aspects: humanistic literacy, interdisciplinary knowledge and real industry scenarios. In addition to imparting professional knowledge of the tourism industry, we should focus on cultivating students' humanistic literacy and moral sentiment, let students understand the impact of tourism activities on society, culture and environment, and master how to protect and inherit cultural heritage in practice. Through the cultivation of humanistic literacy, students can better understand the value of the tourism industry and improve their awareness and responsibility of social responsibility. At the same time, we should pay attention to the integration of interdisciplinary knowledge, and attach importance to real industry scenario experience, which allows students to better understand the practical application of theoretical knowledge and improve their competitiveness and development potential in their career.

4.3 Teaching Methods

In terms of teaching methods, we should focus on the application of smart technology, and focus on the following five points: First, personalized learning paths. Through intelligent education technologies such as personalized learning platforms and big data analysis, schools can customize teaching schemes suitable for each student's needs. Second, project-based learning, which allows students to apply their knowledge and skills in actual projects by participating in the complete project process. Third, case teaching, which introduces real industry cases into teaching courses. Fourth, field visits and industry practice. Fifth, online and offline blended teaching. Through this method, students can flexibly acquire knowledge, practice skills, and interact with teachers and classmates, so as to better understand and apply theoretical knowledge [10].

4.4 Teaching Environment

According to ecosystem theory, a system must be open and exchange energy and information with the outside world to survive and develop. To break the limitations of classroom teaching and expand the ecological space for teacher-student interaction, we can take the following measures: First, apply virtual reality technology. Schools can use virtual reality technology to create a realistic simulated environment of tourism destinations, allowing students to experience various tourism scenarios such as historical sites and natural scenery in person. Second, introduce intelligent interactive equipment such as smart screens and smart

projectors to improve the interactivity and participation of teaching. Third, use intelligent robots to assist teaching. Intelligent robots can act as teaching assistants to provide personalized learning guidance and auxiliary services. Fourth, design diversified educational spaces. By creating diversified educational spaces, schools can provide learning environments for different scenarios, such as simulated scenic spots, hotel lobbies, and travel agency service desks.

4.5 Teaching Evaluation

In the era of smart education, the ecological teaching evaluation for tourism majors is characterized by visualization, diversification and process orientation. In evaluation, intelligent teaching platforms or data analysis tools can be used to collect and analyze students' learning data, so as to better understand their learning status and progress. Multiple evaluation methods such as classroom performance evaluation, project assignment evaluation, field visit evaluation and group discussion evaluation can be combined to fully understand students' learning status and ability level. Teachers should collect students' feedback in time, and adjust teaching methods and curriculum design according to feedback, so as to help students better adapt to the learning environment and improve learning effects.

5. Conclusion

Under the background of smart education, the construction of ecological teaching mode for tourism majors has many opportunities as well as many practical challenges. This mode can broaden the sources and forms of teaching content, improve the breadth and depth of learning, and provide students with a more personalized learning experience. However, this mode also brings challenges to contemporary tourism teachers and students: some teachers and students lack digital skills, which affects teaching effect; problems such as information leakage and cyber attacks may threaten the study and work of teachers and students; in addition, affected by traditional education habits, some students lack independent learning ability, and need to face greater challenges of learning autonomy and self-discipline.

This study deeply discusses the construction of ecological teaching mode for tourism majors under the background of smart education, aiming to provide an innovative, personalized and practical teaching method for tourism education that is more suitable for the background of the smart education era. However, limited by the author's research capacity, the operability and universality of this mode in practice need to be further verified. Secondly, although this study proposes a construction framework for the ecological teaching mode, it may face difficulties and challenges in teacher training, technical support, curriculum design and other aspects in specific implementation, which requires more in-depth research and summary of practical experience.

In future research, we can strengthen work in the following aspects: First, we need to deeply explore practical cases of the ecological teaching mode for tourism majors under the background of smart education, and conduct in-depth analysis combined with actual data to verify the effectiveness of the ecological teaching mode. Second, we can carry out large-sample surveys and field visits to study the cognition, attitude and behavior of different student groups and teachers towards smart education, so as to provide more targeted suggestions for personalized teaching. In addition, we can also combine interdisciplinary research methods to explore the mechanism and path of the integrated development of smart education and tourism majors, and promote cross-integration and cooperation between disciplines.

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References

[1] Zheng, Q. H. Artificial intelligence empowers the construction of a new pattern of future education. China Higher Education Research, 2024(03): 1-7.

[2] Fu, H. Y., & Gross, M. J. (2023). Ecotonic teaching: Building a sustainable learning ecosystem for smart tourism education. Journal of Hospitality, Leisure, Sport & Tourism Education, 43, 100652.

[3] Campos, A. M., & Alvarez, M. D. (2024). Smart ecosystems for tourism higher education: The role of AI-driven adaptive learning in student engagement. Tourism Management Perspectives, 51, 101328.

[4] McKenzie, S. M., & Powell, J. (2024). Complex adaptive systems thinking for

smart tourism education: Rethinking ecological pedagogies. Journal of Sustainable Tourism, 32(7), 1421-1438.
[5] China Vocational Education Development Report (2012-2022). Vocational and Technical Education, 2022, 43(24): 69-77.
[6] Wu, B. J. "Double-qualified" teaching teams of tourism management major in higher vocational colleges: Connotation, goals and mechanisms. Journal of Taiyuan Urban Vocational College, 2024(01): 123-126.
[7] Li, S. J. Reform of curriculum evaluation model in blended learning environment: A case study of Business English application course in Huzhou Vocational and Technical College. Journal of Huzhou Vocational and Technical College, 2017, 15(01): 20-24.
[8] Wei, W. Research on professional identity of tourism majors in higher vocational education. Inner Mongolia Normal University, 2022: 26-27.
[9] Song, Q. Y. Research on ecological teaching mode under the background of new curriculum reform. Hebei University, 2007: 22-23.
[10] Zhou, G. M., & Xie, M. H. Developmental teaching evaluation theory in universities from the perspective of educational ecology. Hunan Social Sciences, 2008(04): 159-161.