Exploring The Innovation of Digital Media Teaching System Based on Social Needs

[*1] Zhang Yixin [2] Siti Farhah Binti A Aziz [3] Benjamin Chan Yin Fah

[1]Chongqing City Management College；

[1,2,3]Universiti Tun Abdul Razak

Abstract

Aiming at the needs of today's society, this paper explores the innovation of digital media teaching system guided by social needs. By introducing digital media technology, more possibilities can be brought to education and the diverse learning needs of students can be met. The innovation of digital media teaching system not only involves the improvement of teaching methods, but also requires thinking about the essence of education, respecting individual differences of students and cultivating comprehensive literacy and innovation ability. Under the guidance of social needs, we can better explore and practice the innovation of digital media teaching system and contribute to the cultivation of talents with adaptability in the future society.

Keywords: Social needs; Digital media teaching; System innovation

Introduction

With the progress of society and the development of science and technology, digital media has penetrated into all areas of life and has had a profound impact on education. Facing the needs of the new era, we need to be guided by social needs and explore the innovation of the digital media teaching system to meet the challenges and needs of modern education. The innovation of the digital media teaching system is not only about the improvement of teaching methods, but also involves the transformation of educational concepts. The traditional teaching model can no longer meet the diverse learning needs of students, and the introduction of digital media has brought new possibilities to education. Through the application of digital media, we can break the limitations of time and space, provide students with a more autonomous and flexible learning environment, and stimulate learning interest and creativity. Recent studies have emphasized the critical role of digital media in transforming pedagogy by enhancing accessibility and fostering pedagogical innovation while also highlighting the challenges of technological and cultural adaptation in diverse educational contexts (Bitar & Davidovitch, 2024). Moreover, social media platforms have been recognized as significant tools in higher education, not only for communication but also for enhancing professional identity and promoting lifelong learning, though their integration into formal learning and assessment practices remains complex (Al-Hail, Zguir, & Koç, 2024).

2. Literature review

2.1 Explore the significance of innovation in the teaching system of digital media majors based on social needs

The technology and demand of the digital media industry are changing rapidly, and the traditional teaching system often cannot keep up. By innovating the teaching system of digital media majors, we can better adapt to the needs of the industry, cultivate graduates with practical ability and adaptability, and improve the employment competitiveness of graduates （Ma, H., & Li, J，2021). Liu（2022) mentions that the digital media industry pays more attention to the cultivation of practical ability, and the traditional theoretical teaching model is difficult to meet this demand. The innovative teaching system can enable students to have more contact with actual cases and projects, improve their practical ability and problem-solving ability by increasing practical courses, project training, workshops, etc.

The digital media industry involves a wide range of fields and skills, and requires a comprehensive and multidisciplinary knowledge structure. The innovative teaching system can help students fully master the required knowledge and skills by sorting out the course system and offering diversified courses covering digital media production, interactive design, data analysis and other fields. The digital media industry needs practitioners with innovative ability, while traditional teaching often focuses more on the transfer of knowledge. The innovative teaching system can cultivate students' creative thinking and innovation ability by introducing innovative educational concepts and methods, and improve students' competitive advantage in the industry. （Hero, L.-M., & Lindfors, E.，2019)

Zhang, R., & Han, H. (2021) highlights that the digital media industry has increasingly higher requirements for talent and needs graduates with practical work experience. The innovative teaching system can establish close cooperative relationships with industry enterprises, and through school-enterprise cooperative internships, industry-university-research projects, etc., allow students to be exposed to real professional environments and project requirements, and improve the employment quality of graduates.

2.2Courses included in the Digital Media major

Digital media basic courses, including digital media introduction, computer basics, multimedia technology, user experience and other courses, aim to provide students with basic knowledge and skills in the field of digital media. Image processing and design courses, including digital image processing, graphics, design principles and other courses, help students master the basic principles and techniques of image processing and design, and cultivate their ability in digital media creation and editing. Interaction design and interface design courses, including human-computer interaction principles, interaction design, interface design, usability testing and other courses, aim to cultivate students' ability to design and optimize user experience, such as web design, mobile application interface design, etc. Multimedia production and programming courses, including multimedia production, animation design, video editing and other courses, help students understand the process and technology of multimedia production, and skillfully use production tools and software for creation （Zhan, Wang, &Pan etl.al., 2022).

Giese, Wende, & Bulut etl.al. (2020) mentions that data analysis and visualization courses, including data mining, data analysis, information visualization and other courses, help students learn the basic methods of data processing and analysis, and cultivate their

ability to make data-driven decisions and visualized displays in the field of digital media. Digital marketing and social media courses, including digital marketing strategies, social media management, e-commerce and other courses, help students understand the application of digital media in marketing and brand building, and cultivate their professional knowledge and skills in the field of digital marketing. Media ethics and law courses, including media law, media ethics, copyright protection and other courses, aim to guide students to follow professional ethics and legal norms, and understand the relevant laws, regulations and ethical requirements of the digital media industry (Cowley, Humphrey, & Muñoz, 2020).

2.3Core Guiding Principles for Innovation of Digital Media Teaching System

Lu (2019) highlights that digital media is a highly comprehensive subject area, involving knowledge from multiple disciplines such as computer science, art design, and media studies. The teaching system should fully integrate this interdisciplinary knowledge to enable students to develop comprehensively in theory and practice. The digital media major focuses on students' practical application ability and creative ability. The teaching system should be centered on practice and project-driven, cultivate students' ability to solve practical problems, and allow students to learn and apply knowledge in real scenarios through project practice (Hashimi, Muwali & Zaki,2019).

Meng (2019) points out that the digital media industry requires continuous innovation and creativity, and the teaching system should cultivate students' innovative thinking and creative ability. By providing creative courses and challenges, stimulate students' imagination and creativity, and cultivate innovative spirit in the field of digital media. The digital media industry is developing rapidly, and the teaching system should be closely integrated with the industry to understand the latest needs and trends of the industry. Through cooperation with enterprises and industry internships, students can truly contact the industry, understand industry standards and actual working environment, and improve their employment competitiveness.

2.4 Explore the problems of innovation in the teaching system of digital media majors guided by social needs

2.4.1 Challenges of subject integration

Digital media majors cover multiple disciplines such as computer science, design art, and communication, and each discipline has its own unique knowledge. The wide range of disciplines leads to problems such as blurred knowledge boundaries and overlapping concepts in subject integration. The digital media industry is in a state of rapid change, with technologies and trends constantly updated. The development speed of different disciplines is inconsistent, and the progress of some disciplines may lag behind rapidly, leading to difficulties in integration (Wang, Charoenmuang & Knobloch etl.al.,2020). Subject integration requires cooperation and coordination among teachers, but there are often differences in thinking, teaching methods, and evaluation standards among teachers of different disciplines. This requires teachers to cooperate and communicate across disciplines and formulate unified teaching plans and evaluation systems. Subject integration requires teachers to have interdisciplinary backgrounds and

knowledge reserves, but in reality not every teacher has such capabilities (Henry, Hernalesteen & Collard, 2020). The professional ability and resources of individual teachers will also impose certain restrictions on subject integration. Discipline integration requires the setting of interdisciplinary courses and the design of teaching models, but the existing course settings and teaching models are often restricted by the education system, administrative management and evaluation mechanisms, and it is difficult to flexibly meet the needs of discipline integration (Magen-Nagar, Shachar & Argaman, 2019).

2.4.2 Rapidly changing technology and industry needs

The digital media industry is at the forefront of technological innovation, and various new technologies are emerging in an endless stream, such as artificial intelligence, virtual reality, augmented reality, etc. The emergence and development of these new technologies have led to constant changes in industry needs, and put forward new requirements for the teaching content and methods of digital media majors. The digital media industry is a highly competitive and rapidly evolving industry, and market demand changes at any time. The application of emerging technologies and changes in user needs will have an important impact on the development of the industry. The digital media professional teaching system must be able to keep up with these changes in a timely manner and cultivate talents that adapt to the development of the industry.The digital media major involves multiple disciplines, such as computer science, design art, and communication. The development speed and trend of each discipline are different. The cross-integration of different disciplines will bring about the complexity of technology and industry needs, which increases the challenge of rapid changes. The constraints of the education system, the old curriculum settings and the updating mechanism may not be able to respond to the rapid changes in the industry in a timely manner. The limitations of faculty training and teaching resource allocation will also cause the lag of innovation in the education system, resulting in the inability to adapt to changes in technology and industry needs in digital media professional teaching.

2.4.3 Disconnection between market demand and student quality

Gong (2021) highlights that the digital media industry is a rapidly developing and innovative industry, and market demand is constantly changing with technology and industry trends. However, the process of innovation in the teaching system is relatively slow, and the teaching content and methods lag behind the development of the industry, resulting in a gap between the professional knowledge and skills of graduates and market demand. The mechanism and curriculum settings of the education system are often relatively rigid and have a long update cycle. The development speed of the digital media industry far exceeds the response speed of the education system, making it impossible for the teaching system to adjust in time to adapt to market demand, resulting in a disconnect between market demand and the teaching system (Holley and Hobbs, 2019).

With the development of the digital media industry, the market's requirements for the capabilities of digital media professionals are also constantly increasing. The traditional teaching system often focuses on basic theoretical knowledge and simple practical

operations, but lacks the training of innovation ability, teamwork, problem-solving ability, etc. This results in a mismatch between the quality of graduates and market demand in the job market. Traditional digital media professional teaching is often limited to classroom lectures and static experiments, lacking practical opportunities combined with actual industry projects (Mergen, Junga & Risse etl.al.,2023).

2.5 Innovation strategy of digital media professional teaching system oriented to social needs

2. 5.1 Organically integrate multidisciplinary elements and explore digital media discipline system

Zhang (2021)highlights that maintain good cooperative relations with industry enterprises, professional associations and employers, understand the development direction of the industry and the demand for talents through research and communication, and timely adjust the curriculum setting and teaching content of digital media disciplines. Organically integrate digital media disciplines with related disciplines, such as computer science, design, and media, to cultivate graduates with interdisciplinary comprehensive capabilities. Build interdisciplinary teaching teams and laboratories, offer interdisciplinary courses, and encourage students to participate in interdisciplinary project practices. Provide rich practical opportunities, such as internships, project training, simulation exercises, etc., so that students can apply the knowledge and skills they have learned in real scenarios (Zukarnain, Wan Husain, & Nik etl.al., 2020). At the same time, focus on cultivating students' practical ability, problem-solving ability and innovation ability, so that they have the ability to adapt to the ever-changing industry needs. Build laboratories and studios for digital media disciplines, equipped with advanced equipment and software, and provide diversified learning resources, such as online tutorials, open courses, workshops, etc., to meet the learning needs and interests of different students (Petrova and Savadova, 2020).

2.5.2 Give full play to its own advantages and form a distinctive positioning

Establish close ties with the digital media industry and continue to track industry trends and cutting-edge technologies. Timely adjust teaching content and curriculum settings to ensure that the education system keeps pace with market demand. Cooperate with the industry to provide students with real project practice opportunities. By participating in actual projects, students can be exposed to the latest technologies and working methods, and improve their ability to solve practical problems and practical experience.In addition to imparting basic theoretical knowledge, we should also focus on cultivating students' comprehensive qualities and innovative abilities. Through innovative design, teamwork and other projects, stimulate students' creativity and cooperative spirit, and enable them to have more comprehensive abilities. Strengthen the construction of the teaching staff, introduce teachers and mentors with rich industry experience, and improve the quality of the teaching staff. At the same time, strengthen professional development training for teachers, keep teachers' subject knowledge updated and professional skills improved.

Actively establish cooperative relations with industry enterprises, and carry out joint R&D projects, internship employment bases and other forms of cooperation. Through close cooperation with enterprises, timely understand market demand and industry status, and provide more accurate guidance for teaching content and curriculum settings. Encourage students to give full play to their personal strengths and interests, provide a variety of elective courses and independent learning opportunities, and cultivate students' personalized development. At the same time, provide students with career planning guidance and employment services to help them better adapt to market demand and expand their career development.

2.5.3 Clarify student training goals and build a reasonable curriculum system

Xu and Ramli (2023) points out that cultivate students to master core skills in digital media design, production and management, and have the practical ability to use various digital media tools and software for creation and production. Li (2021) mentions that cultivate students with a good computer science foundation and design thinking, and be able to cooperate across fields and use multidisciplinary knowledge and methods to solve complex problems in the field of digital media. Cultivate students' ability to think independently and innovate, encourage students to participate in innovative projects and entrepreneurial activities, and cultivate innovative awareness and entrepreneurial spirit. Cultivate students to have effective communication and collaboration skills in teamwork, and be able to cooperate with people from different backgrounds in digital media projects to solve problems and complete tasks.

Set up basic courses, such as digital media principles, data visualization, etc., to help students build a solid subject foundation. At the same time, set up professional direction courses covering different fields such as digital media design, interactive design, user experience, etc., to meet students' personalized development needs. Focus on practical teaching, provide a large number of practical opportunities such as case analysis, project training and simulation experiments, so that students can apply theoretical knowledge to the process of solving practical problems (Zeng and Wei, 2019).

2.5.4 Introduce new technologies and tools

The introduction of VR and AR technologies can provide a more realistic virtual experience and interactive environment, helping students better understand and apply the relevant concepts and skills of digital media. For example, using VR technology to allow students to participate in the production and experience of virtual scenes in an immersive way, or using AR technology to add virtual content to actual scenes. The field of digital media involves the analysis and presentation of a large amount of data, and the introduction of data visualization tools can help students better understand and display data. By using popular data visualization software and tools such as Tableau, D3.js, etc., students can turn complex data into visual works that are easy to understand and communicate (Huang, Ball & Ratan, 2019).

Fu (2021) mentions that the digital media major is closely related to creativity, so the introduction of creative software and tools can stimulate students' creativity and design ability. The education system can provide commonly used creative software, such as

Adobe Creative Suite (including Photoshop, Illustrator, Premiere, etc.), Sketch, etc., so that students can use these tools proficiently for digital media creation and design. Social media and mobile applications are currently hot trends in the field of digital media, and corresponding technologies and tools are also indispensable. Introducing teaching content on social media management and mobile application development, and providing corresponding development tools and platforms, can help students understand and practice social media strategies and mobile application development technologies (Nguyen, Ha, & Vu etl.al., 2021).

3.Methodology

In the Methodology section of this study, the literature review method was used to systematically organize and analyze the existing research results in related fields. As an important research method, literature review can provide researchers with a panoramic perspective, so that they can identify the trends, hot spots and possible research gaps in current research on the basis of a comprehensive understanding of the current research status. Through the systematic analysis of existing literature, this study was able to construct a theoretical framework and provide an important reference for subsequent research. The literature review not only helps to understand the evolution of relevant concepts and theories, but also reveals the connections and differences between different studies. By summarizing the achievements and shortcomings of different studies, this paper lays a solid foundation for further empirical research and clarifies the innovative contribution of this study. In addition, more scientific and reasonable decisions were made when selecting research methods and designing research frameworks. By comparing and evaluating different research methods in various types of literature, we can better understand their applicability and limitations, so as to select the most appropriate method in this study. In summary, the literature review not only provides support for the theoretical construction and method selection of this study, but also provides rich background and materials for in-depth exploration of research issues.

4.Conclusion

The innovation of digital media teaching system can also better meet the needs of society and cultivate talents that meet the needs of reality. Modern society has higher and higher requirements for talents, and they need to have good information literacy, critical thinking, teamwork and innovative spirit. Through the innovation of digital media teaching system, we can better cultivate and improve students' comprehensive quality and social adaptability. Only by closely combining with the needs of real society and continuously promoting the innovation of digital media teaching system can we lead the progress of education, cultivate a new generation of talents with comprehensive quality and innovative ability, and make positive contributions to social development.

Reference

Al-Hail, M. A., Zguir, M. F., & Koç, M. (2024). Exploring Digital Learning Opportunities and Challenges in Higher Education Institutes: Stakeholder Analysis on the Use of Social

Media for Effective Sustainability of Learning–Teaching–Assessment in a University Setting in Qatar. Sustainability. https://doi.org/10.3390/su16156413
Bitar, N., & Davidovitch, N. (2024). Transforming Pedagogy: The Digital Revolution in Higher Education. Education Sciences. https://doi.org/10.3390/educsci14080811
Cowley, S. C., Humphrey, W. F., & Muñoz, C. (2020). Industry Certifications in Digital Marketing and Media Education: An Examination of Perceptions and Use Among Educators. Journal of Marketing Education, 43(3), 189-203. https://doi.org/10.1177/0273475320948570
Fu, L. (2021). Research on the Teaching Model of Animation Professional Class Based on AR/VR Technology and 5G Network. Wireless Communications and Mobile Computing. https://doi.org/10.1155/2021/1715909
Giese, T. G., Wende, M., Bulut, S., & Anderl, R. (2020). Introduction of Data Literacy in the Undergraduate Engineering Curriculum. 2020 IEEE Global Engineering Education Conference (EDUCON), 1237-1245. https://doi.org/10.1109/EDUCON45650.2020.9125212
Gong, Y. (2021). Application of virtual reality teaching method and artificial intelligence technology in digital media art creation. Ecol. Informatics, 63, 101304. https://doi.org/10.1016/J.ECOINF.2021.101304
Hashimi, S. A., Al Muwali, A., Zaki, Y., & Mahdi, N. (2019). The Effectiveness of Social Media and Multimedia-Based Pedagogy in Enhancing Creativity among Art, Design, and Digital Media Students. International Journal of Emerging Technologies in Learning, 14(21), 176-190. https://doi.org/10.3991/ijet.v14i21.10596
Henry, J., Hernalesteen, A., & Collard, A.-S. (2020). Designing Digital Literacy Activities: An Interdisciplinary and Collaborative Approach. 2020 IEEE Frontiers in Education Conference (FIE), 1-5. https://doi.org/10.1109/FIE44824.2020.9274165
Hero, L.-M., & Lindfors, E. (2019). Studentslearning experience in a multidisciplinary innovation project. Education + Training. DOI: 10.1108/ET-06-2018-0138
Holley, D., & Hobbs, M. (2019). Augmented Reality for Education. Encyclopedia of Educational Innovation. https://doi.org/10.1007/978-981-13-2262-4_120-1
Huang, K.-T., Ball, C., Francis, J., Ratan, R., Boumis, J., & Fordham, J. A. (2019). Augmented Versus Virtual Reality in Education: An Exploratory Study Examining Science Knowledge Retention When Using Augmented Reality/Virtual Reality Mobile Applications. Cyberpsychology, Behavior and Social Networking, 22(2), 105-110. https://doi.org/10.1089/cyber.2018.0150
Li, F. (2021). Cultivating Creative Talents of Digital Media Art Under the Background of Artificial Intelligence. International Journal of Education and Humanities, 622-628. https://doi.org/10.1007/978-3-030-79200-8_92
Liu, Y. (2022). Innovation of Teaching Method of Digital Media Art Based on Convolutional Neural Network. Advances in Multimedia. https://doi.org/10.1155/2022/6288890
Lu, G. (2019). Teaching Exploration on Project Planning Course of Digital Media Art Specialty. Educational Innovations and Applications. https://doi.org/10.35745/ecei2019v2.130

Ma, H., & Li, J. (2021). An Innovative Method for Digital Media Education Based on Mobile Internet Technology. International Journal of Emerging Technologies in Learning, 16, 24037. https://doi.org/10.3991/IJET.V16I13.24037
Magen-Nagar, N., Shachar, H., & Argaman, O. (2019). Changing the Learning Environment: Teachers and Students' Collaboration in Creating Digital Games. J. Inf. Technol. Educ. Innov. Pract., 18, 61-85. https://doi.org/10.28945/4405
Mergen, M., Junga, A., Risse, B., Valkov, D., Graf, N., & Marschall, B. (2023). Immersive training of clinical decision making with AI driven virtual patients – a new VR platform called medical tr.AI.ning. GMS Journal for Medical Education, 40. https://doi.org/10.3205/zma001600
Meng, X. (2019). Research on the Innovation of Collaborative Talents Cultivation Mode in the Major of Computer Application Technology Based on "Production-Teaching Integration and School-Enterprise Cooperation". Proceedings of the 3rd International Seminar on Education Innovation and Economic Management (SEIEM 2018). https://doi.org/10.2991/SEIEM-18.2019.91
Nguyen, P., Ha, H.-D., Vu, T.-H., Nguyen, Q.-H., Truong, H., & Le, H.-S. (2021). Applying VR/AR Technology in Product Advertising to Improve User Experience. 2021 15th International Conference on Advanced Computing and Applications (ACOMP), 201-205. https://doi.org/10.1109/acomp53746.2021.00036
Petrova, D., & Savadova, S. (2020). Collaborative Learning in a Shared Digital Studio. Digital Media Design Masters Programme at the University of Edinburgh. https://doi.org/10.1007/978-3-030-49647-0_12
Wang, H.-H., Charoenmuang, M., Knobloch, N. A., & Tormoehlen, R. (2020). Defining interdisciplinary collaboration based on high school teachersbeliefs and practices of STEM integration using a complex designed system. International Journal of STEM Education, 7, 1-17. https://doi.org/10.1186/s40594-019-0201-4
Xu, Y., & Ramli, H. B. (2023). Research on the Application of Interdisciplinary Cooperation and Innovation Ability in the Training Model of New Media Art Major. International Journal of Education and Humanities. https://doi.org/10.54097/ijeh.v10i2.11648
Zeng, X., Li, J., & Wei, E. (2019). Construction and Discussion of Practical Teaching System of Digital Media Technology Major in Independent Undergraduate Colleges. Proceedings of the 3rd International Conference on Economics and Management, Education, Humanities and Social Sciences (EMEHSS 2019). https://doi.org/10.2991/emehss-19.2019.62
Zhang, R., & Han, H. (2021). Driven by Subject Competitions to Cultivate College Students' Innovation and Entrepreneurship Ability. 2021 11th International Conference on Information Technology in Medicine and Education (ITME), 480-484. https://doi.org/10.1109/ITME53901.2021.00102
Zhang, Z. (2021). Research on talent cultivation of digital media art major based on “integration of production and education” under the background of big data. 2021 International Symposium on Artificial Intelligence and its Application on Media (ISAIAM), 86-90. https://doi.org/10.1109/ISAIAM53259.2021.00025

Zhan, Q., Wang, J., Pan, X., & Ding, Y. (2022). Teaching Model Design of Computer Programming Courses for Digital Media Technology Students. Wireless Communications and Mobile Computing. https://doi.org/10.1155/2022/7085914
Zukarnain, Z. A., Wan Husain, W. S. W., Che Hassan, S. H., Nik Kamaruzaman, N. N., & Mohd Zin, N. M. (2020). Examining StudentsAptitude using Project-Based Learning through University-Industry Collaboration. Journal of Physics: Conference Series, 1496(1), 012013. https://doi.org/10.1088/1742-6596/1496/1/012013