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Research on the Construction of Digital Media Major Courses Empowered by Generative Artificial Intelligence

Zhang Huayang, He Songhua*

School of Digital Media, Shenzhen Polytechnic University, Shenzhen, 518055, China

Corresponding author: He songhua, hdh1818@szpu.edu.cn

Abstract: Generative artificial intelligence, with its powerful content generation capabilities, information processing capabilities, and the characteristics of intelligence and automation, has had a profound impact on the education sector. Taking the construction of digital media major courses as an example, this paper first analyzes the industry impact and course challenges posed by generative artificial intelligence to traditional digital media. Subsequently, it introduces the construction, application, and evaluation models of digital media courses empowered by generative artificial intelligence. Finally, based on the technology of generative artificial intelligence, the paper proposes reflections and future prospects for the construction of digital media courses, aiming to provide useful references.

Keyword: Generative Artificial Intelligence; Digital Media; Education Informatization; Course Construction

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1.Introduction

Since the end of 2022, generative AI applications like DeepSeek, KIMI and ChatGPT have emerged one after another. They show the new - generation generative AI's powerful content generating and information - processing abilities. These highly intelligent and automated smart applications have shocked the education industry. They've brought more personalized and customized teaching content, multimodal teaching resources, and cross-field integrated applications, offering new opportunities for high - quality education development.

However, in the face of the challenges of the digital and intelligent era, traditional digital media - related professional courses are showing many shortcomings. For example, their knowledge is lagging, the teaching mode is simple, and the evaluation system is missing. Especially in digital media courses, with the continuous emergence of intelligent technologies, the way students create digital content has changed greatly. Traditional digital media software can hardly meet the students' creative and practice requirements.

Based on this, taking digital media - related professional courses as an example, this paper first analyzes the impact of generative AI on the digital media industry and the challenges to traditional courses. Then, it introduces the development, application, and effectiveness of generative - AI - empowered digital media courses. Finally, it reflects on and looks ahead to such courses, hoping to provide a useful reference for educational reform in similar digital media - related professional courses.

2.The Impact of Generative AI on the Traditional Digital Media Industry and the

Challenges to Courses

2.1 The Dual Shock of Accelerated Technological Iteration and Changing Industry Needs

Traditional teaching in digital media majors focuses on software skills like Photoshop, Premiere, Illustrator, 3D max, and After Effects. But with generative AI emerging, the traditional workflow of using these tools for initial drafts and trials is becoming outdated. Generative AI can quickly produce high - quality, multimodal digital content, offering creators a steady stream of materials, resources, and inspiration.

As technology iterates rapidly, industry needs are also changing. Since generative AI can efficiently create digital content, the demand for traditional roles has dropped sharply. Instead, there's a surge in demand for versatile talents who can independently conceive and plan and fine - tune AI. In the end, the traditional curriculum, which only focuses on tool operation training, has become disconnected from industry needs. This has caused a structural contradiction where teaching lags behind technological development.

2.2 The Severe Disconnection Between Traditional Course Structures and the Cultivation of Versatile Abilities

The current digital media curriculum is split into separate technical modules, with courses like graphic design, copywriting, and film editing offered independently. Although this is meant to help students master specific digital skills, a look at actual industry roles shows that businesses now want new - generation talents to have AI toolchain collaborative development abilities. In traditional curricula, there's often an over - emphasis on technical proficiency. For example, students are assessed on PS layer operation skills, while creative generation is neglected.

As a result, students know the "how" but not the "why" or "what". In the intelligent age, using generative AI to quickly create initial drafts and then fine - tuning them can reduce operating costs and improve work efficiency. Therefore, the intelligent age requires versatile talents. There's an urgent need to develop integrated courses that use generative AI to empower digital content generation and creation. This will help address the paradigm shift in creation caused by generative AI.

3.The Development, Application and Evaluation of Generative AI - Empowered Digital Media Courses

Generative AI, which generates content like text, images, audio, video, and code based on algorithms, models, and rules, is a new - generation AI that creates original by content learning from large - scale datasets. Common generative AI platforms include DeepSeek, ChatGPT, Ernie Bot, Tongyi Qianwen, Stable Diffusion, and MidJourney. By entering prompts or modifying parameters, users can create digital media works. Integrating these platforms enables the development of generative AI - empowered digital media courses.

3.1 Course Development Background and System Reconstruction

Generative AI technology is bringing a paradigm shift to the digital media industry. According to IDC's "2024 AIGC Application Layer Top Ten Trends White Paper", 2024 will see over 500 million new applications globally, surpassing the combined number of applications developed over the past 40 years. Intelligent applications are set to grow explosively.

Based on the technology diffusion theory, this course has developed a four - stage training model of "technology understanding - tool mastery - creation transfer - ethical thinking". In the technology understanding stage, it emphasizes learning the principles of technology and pre - researching technology ethics. In the tool mastery stage, the focus is on grasping generative tools and creation workflows. In the creation transfer stage, it stresses the generation of multimodal works to enhance creative transformation and critical thinking. In the ethical thinking stage, ethical consideration and value judgment are integrated to strengthen technical leadership and social responsibility.

This model helps solve the question of traditional digital media education: technological lag, single - minded creation, and flat evaluation.

3.2 Developing Generative AI - Empowered Digital Media Courses

In digital media course development, the educational application of generative AI reshapes the curriculum through the three - stage model of technology diffusion theory. For instance, in the technology understanding layer, the potential diffusion model

principles of tools like Stable Diffusion are analyzed. In the tool mastery layer, a spiral learning path of "prompt engineering - parameter tuning - workflow optimization" is built. In the creation transfer layer, project case libraries for vertical fields like architecture and art are designed.

Take the course "AI - Powered New Media Technology" as an example. It's a cutting - edge elective for digital media majors, combining intelligent technology with digital media applications. This interdisciplinary course integrates science, technology, innovation, and practicality.

The course adopts a "vertical - horizontal" architecture. The vertical technical chain covers text generation (e.g., deep - question - asking technology), image synthesis (e.g., ControlNet, LoRA models), video creation (e.g., image - to - video, video fine - tuning), and digital human construction. The horizontal application domain sets three - tier ability - training goals: "basic creation → creative enhancement → social communication".

Through lectures, group discussions, case studies, hands - on practice, and project - based learning, students systematically learn intelligent media technology applications like AI text, painting, video, and audio. This cultivates versatile talents who understand AI, excel in creative design are, proficient in content generation, and skilled in communication services.

3.3 Applying Generative AI - Empowered Digital Media Courses

This study applies project - based learning (PBL) to build an AIGC course framework. Each project follows a "task - driven - ability - advanced - result - transformed" three - stage mechanism. Each teaching unit includes: Technical validation projects: e.g., Stable Diffusion parameter - setting experiments. Creative experimental projects: e.g., cross - modal narrative generation challenges. Industry - adapted projects: e.g., full - process e - commerce short - video generation.

The basic task completion rate serves as the course - achievement benchmark. All tasks must be completed. Creative extension tasks optimize generative workflows. For example, ControlNet is used to iterate three design drafts. Practical training tasks connect with industry - academia - research cooperation projects, such as real - world corporate tasks or competition topics like the Blue Bridge Cup Visual Art Design Competition.

After class, the "metacognitive training module" is extended. Students analyze the creation process and optimize their works based on a multi - dimensional evaluation scale. The scale covers nine indicators, including technical rationality, creative novelty, and commercial feasibility. This transforms teaching outcomes into competition - winning works, commercial applications, and patent applications.

To create generative AI text, the course comprehensively covers platforms like DeepSeek, Tongyi Qianwen Er,nie Bot, and Tencent Hunyuan. It introduces the logic of text - generation through asking, inquiring, and commanding. It emphasizes creating prompts using the "role + task + requirements + materials" method.

To expand generative AI text creation, the course focuses on advanced prompt - writing. Taking the new media editor's job responsibilities as an example, it conducts AI - text - application exercises. These include mastering the basics of text writing and the skills of asking questions to large models.

For advertising copywriting scenarios, the course builds and applies the RPTFE model: (1) Role: "You are a senior advertising copywriter." (2) Task: Create three laundry detergent slogans and their creative ideas. (3) Requirements: Include emotional resonance and memorable points. (4) Materials: Provide product ingredient data sheets. (5) Evaluation: Self - evaluation, peer review, machine evaluation, and teacher evaluation based on the given slogan evaluation system.

To create generative AI images, the course covers platforms like Stable Diffusion and MidJourney. From basic operations like positive/negative prompts, sampling methods, and image - size control, to advanced skills like calling large models, LoRA models, ControlNet models, and image - to - image redrawing, the course provides comprehensive guidance. It also explores vertical - field applications like luxury - packaging, architectural, and font design.

On the basis of WebUI, the course extends to advanced ComfyUI content, helping students grasp workflow principles and applications.

To create generative AI videos, the course comprehensively explains the AIGC video production process. It covers scriptwriting, storyboarding, animatics, dialogue, blanks, and sound effects. Platforms like Jimeng, Kelin, Pixverse.ai, and SUNO are introduced to help students grasp the creative skills and ideas behind generative AI video production from a

holistic perspective.

To create generative AI - powered digital humans, the course traces their evolution from “virtual characters, CG motion capture, 3D digital humans, to ultra - realistic digital humans”. It presents the digital human industry chain and covers platforms like Jianying, Feiying, Youyan, and Tencent. This equips students with cutting - edge digital human creation technologies and application methods.

3.4 Evaluation of Generative AI - Empowered Digital Media Courses

Generative AI can serve both as course content and as a tool for teaching evaluation. Firstly, generative AI can be used to evaluate student work. For instance, it can generate detailed reports and suggestions for improvement. In advertising - slogan teaching, a prompt can be sent to a generative AI platform to obtain precise evaluation and modification advice across nine aspects.

Secondly, a diversified evaluation system can be formed by combining self - evaluation, teacher evaluation, peer evaluation, and generative AI evaluation. Teacher evaluation is known for its accuracy and authority, with diverse feedback forms. Self - evaluation helps learners improve self - awareness, promotes self - directed learning, and reduces learning anxiety. Peer evaluation helps learners develop responsibility, motivates them, and encourages self - reflection. Additionally, generative AI can take on different roles in the evaluation process, such as teacher, peer, or other undefined roles, providing students with a richer learning experience.

4.Reflections and Future Prospects on Digital Media Course Development Based on Generative AI

4.1 Balancing Technological Rationality and Educational Essence

There is a significant mismatch between technology and education adaptation. Since the end of 2022, generative AI technology has undergone several major upgrades, from text generation to image and video creation. However, school curricula are often slow to change due to complex processes such as syllabus revision, textbook development, and teacher training. This delay means that students are always learning outdated technical tools and theoretical knowledge, while the industry has already moved on to more efficient technologies. Some universities still haven’t introduced AI - related digital media courses and focus on teaching traditional image and video software. In reality, the industry has widely adopted generative AI tools to quickly produce high - quality works. Students who haven’t learned generative AI technologies will struggle to meet industry needs upon entering the job market and will require extra time and effort to learn these technologies and adapt to the intelligent technology environment. If courses aren’t updated in time, students won’t be able to access and master the latest intelligent technology applications, which will affect their employability.

4.2 Developing a Generative AI Digital Media Creation Resource Library

There is an urgent need to develop a generative AI digital media creation resource library. Currently, generative AI resources used in courses mainly rely on external platforms, and there is a lack of a systematic in - house resource library. This limits the personalization, customization, and depth of teaching content. First, although external platforms offer rich generative AI resources, their high costs make it difficult for schools to purchase them all, hindering the smooth implementation of courses. In digital media education, in addition to text generation, the creation of images, videos, audio, and digital humans also requires the support of paid generative AI platforms. Second, building a generative AI digital media creation library will integrate and optimize various generative AI resources, introduce the latest cases and tools in a timely manner, and better provide existing generative AI - related competition works and training projects to students with different needs, such as course learning, competition preparation, innovation and entrepreneurship, and job hunting. This will precisely match individual student requirements.

4.3 Exploring the Relationship Between Generative AI Creativity and Rapid Content Generation

While generative AI creation significantly improves content - generation efficiency, the relationship between creativity and rapid content generation needs to be better balanced. Students are often attracted by the powerful generative capabilities of AI but overlook in - depth creative exploration and personalized expression. The content generated by AI is usually based on existing data and lacks uniqueness and innovation. If students overly depend on AI - generated content, they may fall into

superficial thinking, leading to highly homogeneous works lacking unique artistic styles and value. This superficial creative habit can make students easily satisfied with quick results and stop thinking about creativity and possibilities. Therefore, teachers should actively guide students to use generative AI technology correctly and focus on cultivating creative depth. Through proper guidance, students can create more innovative works and truly achieve the integration of technology and creativity.

5.Conclusion

Generative AI technology is a key driver of China's educational digital transformation and an important facilitator of high - quality education development. It provides significant support for curriculum optimization, teaching evaluation innovation, and talent - development - model reform in digital media education. However, generative AI also has limitations and challenges, such as technological application compatibility, the lack of creation libraries, and the dialectical relationship between creativity and rapid content generation. To cultivate versatile talents with knowledge of intelligent technologies and creative thinking, and to nurture more innovative talents to meet future societal needs, it is essential to effectively leverage generative AI in digital media course development.

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Conflict of Interests

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