

Innovation in Tertiary Education and Teaching from the Perspective of New Media

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Abstract: As new media technology rapidly advances, higher education is confronting remarkable transformations and challenges. This article aims to delve into the innovative teaching methods and practices in higher education from a new media lens, seeking to enhance educational quality and foster students' comprehensive growth. Leveraging literature reviews and case studies, we conduct an in-depth analysis of how new media technology impacts the teaching modalities, tools, and outcomes in higher education, presenting tailored innovation strategies. Our findings reveal that new media technology can significantly drive educational innovation in universities, elevate teaching effectiveness, and pave new avenues for nurturing students' overall qualities. The dawn of the new media age offers unparalleled opportunities and challenges for higher education innovation. Relentless exploration and innovation are paramount to addressing the educational demands of this new era and cultivating talents brimming with creativity and practical skills.

1. Introduction

As information technology rapidly evolves, new media has emerged as a crucial avenue for information dissemination in contemporary society [1]. The dawn of the new media age has not just altered people's lifestyles but also exerted a profound influence on traditional educational paradigms [2]. Characterized by its distinct interactive, real-time, and personalized features, new media technology offers expanded opportunities for higher education [3].

New media denotes a form of media that facilitates instant dissemination, interaction, and sharing of information via cutting-edge information dissemination technologies like the Internet and mobile Internet [4]. The advent of new media technology has had a significant impact on higher education [5]. This technology not only enriches teaching methodologies and resources, injecting more vividness and interest into the learning process, but also alters traditional teaching modes and teacher-student dynamics, thereby encouraging students to engage more actively in the learning process [6]. However, the utilization of new media technology also poses several challenges, including the effective integration of new media resources and the enhancement of students' information literacy [7]. The aim of this article is to delve into innovative approaches and practices in higher education and teaching from a new media perspective, with the ultimate goal of elevating education quality and fostering the comprehensive development of students.

2. The integration of new media and tertiary education

The utilization of new media technology in higher education is progressively expanding, encompassing areas such as the development of online coursework, remote learning, digital educational repositories, and more [8]. The creation of online courses affords students versatile and varied study options, spanning multiple disciplines and practical applications, thereby enhancing learning outcomes and fostering autonomy. Remote education and online learning allow students to pursue their studies remotely through technological means, minimizing learning costs and time while offering an abundance of educational resources and interactive tools. Digital repositories of teaching resources furnish teachers and students with handy teaching and self-study aids, ultimately boosting teaching efficiency and quality. The adoption of these new media technologies has catalyzed the reform and advancement of higher education.

3. Challenges and opportunities of new media to tertiary education

The emergence of new media technology has presented both prospects and obstacles for higher education.

Obstacles: Conventional classroom teaching strategies have become outdated for modern learners, necessitating educational innovation from instructors. To effectively leverage new media technology, students must enhance their information literacy and capacity for independent learning [9]. Additionally, university administrators must confront the complexities posed by new media technology and devise an appropriate management framework.

Prospects: New media technology offers a wealth of teaching methodologies and resources, injecting vitality and intrigue into the learning process and igniting students' passion for learning. Learners can leverage online educational platforms for self-directed learning, thereby enhancing their learning outcomes. Furthermore, new media technology has facilitated the globalization of higher education, fostering collaborations and exchanges with prestigious international universities.

4. The necessity of innovation in tertiary education and teaching

The historical significance of traditional tertiary education's instructional mode cannot be denied, yet its constraints have become apparent with technological and societal advancements. Rote learning fosters passive knowledge absorption, hindering students' active engagement and reflection, thereby impeding their capacity for independent learning and analytical thinking [10]. Additionally, an overemphasis on theoretical knowledge and disregard for practical applications restricts students' creativity.

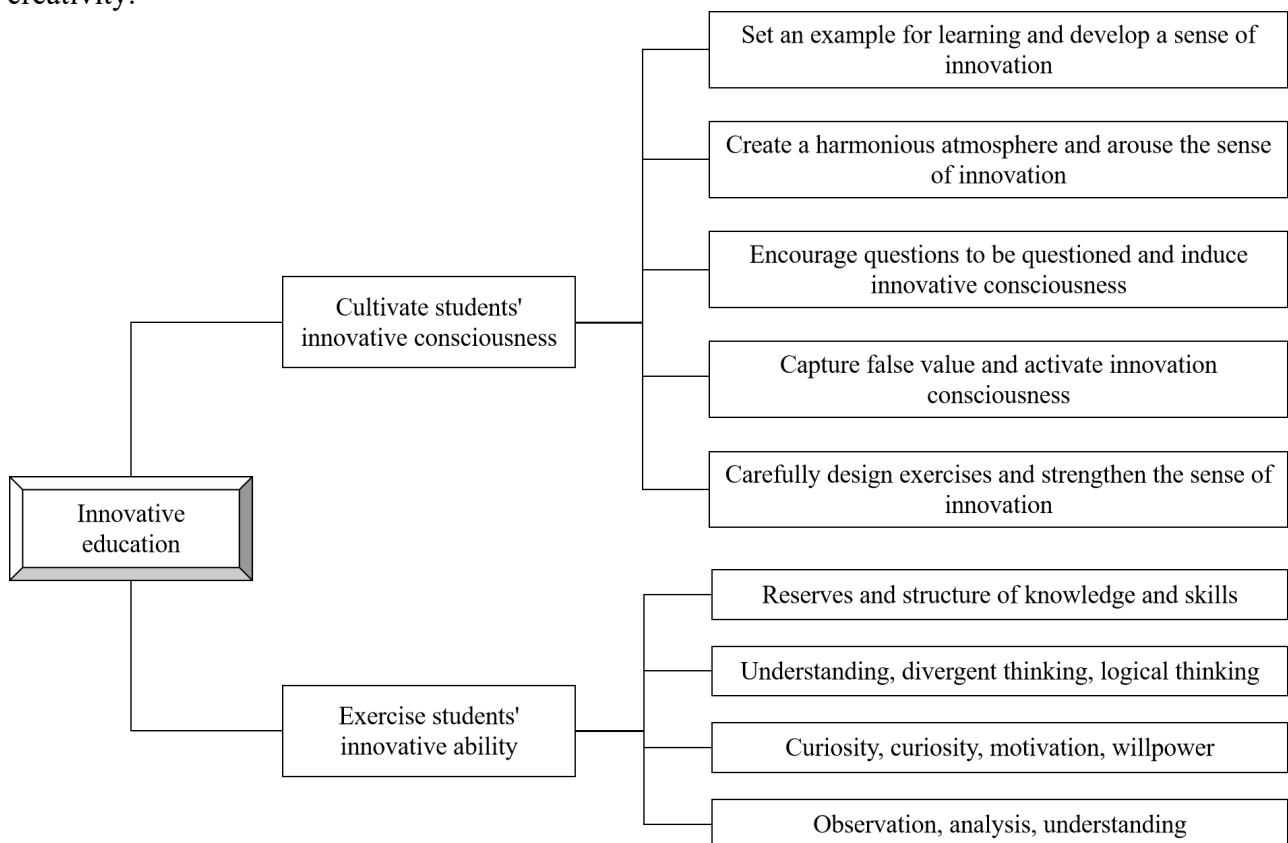


Figure 1 Characteristics of teaching innovation

The advent of the new media age introduces fresh demands on tertiary education. Students crave tailored and varied learning approaches, seeking greater autonomy and choice in their educational journey. Moreover, fostering interdisciplinary and comprehensive skills has gained prominence in light of the intricate and rapidly evolving societal requirements. Consequently, educational innovation has become an imperative. Institutions must liberate themselves from conventional

teaching paradigms, accommodate the learning preferences of contemporary learners, and nurture individuals endowed with a pioneering spirit and hands-on expertise. Such innovation is not solely driven by the need to bolster institutional competitiveness but also represents a necessary step towards sustainable progress. Refer to Figure 1 for an illustration of the hallmarks of pedagogical innovation.

5. Innovative strategies of tertiary education and teaching from the perspective of new media

This section explores innovative tertiary education and teaching strategies from a new media perspective, focusing on three main areas: teaching paradigms, methodologies, and tools.

(1) Evolution of teaching paradigms

In the new media landscape, tertiary education must evolve its teaching paradigms to align with contemporary trends, emphasizing students' centrality and teachers' mentorship.

A student-focused approach demands that educators are attentive to learners' preferences, interests, and capabilities, tailoring instruction to their unique circumstances. This paradigm shift underscores learner autonomy and initiative, inviting active participation, idea generation, and fostering innovation and hands-on skills.

Hybrid learning leverages new media technologies, facilitating anytime, anywhere learning. This mode not only elevates learning efficiency but also enriches the educational experience. By seamlessly integrating online and offline elements, it enables deeper comprehension and mastery, alongside autonomous and collaborative learning opportunities.

(2) Revolutionary Instructional Methodologies

Higher education institutions in the new media age must reinvent their teaching methods to align with evolving student needs and societal progress.

Innovative practices like the flipped classroom and Massive Open Online Courses (MOOCs) are gaining traction. In a flipped classroom, students independently explore via videos and readings before class, reserving class time for interactive discussions and practical applications. This approach ignites students' interest and engagement, enhancing learning outcomes. MOOCs offer vast online resources, providing flexible, location-independent learning, and expanding educational opportunities and choices.

Project-based and problem-solving methodologies cultivate practical, innovative, and collaborative skills. Problem-based learning centers around real-world challenges, guiding students to acquire knowledge and skills through problem-solving. This method sharpens critical thinking, analysis, and problem-solving abilities.

(3) Instructional method innovation

Innovating teaching methods plays a crucial role in educational advancement at universities. Incorporating new media instruments to aid instruction and leveraging virtual and augmented reality technologies mark significant avenues for teaching innovation.

Leveraging New Media in Teaching: These modern tools offer fresh support for higher education. Educators can disseminate course details and study materials via these platforms, enabling independent learning for students. Moreover, they facilitate online Q&A sessions, discussions, and other interactive activities, bolstering student-teacher communication. Their implementation not only elevates teaching efficacy and quality but also expands learning options and convenience for students.

Embracing Virtual and Augmented Reality: With virtual reality, learners can immerse themselves in various scenarios and procedures, elevating their learning outcomes and practical skills. Augmented reality merges virtual data with the real world, enriching learning resources and interactive methods for students. Deploying these technologies ignites students' learning passion and brings forth new educational possibilities in tertiary education.

6. Practical cases of teaching innovation in universities

6.1. Case analysis

With the in-depth application of new media technology, some universities have made positive innovation attempts in education and teaching. The following are several typical cases.

Case 1: Illustrating classroom innovation through new media at a university.

Over the past few years, a renowned university has been actively pushing for the "smart classroom" initiative. This approach involves educators utilizing cutting-edge new media tools, such as interactive tablets and smart teaching software, to boost classroom engagement. Learners can now take part in real-time Q&A sessions, group discussions, and other interactive activities using their mobile devices. Educators have the flexibility to modify their teaching content and pace based on students' instant feedback. Moreover, to facilitate independent learning, the institution has amassed a comprehensive teaching resource library for post-class study.

Case 2: Demonstrating the integration of online courses with hands-on practice.

A different institution experimented with a blended "online-offline" teaching model. They've crafted a range of online open courses, giving students the freedom to learn at their convenience, anywhere, anytime. Additionally, this university emphasizes the significance of offline practical training, regularly arranging field visits, experiments, and other hands-on activities for its students. This teaching methodology not only elevates learning efficiency but also significantly boosts students' practical skills.

6.2. Effect evaluation

6.2.1. Quantitative and qualitative evaluation of teaching effect

In order to comprehensively evaluate the effect of teaching innovation, it is needed to comprehensively consider both quantitative and qualitative aspects.

(1) Comparative analysis of students' academic performance

By comparing the students' academic achievements before and after the implementation of teaching innovation, we can intuitively reflect the influence of innovative measures on students' academic level. This article collects and compares the average score, passing rate and excellent rate before and after innovation, so as to quantify the effectiveness of teaching innovation, as shown in Table 1.

Table 1 A detailed comparison of students' academic performance before and after teaching innovation

Evaluation period	Evaluation index	Numerical value
Before teaching innovation	Average score	75.3
	Pass rate	85%
	Excellent rate	15%
After teaching innovation	Average score	82.6
	Pass rate	93%
	Excellent rate	27%

Change analysis:

Average score increased: from 75.3 points to 82.6 points, an increase of 7.3 points.

Pass rate increased: from 85% to 93%, an increase of 8 percentage points.

Excellent rate increased: from 15% to 27%, an increase of 12 percentage points.

By comparing the data before and after teaching innovation, we can clearly see the positive impact of teaching innovation on students' academic level. The average score, passing rate and excellent rate have all improved significantly, which fully proves the effectiveness of teaching innovation.

(2) Student satisfaction survey

In addition to academic performance, students' satisfaction is also an important indicator to evaluate the teaching effect. This article collects students' views and feelings about teaching innovation through questionnaires and interviews, and understands their satisfaction with teaching

content, instructional methods and teacher-student interaction. This qualitative evaluation method can reflect the actual effect of teaching innovation and the real needs of students more comprehensively. The results are shown in Table 2.

Table 2 Investigation results of students' satisfaction with teaching innovation

Evaluation dimension	Very satisfied (%)	Satisfied (%)	General (%)	Not satisfied (%)
Content of courses	40	35	20	5
Instructional method	35	40	20	5
Teacher-student interaction	30	45	20	5
Overall effect	38	37	20	5

This survey collected data through questionnaires and interviews, and surveyed 105 students. The percentage in the table indicates the distribution of students' satisfaction with each evaluation dimension. From the survey results, we can see that most students are satisfied or very satisfied with the teaching content, instructional methods, teacher-student interaction and the overall effect, but some students are not satisfied. These data provide us with valuable feedback, so as to further optimize the teaching innovation strategy and meet the real needs of students.

6.2.2. Quantitative and qualitative evaluation of teaching effect

(1) The enduring consequences of pedagogical reinvention

Pedagogical reinvention not only shapes students' immediate learning outcomes but also casts a profound influence on their long-term progress and the transformation of higher education paradigms.

(2) Impact on elevating students' overall proficiency.

Pedagogical reinvention frequently emphasizes fostering students' hands-on skills, innovative cognition, and collaborative abilities. Enhancing these proficiencies positively affects students' overall aptitudes. Extended teaching experiences reveal evident growth in these areas, affirming the effectiveness of educational reinvention.

(3) Advancing the evolution of higher education frameworks.

Successful educational reinventions not only bolster students' capabilities but also offer valuable insights for reforming higher education models. By consolidating and disseminating these innovations, the entire tertiary education system can evolve to be more progressive and aligned with student needs. This sustained advancement holds immense significance in elevating the standard of higher education and nurturing exceptional talents.

7. Conclusions

New media technology offers a robust impetus and expansive platform for tertiary education and teaching innovation. By harnessing new media, universities gain flexibility in integrating resources, fulfilling personalized and diverse teaching needs. This technology not only enhances instructional methods but also catalyzes a shift in teaching paradigm, better embodying the student-centered approach. Moreover, new media's interactive and real-time nature has vastly boosted students' engagement and interest in learning. Universities have achieved notable progress in teaching innovation, thanks to new media technology, thereby elevating teaching quality and student learning outcomes. Nevertheless, innovation practice has its flaws. Some educators lack proficiency in new media technology, limiting its teaching efficacy. Additionally, unbalanced teaching resource allocation in some universities hinders teaching innovation's further advancement. As new media technology continues to evolve and become more widespread, future tertiary education and teaching innovations will increasingly emphasize fostering interdisciplinary and comprehensive skills.

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