Effectiveness, Challenges, and Innovative Pathways of Digital Teaching in College Ideological and Political Courses

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Abstract. In the era of digitalization, ideological and political education in higher education institutions faces unique challenges and opportunities. This study investigates the current status, effectiveness, and influencing factors of digital teaching methods in ideological and political courses. Through a questionnaire survey of 100 teachers from various universities, the research employs descriptive statistics, correlation analysis, and multi-dimensional effect assessment to comprehensively explore the implementation of digital teaching in ideological and political education. The findings reveal that digital teaching has a positive impact on learning outcomes, student motivation, and critical thinking skills. However, teaching effectiveness and practicality still have room for improvement. The study identifies increased workload and lack of equipment as the main challenges faced by teachers. Interestingly, teaching experience shows no significant correlation with the effectiveness of digital teaching methods. This research provides empirical evidence and practical guidance for the digital transformation of ideological and political education. It also offers valuable insights for education administrators, teachers, and technology developers, contributing to the enhancement of teaching quality and effectiveness in this field.

Keywords: Great Spirit of Party Founding, Virtual Reality, Party Building Education, Educational Innovation.

1   Introduction

Against the backdrop of the 20th National Congress of the Communist Party of China emphasizing the promotion of educational digitalization and the construction of a learning society, ideological and political education, as a key component in cultivating students' comprehensive qualities, faces limitations in traditional teaching methods. This study, through a questionnaire survey of 100 college teachers of ideological and political courses, employs various statistical methods to comprehensively explore the

current status, effectiveness, and influencing factors of digital teaching in ideological and political courses. It aims to provide important references for education administrators, teachers, and technology developers, promote the digital transformation of ideological and political courses and other humanities and social science disciplines, respond to the strategic requirements of the CPC Central Committee for educational digitalization, and contribute to the construction of a strong education system.

2   Literature Review

With the rapid development of information technology, digital teaching has become an important means to enhance the quality of ideological and political education and improve students' learning experiences. Traditional ideological and political courses have limitations in teaching methods and forms, making it difficult to meet the diverse and personalized learning needs of students in the new era. Digital teaching, by introducing advanced technologies such as big data, artificial intelligence, and virtual reality, not only enriches teaching content and forms but also increases student engagement and interaction, making ideological and political education more relevant to real life.

McLaren P point out that the indoctrination component of traditional ideological and political courses urgently needs to achieve a transformative change towards precision, openness, visibility, and perceptibility, while digitalization provides new opportunities for ideological and political courses to become vivid, immersive, and truly "alive"[1]. Lu Manli.(2024) further demonstrate that the use of digital tools can significantly enhance students' learning interest and engagement[2].However, Zhang Hai(2024) raises an important warning, pointing out that over-reliance on technology may lead to the dehumanization of education, emphasizing the importance of maintaining humanistic care in digital transformation[3]. These studies provide an important theoretical foundation for understanding the widespread application and potential impact of digital teaching in higher education.

In the field of ideological and political education, although research on digital teaching is relatively scarce, it has shown an increasing trend in recent years.Khalid J, Ram B R, Soliman M, et al (2018) points out that digital tools can help ideological and political courses better connect with students' daily lives, enhancing the timeliness and attractiveness of teaching[4] .Zhang Li (2016) survey research also reveals the challenges faced by ideological and political course teachers in applying digital technology, such as lack of skills and resources[5]. This finding highlights the practical problems that need to be solved in promoting the digitalization of ideological and political education.

Regarding the evaluation of digital teaching effectiveness, there is still controversy in academia. Chang Shimeng (2021) meta-analysis suggests that online and blended learning may be superior to traditional face-to-face teaching in some aspects[6]. However, Bai Zhonggan(2003) criticizes overly simplified comparative studies, calling for more complex, multi-dimensional evaluation methods[7]. This view has also received response in the field of ideological and political education. Zhu Yuanyuan

(2023) proposes an evaluation framework that includes dimensions such as knowledge transmission, value guidance, and ability cultivation, providing a theoretical basis for a comprehensive evaluation of the effectiveness of digitalized ideological and political education[8]. These studies collectively point out the complexity and multi-dimensionality that need to be considered when evaluating the effectiveness of digital teaching.

Despite existing research providing valuable insights into the application of digital teaching in higher education and ideological and political education, there are still obvious research gaps: the lack of large-scale empirical studies on digital teaching in ideological and political courses in the Chinese context, existing studies being mostly limited to single-dimensional effect evaluation, and insufficient in-depth discussion on the relationship between the degree of digitalization and teaching effectiveness. This study aims to fill these gaps through mixed research methods and multi-dimensional analysis, providing comprehensive insights into the implementation status, effectiveness, and influencing factors of digital teaching in ideological and political courses. The research results are expected to provide references for innovative pathways of ideological and political courses and digital teaching, while also offering insights for the application of digital teaching in other humanities and social science disciplines. This will not only help promote the modernization of ideological and political education and improve the quality of talent cultivation, but also lay the foundation for constructing an all-round education pattern. With the continuous advancement and in-depth application of technology, the integration and innovation of ideological and political courses and digital teaching will become more extensive and profound, further promoting the formation of an all-staff, whole-process, and all-course education pattern.

3   Methodology

This study employs a questionnaire survey method for data collection and analysis. A detailed questionnaire containing 29 questions was carefully designed and distributed to 100 ideological and political course teachers from different universities, with 50 primarily using digital teaching methods and 50 mainly using traditional teaching methods. This balanced sample design aims to ensure the reliability of comparative analysis. The questionnaire covers various aspects including teacher background information, teaching practices, teaching effectiveness evaluation, use of digital tools, challenges encountered, and views on future development. To ensure the validity and reliability of the questionnaire, a small-scale pre-test was conducted before formal distribution, with necessary adjustments made based on feedback.

Based on the large amount of data collected, multiple statistical analysis methods were applied to comprehensively assess the implementation, effectiveness, and influencing factors of digital teaching in college ideological and political courses. First, descriptive statistical analysis was used to summarize the basic characteristics of the sample, including the age distribution, teaching experience distribution, and school

type distribution of teachers. This provided a foundation for subsequent in-depth analysis.

To explore factors influencing the implementation and effectiveness of digital teaching, multiple correlation analyses were conducted. The relationship between teaching experience and frequency of digital tool use, as well as the relationship between school type and digital teaching effectiveness, were analyzed through chi-square tests, using the formula $\chi^2 = \Sigma [(O - E)^2 / E]$, where O represents observed values and E represents expected values. For continuous variables, such as the relationship between the number of training sessions teachers received and digital teaching effectiveness, Pearson's correlation coefficient was used, calculated by the formula:$r = \Sigma((X - \bar{X})(Y - \bar{Y})) / \sqrt{(\Sigma(X - \bar{X})^2 \Sigma(Y - \bar{Y})^2)}$.where X and Y represent two variables, and $\bar{X}$ and $\bar{Y}$ are their mean values.To comprehensively assess the impact of digital teaching, a multi-dimensional effectiveness evaluation was performed. Five key dimensions were selected for in-depth analysis: knowledge transmission effectiveness, student engagement, critical thinking cultivation, practicality enhancement, and personalized teaching. In addition to calculating the average scores for each dimension, standard deviations were also calculated to reflect the consistency of teacher evaluations. Furthermore, one-way analysis of variance (ANOVA) was used to compare differences in these dimensions among different groups (such as different teaching experience groups, different school types).

Teaching process change analysis was conducted to fully understand the impact of digitalization on various aspects including lesson preparation, teaching, classroom interaction, assignment distribution and grading, teaching feedback, and evaluation. Paired t-tests were used to compare changes in time investment and perceived effectiveness in these aspects before and after adopting digital teaching, calculated using the formula:$t = (\bar{X}d) / (sd / \sqrt{n})$.where $\bar{X}d$ is the mean of the differences, sd is the standard deviation of the differences, and n is the sample size.

The use of digital tools was also analyzed in depth. In addition to calculating the frequency of use for each tool, multiple regression analysis was used to explore the impact of the degree of use of different tools on teaching effectiveness. The general form of the regression model is:$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + ... + \beta_n X_n + \varepsilon$.where Y is teaching effectiveness, X_1, X_2, ..., X_n are the degrees of use of different digital tools, β_0, β_1, β_2, ..., β_n are regression coefficients, and ε is the error term.

To gain a deeper understanding of the challenges and opportunities encountered by teachers in digital teaching, thematic coding and content analysis were conducted on the answers to open-ended questions. This mixed method approach combines quantitative data with qualitative information, providing a more comprehensive research perspective.

Through these comprehensive analyses, this study thoroughly examined multiple aspects of digital teaching in college ideological and political courses, providing important data and theoretical support for advancing teaching reform. Although the sample size has increased, caution is still needed when generalizing the research results. Future research could consider adopting longitudinal designs, combining classroom observation and student performance analysis, to more comprehensively assess the long-term impact and practical effectiveness of digital teaching.

4   Results

Table 1 shows the descriptive statistical results of key variables in the study.

Table 1. Descriptive Statistics of Key Variables

Variable	Mean	Std Dev	Min	Max	Mdn
Teaching Effectiveness	2.080	1.122	1	4	2
Student Motivation	2.440	1.091	1	4	2
Learning Effectiveness	2.660	1.081	1	4	3
Critical Thinking	2.580	1.214	1	4	3
Practicality	2.500	1.129	1	4	3

The data shows that the perceived effectiveness of digital teaching in various aspects is at a medium to high level. Among them, learning effectiveness scored the highest (M = 2.660, SD = 1.081), while teaching effectiveness scored the lowest (M = 2.080, SD = 1.122). This result may reflect that teachers still face challenges in adapting to and effectively implementing digital teaching methods, but students' learning outcomes are relatively good. It is worth noting that except for teaching effectiveness, the median of other variables is 3, indicating that most respondents hold a relatively positive attitude towards these aspects.

The study found that online platforms are the most frequently used digital tools (54.0%), followed by multimedia tools (52.0%). The usage rate of big data applications is 44.0%, while the adoption rate of virtual and augmented reality (VR/AR) tools is the lowest (38.0%). These results indicate that although basic digital tools have been widely adopted, there is still great potential for development in the application of advanced technologies. The data shows that there is still great potential for the application of digital tools in ideological and political education.
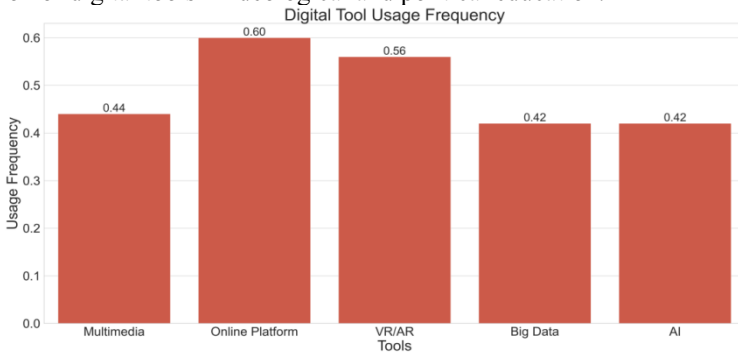

Fig. 1. Digital Tool Usage Frequency

As shown in figure 1. Analysis results show that increased workload is the most significant challenge (25.8%), followed by lack of equipment (20.5%). Lack of resources (18.9%) and insufficient skills (18.2%) follow closely, indicating that teachers still need more support in digital teaching resources and related skills. It is worth noting that low student acceptance (16.7%) is the least reported challenge, suggesting

that students generally hold a positive attitude towards digital teaching methods. These results emphasize the need to comprehensively consider teachers' workload, hardware facilities, teaching resources, and skill training in promoting digital teaching.

The assessment results show that learning effectiveness scored the highest, followed by student motivation and critical thinking. This indicates that digital teaching methods have a significant positive impact on students' learning outcomes, learning enthusiasm, and thinking ability development. However, teaching effectiveness and practicality scored relatively low, which may reflect that there are still challenges in effectively integrating digital methods into daily teaching practices. This multi-dimensional assessment result provides a clear visual presentation of the advantages and disadvantages of digital teaching, helping educators and policy makers to improve digital teaching strategies more targetedly.
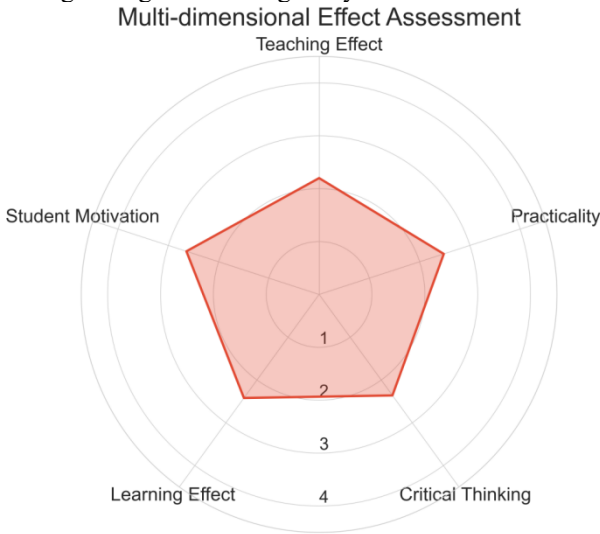

Fig. 2. Multi-dimensional Effectiveness Assessment

As shown in figure 2. The scatter plot reveals a complex non-linear relationship. At low levels of digitalization (0-1) and high levels of digitalization (4-5), teaching effectiveness shows greater variability. At medium levels of digitalization (2-3), most teaching effectiveness is concentrated at medium levels. This complex relationship suggests that simply increasing the use of digital tools does not guarantee improvement in teaching effectiveness. Teaching effectiveness may be influenced by multiple factors such as teachers' digital skills, instructional design, and student characteristics. This finding emphasizes the need for a more comprehensive and personalized approach when promoting digital teaching.

To gain a deeper understanding of the factors influencing digital teaching, the following statistical analyses were conducted:

Chi-square test of independence: The result ($\chi^2 = 12.861$, $p = 0.169$) indicates no significant association between teaching experience and frequency of digital tool use.

This means that regardless of the length of teaching experience, there is no significant difference in the frequency of digital tool use among teachers.One-way analysis of variance (ANOVA): The analysis results show that teaching experience has no significant impact on teaching effectiveness [$F(3, 46) = 1.071$, $p = 0.371$]. This suggests that the effectiveness of digital teaching methods is not significantly affected by the educator's years of teaching experience.

These statistical analysis results challenge some common assumptions, such as younger teachers may be more inclined to use digital tools, or experienced teachers may be more effective in digital teaching. In fact, the data suggests that the success of digital teaching may depend more on individual adaptability and continuous learning, rather than simple factors of age or teaching experience.

5 Conclusion

The study, through comprehensive surveys and in-depth analysis, reveals the current state, effects, and influencing factors of digitalized teaching in ideological and political education courses in universities. The research finds that digitalized teaching has shown positive impacts in ideological and political education, especially in improving learning outcomes, student motivation, and critical thinking. However, there is still room for improvement in teaching effectiveness and practicality. The widespread application of online platforms and multimedia tools has significantly enhanced the interactivity and attractiveness of the courses, while the use of big data shows great potential in personalized learning and precision teaching. Although the adoption rate of virtual and augmented reality (VR/AR) tools is relatively low, their effects in creating immersive learning experiences are remarkable. The study also unveils the challenges faced by digitalized teaching, including increased workload for teachers, lack of equipment, and insufficient resources. It is noteworthy that there is no significant correlation between teaching experience and the effectiveness of digitalized teaching, emphasizing the importance of teachers' adaptability and continuous learning. In terms of teaching effectiveness, digitalized methods have the most significant impact on improving learning outcomes and critical thinking, but challenges remain in effectively integrating digital technologies into teaching practices.

These findings provide important empirical evidence and practical guidance for advancing the digital transformation of ideological and political education courses. Future research directions should include adopting longitudinal designs, combining student feedback and objective evaluation indicators to comprehensively assess the long-term effects of digitalized teaching. At the same time, there is a need to explore how to effectively integrate advanced digital technologies to enhance the practicality and effectiveness of ideological and political education, including utilizing artificial intelligence technologies to personalize learning paths, optimizing course content and teaching strategies through big data analysis, and designing more effective blended learning models. Furthermore, exploring the long-term impact of digitalized teaching on students' value formation and cultivation of social responsibility, as well as how to maintain a humanistic approach while promoting digitalization, are also important

issues that future research needs to delve into. These efforts will contribute to further optimizing the digitalized teaching practices of ideological and political education courses, improving education quality and effectiveness, and cultivating well-rounded builders and successors of the socialist cause.

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