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RESEARCH ARTICLE

Impact of Online Media on Learning Motivation and Learning Performance: The Mediating Role of Learning Participation

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ABSTRACT

Based on the development of network technology, this paper studies the relationship between online media teaching and learning motivation, learning participation and learning performance. In this study, the "online media + classroom teaching model" was constructed and the teaching practice was carried out for 8 weeks. Before and after the teaching task, the students in the experimental group and the control group were measured by learning motivation scale, learning participation scale and learning performance scale. At the same time, the structural equation model was used to explore the mechanism of the influence of online media on students' learning performance. In this study, SmartPLS 4 was used to test the convergence validity, differential validity and hypothesis. The results show that online media teaching positively influences learning motivation; Learning motivation and learning participation have positive effects on students' learning performance. Learning motivation not only directly affects students' learning performance, but also indirectly affects students' learning performance through learning participation, which is an important mediating variable of online media's effect on learning performance. Therefore, stimulating college students' learning motivation from online media tools is of great significance for improving students' learning participation and performance.

1. INTRODUCTION

The Report of the 20th National Congress of the Communist Party of China emphasizes the great and arduous task of comprehensively building a modern socialist country, of which the modernization of education, as an important component, plays a key role in promoting the modernization of the Chinese style("Holding High the Great Banner of Socialism with Chinese Characteristics and Striving Together to Build a Modern Socialist Country in an All-round Way -- Report at the 20th National Congress of the Communist Party of China," 2023). In July 2024, the Third Plenary Session of the 20th CPC Central Committee further deployed measures to comprehensively deepen reform and promote Chinese-style modernization, with special emphasis on the importance of deepening the comprehensive reform of education (Jiang et al., 2024). As an important part of educational modernization, vocational education has been attached great importance by the Chinese government and has been rapidly developed through a series of policies and measures(Chen, 2024). China has long been aware of the necessity of the integration of the Internet and education, and has driven the modernization of education through education informatization, promoted the innovation and reform of classroom teaching methods, and become a major strategic choice to accelerate the transformation from a major education country to a powerful education country("The guiding opinions of The State Council on actively promoting the "Internet Plus" action," 2015). Therefore, the application of information technology in the classroom teaching of higher vocational colleges to achieve the organic

combination of computer teaching, multimedia teaching, network teaching and classroom teaching is not only the concrete embodiment of modern education reform, but also an important goal of China's modern education. As the basic form of vocational education, the quality of classroom teaching is directly related to the quality of talent training. Learning motivation and learning participation are important factors that affect learning performance (Filgona et al., 2020).

Online media teaching is a new teaching mode developed under the information age and new teaching concepts. In the online media teaching system, students can preview the course content in advance, and review the teaching materials repeatedly after class, which saves a lot of redundant information in the teaching resources, and it only takes a little time to master the key knowledge and is not limited by time and place. Using networks to complete fragmented learning (Burbules et al., 2020).

In recent years, China's major higher vocational colleges have continued to accelerate the pace of information construction, and continue to explore effective ways to combine online media with classroom teaching in information technology (Wang & Zhang, 2020). At present, all higher vocational colleges in China have basically achieved full coverage of information technology and network, but how to better apply online media to classroom teaching to effectively improve teaching quality still needs further research. Under the full coverage of information technology and network, education and teaching workers are thinking more about how to give full play to the teaching advantages of online media, carry out online media teaching, and improve teaching efficiency. Under the advocacy of student-learning-centered education and teaching concept, students' learning performance is an important indicator to measure learning effectiveness (Huang & Shi, 2024) . So, does online media improve students' learning motivation and performance? It is necessary to clearly understand the relationship between online media and learning motivation, learning participation, and learning performance, which is important to improve the classroom teaching effect in higher vocational colleges. To expand the research data, this study will collect empirical data to assess the relationship between online media and learning motivation, learning participation, and learning performance.

2. LITERATURE REVIEW

2.1. Online media

Online media serve as instruments in the educational process, encompassing any resources that can engage students' thoughts, emotions, focus, and skills to promote learning. Additionally, these tools can enhance teachers' effectiveness in instruction by improving their understanding of media when delivering content and facilitating easier learning for students, particularly in reaching educational objectives (Prabawati et al., 2021). Online media instruction involves utilizing digital tools to offer students prompt and accessible assistance and direction. Educators can employ a guidance section to aid learners in addressing various challenges faced during their studies, fostering a user-friendly online learning atmosphere. This approach ensures that students receive timely, precise, and comprehensive support for their self-directed learning efforts, ultimately assisting them in overcoming obstacles and successfully reaching their educational goals (Sofi-Karim et al., 2023) .In the context of online media education, instructors take on a leadership role, learners are the focal point, and digital resources serve as supplementary tools (Dai, 2021) . Digital teaching resources for online media are essential in information-driven educational activities and are increasingly being embraced and utilized. At present, the main online media teaching tool in China is XueXiTong(XXT), so this study chooses XXT as an online media tool.

2.2. Learning motivation

"Motivation for learning serves as the internal impetus that actively encourages students to engage in their educational activities, acting as the foundation for behaviors that facilitate their learning (Filgona et al., 2020). " Motivation for learning serves as the driving force behind the educational process; it is a dynamic mechanism that initiates, sustains, and concludes learning activities. The impact of this motivation on both the engagement in learning tasks and the outcomes achieved can either hinder or enhance one's desire to learn (Reeve, 2024) .

2.3. Learning participation

"Learning participation encompasses the active engagement of students in classroom activities, including their attitudes, interests, and values related to learning. This includes behaviors such as speaking, asking questions, and providing answers. It plays a crucial role in the learning process of students and serves as a key indicator for assessing their educational outcomes (Lagmay & Rodrigo, 2022)." This study will use three types of engagement (behavioral, emotional, and cognitive) (Fredricks et al., 2004).

2.4. Learning performance

Learning performance refers to the quantifiable outcomes and improvements attained by learners within particular time frames and contextual settings. It reflects students' academic success and capabilities across various educational environments, making it a crucial aspect of the learning process. It is essential for educators, policymakers, and researchers to comprehend the elements that affect student achievement (Lee & Kwon, 2022).

2.5. Online media Influence learning motivation

Research indicates that in an online media-supported environment, both learning and teaching approaches can be tailored to accommodate students' individual needs, interests, prior knowledge, hobbies, and preferred learning styles. This adaptability positively influences motivation for learning and enhances academic performance across various age groups and subjects (Bajaber, 2024). Some students have discovered in their educational experiences that utilizing online media for learning not only enhances flexibility but also boosts the efficiency of accessing knowledge resources. This improvement is attributed to the sophisticated search functions available on online platforms, which employ algorithms to swiftly identify and filter specific information relevant to learners' interests or needs, unlike the traditional classroom's sequential learning approach. By selecting content according to their individual pace and areas of interest, students can make their learning journey more personalized and effective (Zhang & Romero-Forteza, 2024).

Based on the previous research, we proposed the following hypothesis:

H1: Online media significantly influences students' learning motivation.

2.6. Learning motivation influence learning participation

Scholars have established a connection between motivation for learning and engagement in educational activities. Research indicates that there is a positive correlation between students' interest levels and their involvement in classroom tasks. When learners recognize that the activities they are engaged in hold value or are enjoyable, they are more likely to take part actively (Ainley, 2012). The study on the connection between students' psychological capital and their engagement in learning reveals that the key element for boosting student participation is their motivation to learn, along with the factors influencing it (Khamis et al., 2008). Learners need to maintain a high level of motivation if they want to maintain a high level of learning participation(Filgona et al., 2020).

Based on the previous research, we proposed the following hypothesis:

H2: Learning motivation significantly influences learning participation in online media teaching.

2.7. Learning motivation influence learning performance

Descriptive statistical methods are employed to investigate the existing conditions of learning pressure and motivation, as well as their relationship with academic performance. The study reveals that students experience optimal levels of learning motivation and performance when their pressure is moderate; however, no significant link is found between learning pressure, motivation, and performance (Tus, 2020). Robbi and colleagues reached a different conclusion. Their study involved 224 high school students in Indonesia, focusing on the relationship between learning motivation and academic performance. They discovered that the students exhibited a moderate level of learning motivation, which significantly influenced their academic outcomes. Higher levels of motivation were associated with improved academic achievement (Robbi et al., 2020) .

Based on the previous research, we proposed the following hypothesis:

H3: Learning motivation significantly influences learning performance in online media teaching.

2.8. Learning participation influence learning performance

If students can actively participate in various activities in the classroom, they can obtain good academic results (Astin, 2014) . Yu et al., took 400 undergraduates from Tianjin University as research objects and concluded that learning participation has a direct and significant positive impact on academic performance (Yu et al., 2018) . Wang took undergraduate students as the research object to discuss the impact of learning participation and positive emotion on academic performance, and the results showed that learning participation had a significant positive impact on academic performance, and positive emotional involvement also had a significant positive impact on academic performance (Wang et al., 2023).

Based on the previous research, we proposed the following hypothesis:

H4: Learning participation significantly influences learning performance in online media teaching.

2.9. Learning motivation affects learning performance through learning participation

In recent years, many studies at home and abroad have shown that there is a mediating effect between learning motivation and learning performance. Wu et al., mainly investigated the relationship among the four variables of learning motivation, learning participation, self-efficacy and academic performance of medical students by using SEM analysis, and found that self-efficacy and learning participation played an intermediary role between students' learning motivation and academic performance, and found that male students had higher intrinsic motivation, but their academic performance was far lower than that of female students (Wu et al., 2020). In addition, they found that intrinsic motivation had a much greater overall impact on academic performance than extrinsic motivation. Both intrinsic motivation and extrinsic motivation have significant indirect effects on academic achievement through learning participation. Huang & Yang took undergraduates from Z University of China as research objects and found that students' learning motivation has a significant positive impact on learning performance, and verified that learning participation plays a partial mediating role between learning motivation and learning performance through bias correction method (Huang & Yang, 2021).

Based on the previous research, we proposed the following hypothesis:

H5: Learning motivation influences learning performance with mediating role of learning participation in online media teaching.

2.10. Learning motivation affects learning performance through learning participation

According to the literature review, the relationship among online media, learning motivation and learning participation is sorted out, and the research hypothesis is as follows:

H1: Online media significantly influences students' learning motivation.

H2: Learning motivation significantly influences learning participation in online media teaching.

H3: Learning motivation significantly influences learning performance in online media teaching.

H4: Learning participation significantly influences learning performance in online media teaching.

H5: Learning motivation influences learning performance with mediating role of learning participation in online media teaching.

The hypothetical model of this study is shown in Figure 1.

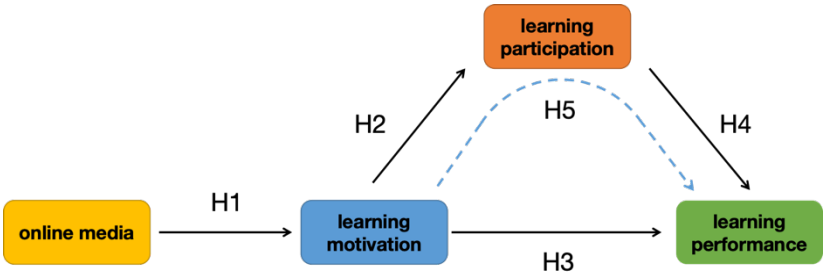

Figure 1: Conceptual research model

3. METHODOLOGY

This study is based on a quasi-experimental design of a comparative teaching experiment. This is an empirical intervention study. The experimental and control groups were pre-test and post-test with a simple questionnaire, and the causal effects of the intervention were investigated (Thomas, 2021). The researchers selected 35 students as the experimental group (use online media teaching method) and 35 students as the control group (use traditional teaching method). The course lasted for 8 weeks. After the 8-week course, the control group and the experimental group were measured by learning motivation, learning participation, and learning performance scales. The Learning Motivation Scale, adapted from Keller (2010), sets questions based on four ARCS dimensions, namely attention, relevance, confidence, and satisfaction. It consists of 12 items (Keller, 2010). The Learning Participation Scale is adapted from Lung-Guang (2019). It sets questions based on behavioral engagement, emotional engagement and cognitive engagement, and contains 10 items (Lung-Guang, 2019). Learning Performance Scale adapted from Jiang (2022). The questions are set according to two aspects of learning ability and learning results, including 10 items (Jiang, 2022).

The three-structure questionnaire uses Likert scale to collect data because it has high reliability. Not only that, Likert scales are widely used in studies, allowing researchers to collect data that gives them insight into respondents' opinions. These data are also quantitative and can be easily analyzed statistically (Alwaqdani, 2024). Researchers used strong agreement (SA), agreement (A), neutral (N), disagreement (D), and strong disagreement (SD). In this study, respondents were only asked to label the number of choices based on a score from 1 to 5. The highest Likert scale is 5, which indicates strong agreement (SA) with the statement of the problem, followed by the descending order of the scores.

4. DATA ANALYSIS

4.1. Influence of online media on learning motivation

In this study, 70 students from the third-year study of Modern Property Management received a questionnaire to test learning motivation, learning participation, and learning performance on the teaching method. The students are divided equally into control and experimental groups.

Table 1: Kolmogorov and Shapiro normality tests

	Group	Kolmogorov-Smirnova			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
Pre-test (LMO)	Exp.	0.086	35	.200*	0.968	35	0.394
	Con.	0.114	35	.200*	0.934	35	0.038
Post-test (LMO)	Exp.	0.108	35	.200*	0.965	35	0.315
	Con.	0.124	35	0.192	0.957	35	0.192

LMO= Learning motivation, Exp.= Experimental group, Con.= Control group

Table 1 shows the Shapiro-Wilk (S-W) normality test for the results of this study. The results of S-W showed that in the pre-test, the experimental group ($p = 0.394$, $p > 0.05$), the data met normality, in control group ($p = 0.038$, $p < 0.05$), the data did not meet the normality; In the post-test, the experimental group ($p = 0.192$, $p > 0.05$), the data met normality, in the control group ($p = 0.192$, $p > 0.05$), the data met the normality.

In order to test whether there is a significant difference between the two groups of samples, when the data is normally distributed, the difference between the two groups of samples is tested by parameter test and independent sample t test. If the data is not normally distributed, the difference between the two groups of samples is tested by non-parametric test, and the independent sample t test is replaced by Mann-Whitney U test(Boslaugh & Watters, 2008). In the pre-test, the learning motivation of the experimental group and the control group did not meet the normal distribution, and Mann-Whitney U test was used. In the post-test, the learning motivation of the experimental group and the control group was normally distributed, so the independent sample t test was used.

The learning motivation results of the experimental group and the control group in the pre-test are shown in Table 2 and Table 3.

Table 2: Comparison of mean scores for learning motivation in pre-intervention

		N	Mean	Std. Deviation	Std. Error Mean
LMO	Exp.	35	2.15	0.401	0.068
	Con.	35	2.18	0.63	0.107

The mean of learning motivation in the pre-test was almost the same in both groups. The experimental group scored an average of 2.15, while the control group scored an average of 2.18.

Table 3: Mann-Whitney U Test of LMO in pre-test

	LMO
Mann-Whitney U	562
Wilcoxon W	1192
Z	-0.594
Asymp. Sig. (2-tailed)	0.552

a. Grouping variable: group

At the commonly used significance level α=0.05, the difference between the experimental and control groups was statistically significant. Specifically, the p-value is the probability of testing the hypothesis, and when the p-value is less than 0.05, we reject the null hypothesis (i.e. the hypothesis that there is no difference between the two groups), arguing that there is indeed a difference between the experimental and control groups (Thaçi & Sopi, 2022). Table 3 shows that p=0.552, p>0.05, indicating that there was no significant difference in the performance of LMO variables between the experimental group and the control group.

In the post-test, the learning motivation results of the experimental group and the control group are shown in Table 4 and Table 5.

Table 4: Comparison of mean scores for LMO in post-test

		N	Mean	Std. Deviation	Std. Error Mean
LMO	**Exp.**	35	3.5595	0.77559	0.1311
	Con.	35	2.4286	0.94089	0.15904

Table 4 explains the students' average score on learning motivation after the intervention. The average score of the experimental group (mean = 3.5596, SD = 0.77559) was higher than that of the control group (mean = 2.4286, SD = 0.94089).

Table 5: Independent samples test of LMO in post-test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	MD	std.error	95% CI	
									Lower	Upper
LMO	EVA	1.69	0.198	5.487	68	.000	1.13095	0.20611	0.71967	1.54223
	EVNA			5.487	65.611	.000	1.13095	0.20611	0.7194	1.5425

LMO=Learning motivation

Table 5 shows that the significance value (Sig.) of this study is 0.198, which is greater than the commonly used significance level of 0.05, indicating that we cannot reject the hypothesis of variance equality. On the assumption of equal variance, the two-tailed significance (Sig.) is less than 0.05, indicating that the mean difference is significant (Rietveld & Van Hout, 2010). Table 5 shows that t=5.487, the corresponding two-tailed significance (Sig.) is 0.000, which is far less than 0.05, indicating that the mean LMO difference between the experimental group and the control group is significant at the significance level of 0.05. This means that there is a significant difference between the experimental group and the control group, indicating that online media has a greater impact on students' learning motivation than traditional teaching method. The research hypothesis H1 is supported.

4.2. Model reliability analysis

The reliability, composite reliability and mean variance extraction under the measurement model were tested. Through the collected data, the relationship between learning motivation, learning participation, and learning performance is studied. In this study, SMART-PLS was used to analyze the data through measurement model and structural equation modeling technology.

Table 6: Convergent validity, discriminant validity (CA, CR, AVE)

Variables	Cronbach's Alpha	CR	AVE	LMO	LPA	LPE
LMO	0.866	0.880	0.710	-		
LPA	0.853	0.860	0.774	0.673	-	
LPE	0.833	0.837	0.857	0.815	0.884	-

LMO=Learning motivation, LPA=Learning participation, LPE=Learning Performance, CA=Cronbach's Alpha, CR=Composite Reliability, AVE=Average Variance Extracted.

For statistically reliable acceptance of data acquisition tools [35]. Values for Cronbach's alpha, composite reliability, and average extracted (AVE) must all remain higher than 0.7, all AVE values must be higher than 0.5. The results in Table 6 show that all values agree with the benchmark values, demonstrating an acceptable and reliable model. We also take into account discriminative validity in addition to internal reliability and convergence validity. By assessing the level of correlation between model structures, discriminant validity accounts for the degree to which these structures differ from other structures. The average correlations between the heterotrait-heteromethod and the average HTMT are used to determine HTMT using the bootstrapping routine. To confirm discriminant validity between conceptions, HTMT values should be less than 0.90 or 0.85. As shown in Table 6, none of the HTMT values were greater than 0.90, showing sufficient discriminative validity.

4.3. Hypothesis testing

The evaluation of the direction, power and significance level of the path coefficients (betas) are the elements used in this study to test the research hypothesis. The minimum R^2 level shall be 0.10 (10%) higher than the minimum standard value, R squared standards is an independent variable affecting the dependent variable, 0.19, 0.39, 0.33, 0.67 respectively representing low, medium and high level of R^2 (Hair Jr et al., 2021). In addition, using guidance to assess the importance of connections, t statistics are used. According to Figure 2, all paths are statistically significant if the T-statistic is greater than 1.96 at the 95% confidence level (Garson, 2012). At the 90% confidence level, t statistics above 1.65, 99% above 2.57, and 99.90% above 3.29 are acceptable.

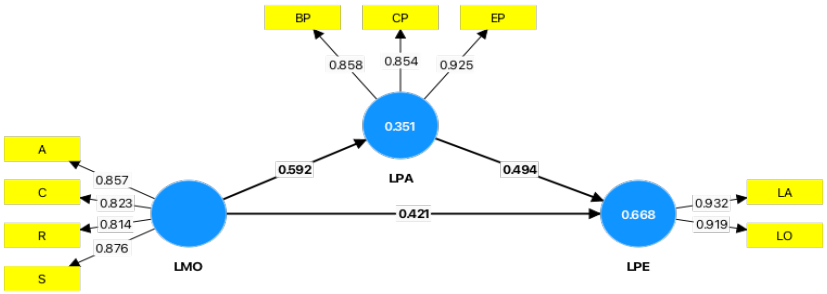

Figure 2: Measurement model assessment

5. DISCUSSION

As shown in Table 7, this study aims to expand the previous blank research. The regression coefficient of learning motivation in online media teaching shows that learning motivation has a positive effect on learning participation (β= 0.592, t = 7.324, p =0.000). Student motivation had a positive effect on learning performance (β=0.421, t=3.372, p =0.001). Learning participation positively affected learning performance (β=0.494, t=3.762, p =0.000). Therefore, in the context of online media teaching, learning motivation has a positive effect on learning participation, learning motivation has a positive effect on learning performance, and learning participation has a positive effect on learning performance. Research hypotheses H2, H3 and H4 are supported. The indirect influence of learning motivation in online media teaching has a significant impact on learning performance. Using the deviation-corrected percentile Bootstraping method, the 95% confidence interval of the intermediate path coefficient of learning motivation → learning participation → learning performance was [0.112, 0.469], the confidence interval does not contain zero, so the mediating effect of learning participation on learning motivation exists, and the mediating effect accounts for 29.3% of the total effect. The mediating effect of learning motivation was described as significant (β=0.293, t=3.211, p=0.001) and the research hypothesis H5 was supported.

Table 7: Hypothesis testing

Hypothesis	Paths	β	R^2	t-value	p-value	CI 2.5 %	CI 95 %	Supported
H2	LMO→LPA	0.592	0.351	7.324	0.000	0.398	0.725	Yes
H3	LMO→LPE	0.421	0.668	3.372	0.001	0.156	0.654	Yes
H4	LPA→LPE	0.494		3.765	0.000	0.205	0.727	Yes
H5	LMO→LPA→LPE	0.293		3.211	0.001	0.112	0.469	Mediation

LMO = Learning motivation, LPA = Learning participation, LPE = Learning Performance, Significance level at P<0.05

The empirical results of our study are consistent with previous studies: current students in higher vocational colleges find classroom teaching boring and have no interest in learning, and they need something new to stimulate students' learning. In this study, researchers used online media as a teaching tool to help students improve their interest in learning. Online media is a tool to provide teachers and students with more learning tools to help them obtain more effective learning methods, which has also been supported. He stressed that the multi-style learning methods in online media can further increase students' learning interest, improve students' learning efficiency, and enhance students' learning motivation (Bajaber, 2024; Prabawati et al., 2021). Learning motivation is significantly related to learning participation, because learning motivation plays an important role in class participation. In the process of classroom learning, the more motivated people are, the more eager they are for knowledge and the more attentive they are to the content taught by the teacher. When they encounter a problem, they try to solve it, dig deeper, and invest more time. On the contrary, students with weak motivation to learn even simple topics or knowledge are usually perfunctory and unwilling to participate in class learning, thus reducing the learning participation in class (Ainley, 2012; Filgona et al., 2020; Mandasari, 2020; Romero-Frías et al., 2023; Sofi-Karim et al., 2023). In teaching, students' mastery of the same skill is based on constant repetition, and their classroom learning endurance declines over time (Brown et al., 2022). Therefore, certain teaching strategies are needed to stimulate and maintain students' attention. With online media, on the basis of traditional teaching methods, quickly customize the Settings, and choose different music, different games, different content changes in the online network platform. Students' interest in learning will naturally be enhanced. As they spend more time in the classroom, their academic performance will eventually be reaped (Astin, 2014; Robbi et al., 2020; Wang et al., 2023; Yu et al., 2018).

This study takes learning participation as a mediating variable to explore and analyze the influence of learning motivation on learning performance in online media teaching. According to the research results, in online media teaching, students' learning motivation can not only directly affect learning performance, but also indirectly affect learning performance through the partial mediating effect of learning participation. The mediating effect of learning participation has been proved by previous studies (Wu et al., 2020). Huang & Yang found that learning motivation and learning participation are closely related, both of which are important factors affecting learning performance and play unique and important roles in students' learning process. As an internal driving force to stimulate, guide and maintain college students' learning activities, learning motivation can influence college students' learning objectives, learning methods and learning behaviors to a certain extent, and also affect their learning performance to a certain extent (Huang & Yang, 2021). Relatively speaking, learning motivation is only an internal psychological factor. Although it expresses students' inner learning needs and motivation to achieve learning goals, if it does not cause substantial learning participation behavior, college students do not really participate in the learning process, and only rely on learning motivation to achieve good learning performance.

Therefore, in online media teaching, students' learning motivation and learning participation will positively affect students' learning performance. Although the relevant research conclusions can be demonstrated in the context of distance teaching and offline teaching, this study focuses on the higher education teaching context that integrates online media in classroom teaching and finds that learning motivation and learning participation are important factors affecting students' learning performance.

6. CONCLUSION

Under the background of the current information age, online media teaching, as a new teaching mode, has been widely used in the field of higher vocational education. The emergence of this model not only changes the way students acquire knowledge, but also has a profound impact on the classroom teaching mode. Through systematic review of relevant literature and empirical data, this study makes an in-depth analysis of the current research status in the field. It is found that online media teaching significantly improves students' learning motivation by providing rich and varied learning resources, flexible learning styles and interactive and diverse classroom learning. In the online media environment, students can choose their own learning content, pace and manner, and this autonomy and flexibility stimulates their learning interest and curiosity. The improvement of learning motivation further promotes students' learning participation. When students have a strong interest in the learning content, they are more willing to actively participate in class discussions, ask questions and answer questions, thus forming a good learning atmosphere. The increase in learning motivation and engagement ultimately has a positive impact on students' learning performance. Students have shown higher learning efficiency and learning quality in online media teaching, and their academic performance and ability have been significantly improved. The quasi-experimental design was adopted in this study. By comparing the data of the experimental group and the control group, the validity of the research hypothesis was verified, and the mediating role of online media in influencing learning motivation and learning participation was revealed, which provided new expansion and demonstration for the research in related fields.

Only 70 students were selected as the experimental group and the control group, and the sample size was relatively small, which may affect the universality and reliability of the research results. At the same time, this study only focuses on the relationship between online media teaching and learning motivation, learning participation and learning performance, and does not involve other factors that may affect learning effects, such as students' learning ability and self-efficacy.

In summary, by systematically reviewing relevant literature and empirical data, this study reveals the influencing mechanism of online media teaching and learning motivation, learning participation and learning performance, which provides beneficial guidance for the practice of higher vocational education.

Authors' contributions: WZX conceived the idea, designed the project and wrote the manuscript. WZX performed the statistical analysis. YY participated in the design of the study and helped in writing the manuscript. All authors read and approved the final manuscript.

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