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Research on the Reform of Teaching Mode of Journalism and Communication Education Based on Artificial Intelligence Technology

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SUMMARY: *The continuous evolution of generative artificial intelligence, natural language processing and learning analytics technology is promoting journalism and communication education from experience-led to data-supported, process traceable and feedback adjustable teaching mode. This paper focuses on the transformative effect of artificial intelligence technology on the teaching mode of journalism and communication education, and constructs a teaching reform framework consisting of intelligent content generation, fact verification support, text revision feedback, learning behavior analysis and teacher regulation. A quasi-experimental study is carried out on 116 students from two natural classes of a university's journalism and communication course. There were 58 people in the experimental group and 58 in the control group. The research comprehensively collected platform logs, course grades, practical assignments and questionnaire data for analysis. The results showed that the average score of the experimental group was 85.2, which was higher than 79.4 of the control group. The average score of practical work was 89.1, which was higher than that of the control group (82.8), and the differences reached a significant level (p<0.001). At the same time, the average completion rate of teaching videos in the experimental group was 89.3%, and that in the control group was 76.1%. The number of revision rounds was positively correlated with the score of practical assignments (r=0.61, p<0.001). The research shows that the effective value of artificial intelligence in journalism and communication education does not lie in replacing students to complete content production, but in enhancing their ability of information screening, structure optimization, fact checking and continuous correction by relying on computer technology. This paper can provide reference for the digital transformation and intelligent teaching design of journalism and communication education.*

KEYWORDS: *Artificial intelligence; Journalism and communication education; Teaching mode reform; Human-machine collaboration*

1 Introduction

In recent years, the penetration of artificial intelligence technology in the field of higher education has accelerated significantly, especially the continuous evolution of natural language processing, knowledge graph, learning analytics, intelligent recommendation and generative models, which has made teaching activities begin to move from experience driven to data driven, from unified supply to personality adaptation. For journalism and communication education, this change is not a simple superposition of tools, but a systematic reshaping of course content, teaching process, practical training and evaluation mechanism. The discipline of journalism and communication itself has distinct technical sensitivity and

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media relevance. It not only pays attention to information collection, processing and expression, but also emphasizes public opinion judgment, fact verification, ethical norms and social responsibility. With algorithm distribution, intelligent writing, automatic editing, data news production and cross-platform content generation gradually entering the media industry, if the traditional teaching mode still remains on the path of teacher lectures and static case analysis, it has been difficult to respond to the ability requirements of complex and intelligent journalism communication talents in real positions.

From the perspective of teaching practice, the existing journalism and communication education still faces several structural constraints. On the one hand, classroom organization mostly advances with homogeneous progress, and it is difficult to implement accurate support according to students 'differences in writing ability, data processing level, media literacy and technology acceptance. There is often a mismatch between teaching content and students 'individual needs. On the other hand, courses such as news gathering, integrated reporting, public opinion analysis, and video planning usually rely on a large number of case updates, training feedback and process guidance. Teachers spend too much time in material sorting, homework correction and repeated questions and answers, which compresates the space for in-depth discussion, critical training and creative guidance. At the same time, traditional evaluation methods focus on the presentation of results, and lack of capture of students 'process performance in topic selection, information retrieval, content generation, human-computer collaboration and ethical judgment, and the immediacy and interpretation of feedback are also limited.

Although intelligent teaching platforms, online resource systems and data management tools have improved teaching support conditions to a certain extent, existing research mostly focuses on the application of artificial intelligence in a single link, such as assistant writing, automatic scoring, intelligent question answering or public opinion data analysis, and the discussion on the overall reconstruction of journalism and communication education teaching mode is still insufficient. In particular, there is still a lack of systematic research with both theoretical explanation and teaching verification on the boundary of human-computer collaboration, the allocation of teaching dominance, the credibility control of algorithm generated content, and the maintenance of students 'critical thinking. Artificial intelligence will not naturally translate into the improvement of teaching quality. Only when it is embedded in the curriculum objectives, practice scenarios and evaluation chain, and an operable, testable and iterative teaching mechanism is formed, can the technical advantages be truly transformed into educational effectiveness.

Based on this, this paper focuses on the reform of the teaching mode of journalism and communication education by artificial intelligence technology, tries to construct a teaching reform framework that integrates teacher leadership, algorithm support, data feedback and practical training, and integrates content generation, learning diagnosis, personality recommendation and process evaluation into a unified design. To explore its practical role in improving learning effectiveness, classroom participation and teaching adaptability. The purpose of this study is to provide a theoretical basis and realization path for the curriculum reform of journalism and communication education in the intelligent media environment.

2 Related Research

2.1 Application Progress of artificial intelligence technology in journalism and communication Education and teaching

In recent years, the application of artificial intelligence in higher education has gradually shifted from local trial to systematic embedding. Crompton and Burke[1] pointed out in their systematic review of relevant research from 2016 to 2022 that artificial intelligence research in colleges and universities has been significantly heated up in recent years, and the application focus has covered many links such as teaching support, learning analysis, feedback generation and personalized learning. Bond et al. [2] further stressed that the research on artificial intelligence in higher education is shifting from tool-oriented to a stage that emphasizes both ethics, collaboration and methodological rigor. This change provides a method basis for the introduction of algorithm assistance, data processing and intelligent interaction in journalism and communication education, and also makes the teaching reform begin to have strong computing technology support.

In terms of journalism and communication education itself, existing research has shifted from "whether to use artificial intelligence" to "how to embed it into the curriculum and training process". Gomez-Diago [3] proposed when combing the research and teaching experience of artificial intelligence in journalism education that journalism teaching should retain critical perspective and applied training at the same time, so that students not only understand the social consequences of technology, but also have the ability of data processing, automatic content generation and fact checking. Fernandez-Barrero et al. [4] combined with news writing teaching in Spanish universities and found that artificial intelligence could participate in topic selection, text organization, language revision and writing training, but its output quality, authenticity judgment and teaching ethics still needed to be checked by teachers. After analyzing the courses of 72 universities in Turkey, Babacan et al. [5] pointed out that the content of artificial intelligence has entered the news and new media training system, but the courses still show the characteristics of "more theory and weaker practice" in general. At the same time, Veenstra et al. [6] found that journalism students generally regard large language models as future career tools, but have insufficient understanding of their generation mechanism and risk boundaries. Mayo-Cubero[7] further pointed out that journalism education in the era of artificial intelligence should form a more flexible integration mode between technical training, professional norms and active learning. In general, artificial intelligence has begun to intervene in the content production, writing training, classroom feedback and ability evaluation of journalism and communication education, but its application is still in the transition stage from function expansion to teaching mode reorganization.

2.2 Collaborative Reform practice of journalism and communication Education and teaching supported by artificial intelligence

In the scenario of journalism and communication education, the intervention of artificial intelligence has shifted from single-point assistance to teaching restructuring driven by human-machine collaboration. Wenger et al. [8] pointed out that artificial intelligence is affecting the curriculum structure and ability training direction of journalism education. Biswas and Bland[9] discussed their realistic path into journalism and communication teaching from the three dimensions of "use, challenge and opportunity". Different from the early use of intelligent systems as retrieval or answering tools, the current practice emphasizes more on the division of labor and collaboration between teachers, students and algorithmic systems in topic selection design, data collection, news writing, data analysis, content verification and classroom feedback, which gradually transforms artificial intelligence from peripheral technology into a collaborative node in the teaching chain.

Existing research has begun to show the specific pattern of this collaborative transformation. Aitamurto and Boyles[10] found that journalism students had formed a clear career imagination of "AI-integrated journalism", which meant that the teaching goal was extending from traditional acquisition and writing training to algorithm understanding and intelligent collaboration. Powers et al. [11] believe that generative artificial intelligence can be used as a starting point for learning and lesson preparation, or it may evolve into a dependency tool, so curriculum governance and academic norms must follow up synchronously. Looking further, Alonso-Munoz and Casero-Ripolles [12] focused on journalism students' acceptance attitude toward generative artificial intelligence, suggesting that teaching reform should not stop at tool openness, but pay attention to differences in use cognition and behavior. Mambwe[13] proposed to combine accessible mobile artificial intelligence tools, news LABS and interdisciplinary cooperation to alleviate the pressure of practical teaching under resource-constrained conditions. Both Sarrionandia et al. [14] and Hollanek et al. [15] emphasize that AI training in journalism education should not only teach "how to use" but also incorporate technical risk, ethical judgment, and critical AI literacy into the process. It can be seen that the collaborative reform supported by artificial intelligence is essentially a process of journalism and communication teaching from a one-way teaching mode to a ternary linkage mechanism of "teacher leading - student participation - system feedback".

2.3 Limitations of existing research and room for improvement

Although artificial intelligence has shown strong intervention ability in journalism and communication education, there are still obvious breaks and shortcomings in related research from the existing results. Table 1 summarizes the existing representative studies. It can be seen that many researches still stay at the level of tool use, attitude survey or local course experiment, and lack of discussion on the systematic linkage between teaching objectives, course processes, practical training, learning evaluation and ethical governance. Ncube et al. [16] pointed out when examining the current training situation of journalism colleges in Southern Africa that the integration of artificial intelligence into journalism education still faces problems such as uneven curriculum configuration, weak technical foundation and intermittent practical training, which indicates that the introduction of technology into the classroom does not mean that the teaching mode has been reconstructed. Kuleto et al. [17] and Tan et al. [18] also showed from the research on the application of higher education and teacher professional development that the educational effectiveness of artificial intelligence often depends on institutional support, teacher ability and scene adaptation, rather than solely on the tool itself.

From the perspective of research content, the existing literature focuses more on writing assistance, question answering feedback, content generation and usage perception, and lacks a structured design for the whole process of journalism and communication teaching. Ilieva et al. [19] and Michel-Villarreal et al. [20] believe that generative chatrobots can improve interaction efficiency and resource accessibility, but their accuracy, stability and misleading risk always accompany the application process. Mah and Groß[21] further pointed out that teachers' self-efficacy in the use of AI differs significantly from training needs, which means that the same technology is difficult to naturally translate into consistent teaching effects in the absence of mechanism design. At the same time, Chen et al. [22] and Arowosegbe et al. [23] found that students' adoption intention, interaction mode, result judgment and ethical perception of generative AI are not consistent. Some students can use it as a cognitive scaffold, while some students are easy to form dependence. This brings new pressure for critical thinking training, authenticity verification and academic norms maintenance in journalism and communication education.

Looking further, another shortcoming of the existing research is the weak evidence of the process at the computational level. Many studies focus on conclusions and light on mechanisms, and rarely use data such as learning behavior logs, interaction trajectories, task completion time, content modification rounds and text quality scores to carry out fine-grained analysis of the operation process of teaching models, and lack of continuous verification of the combination of experimental group and control group. Journalism and communication education itself has the characteristics of strong practicality, fast content update and deep technology embedding. Without a research framework based on data collection, learning analysis and human-computer collaborative process modeling, it is difficult to truly explain which link artificial intelligence has changed, which kind of ability has been improved, and under which circumstances it will bring new deviations. Based on this, it is necessary for subsequent research to construct an overall reform framework that takes into account teaching dominance, algorithm support, process evaluation and ethical constraints, and verify it through quantifiable and reproducible teaching experiments.

Table 1: Comparison of existing research limitations and improvement space

Reference	Research Focus	Method/Context	Main Conclusion	Limitation
Ncube et al. [16]	AI training gaps in journalism schools	Regional investigation of journalism education	AI training has been initiated, but resources and curricula are unevenly distributed	Focuses mainly on describing the current situation and lacks instructional model construction
Kuleto et al. [17]	Opportunities and challenges of AI and machine learning in higher education	Review of higher education	Technology application is constrained by institutional conditions and capability levels	Does not focus on the disciplinary characteristics of journalism and communication
Ilieva et al. [19]	Effects of generative chatbots in higher education	Analysis of teaching applications	Can improve interaction and support efficiency	Provides insufficient explanation of deep learning quality
Michel-Villarreal et al. [20]	Challenges and opportunities of generative AI in higher education	Comprehensive discussion	Technological potential and risks coexist	Lacks support from course-based experimental data
Mah and Groß [21]	Teachers' use, self-efficacy, and training needs	Teacher profile analysis	Differences in teacher capability affect technology implementation	Does not further examine human–AI collaborative process design
Chen et al. [22]	Students' generative AI literacy	Study on student adoption and ethical perception	Differences exist between usage behavior and judgment ability	Involves limited discussion of journalism and communication practice training
Arowosegbe et al. [23]	Perceptions of generative AI in UK universities	Perception survey	Students generally show a relatively high level of acceptance	Focuses on attitudes and lacks long-term effectiveness validation
Tan et al. [18]	AI and teacher professional development	Systematic review	Teacher development is a key variable in teaching reform	Insufficient discussion of discipline-specific application pathways

3 Research Methods

3.1 Framework design of journalism and communication teaching mode reform driven by artificial intelligence

Combined with the interwoven operation characteristics of "knowledge lecture-case analysis-content production-practice feedback-value correction" in journalism and communication education, this paper constructs the framework of teaching mode reform driven by artificial intelligence. The framework does not replace teachers with technology, but empowers natural language processing, learning analysis, knowledge organization and generative model into the teaching chain, so that teachers 'curriculum design ability and professional judgment ability can form a stable collaboration with the data processing ability and content generation ability of artificial intelligence. As shown in Figure 1, the overall framework is composed of teaching input layer, intelligent generation layer, collaborative teaching layer, learning analysis layer and evaluation optimization layer, which is carried out around the tasks of topic planning, fact checking, text writing, media integration expression and ethical judgment in the course of journalism and communication.

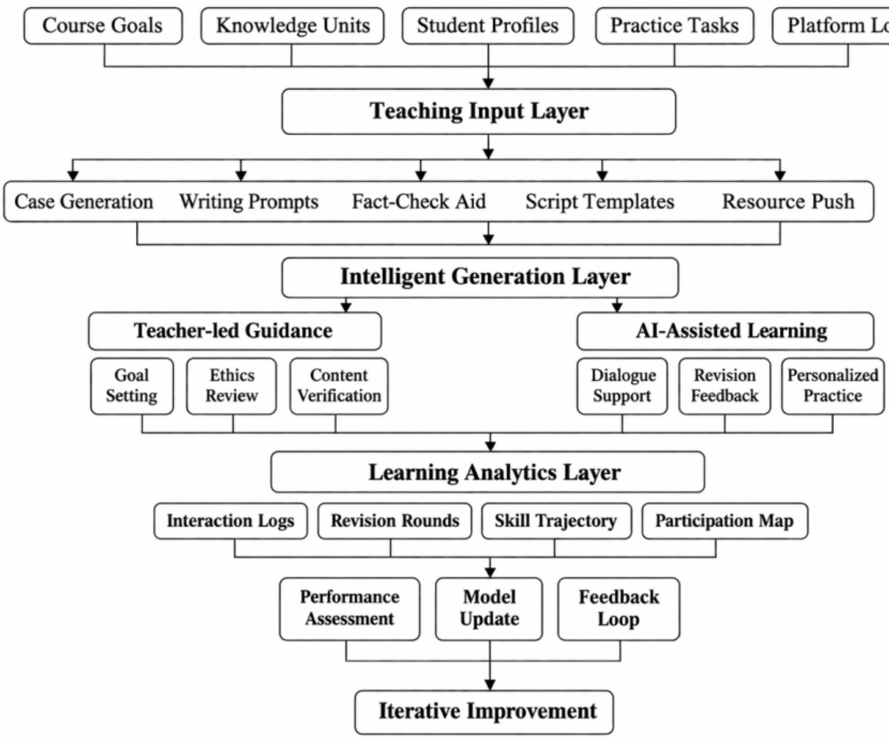

Figure 1: Framework for the reform of journalism and communication teaching mode driven by artificial intelligence

In the teaching input layer, the system receives multi-source data such as course objectives, knowledge point sets, student portraits, practice task types and platform logs. Among them, the student profile includes not only existing grades, but also writing styles, data processing fundamentals, media usage habits, and classroom interaction frequency. Given that the course goal is T, the set of knowledge units is K, the student feature vector is P_s, and the task scenario is M, the process of generating teaching content by AI can be expressed as:

$$C_{gen} = G(T, K, P_s, M; \theta) \tag{1}$$

where, G is the generating function, θ is the model parameter, and C_{gen} represents the teaching resources output by the system, which mainly includes case materials, hierarchical exercises, news writing tips, data news script templates, and class discussion topics. Considering the authenticity and standardization requirements of the journalism and communication course, the generated results are not directly entered into the classroom, but first reviewed, revised and added to the curriculum context by teachers, so as to ensure that the technical output is consistent with the teaching objectives.

In the collaborative teaching layer, teachers were responsible for determining topic boundaries, value orientation and evaluation criteria, and artificial intelligence was responsible for high-frequency tasks such as data merging, case summarization, structure suggestion, text polishing and instant answering. In order to depict students' learning status on specific knowledge points, this paper constructs an index of learning mastery. Let the mastery level of student s at knowledge point k be $L_{s,k}$ then:

$$L_{s,k} = \alpha A_{s,k} + \beta\left(1 - \frac{T_{s,k}}{T_{max}}\right) + \gamma R_{s,k} \tag{2}$$

Here, $A_{s,k}$ represents the task accuracy rate, $T_{s,k}$ represents the completion time, $R_{s,k}$ represents the modification quality score, and α, β, γ are the weight coefficients. According to the changes of $L_{s,k}$ the system can push interview training, headline rewriting tasks, fact checking examples and video script exercises of different difficulties for students, so as to realize more detailed hierarchical support in journalism and communication teaching.

In the learning analysis layer, the platform continuously records the number of students 'human-computer interaction, homework iteration rounds, discussion participation, task completion time and teacher feedback acceptance, and generates the class learning heat map and individual growth trajectory. For journalism writing and convergence practice courses, this log-based process tracking can better reflect the real path of competence formation than a single outcome grading. In order to comprehensively evaluate the teaching effectiveness, this paper sets up the learning performance index E_s:

$$E_s = \delta S_{exam} + \mu S_{task} + \nu S_{engage} \tag{3}$$

where, S_{exam} is the stage test score, S_{task} is the average practice task score, S_{engage} is the engagement index, δ, μ, ν are the corresponding weights. This indicator focuses on both result performance and retains the examination of process input and practical ability.

In the evaluation optimization layer, teachers adjusted case selection, task assignment and classroom rhythm according to the results of system analysis, and the system updated parameters according to teachers 'revision records and students 'learning feedback, forming a closed loop of "teacher correction-system iteration-teaching redesign". The significance of this approach is that technology embedding in journalism and communication education is no longer a piecemeal splicing of tools, but a structured reorganization around curriculum objectives, practical tasks and evaluation rules. The framework not only retains the teacher's leading position in the training of news ethics, value judgment and complex expression, but also gives full play to the computational advantages of artificial intelligence in information processing, content generation and process analysis, which provides an executable implementation basis for subsequent teaching experiments.

3.2 Research object and design of teaching experiment

In this study, two natural classes in the second year of journalism and communication major in a university were selected as the research objects, with a total of 116 students, including 58 in the experimental group and 58 in the control group. Before the experiment, the pre-test and questionnaire survey were conducted on the students 'scores of News Interview and writing course in the last semester, their habits of using digital media, information retrieval ability and contact experience with artificial intelligence tools. The results of independent sample test showed that there was no significant difference between the two groups at the baseline level, which provided the premise for carrying out the teaching comparison experiment. The research period is set to be 1 semester, with a total of 16 weeks and 4 class hours per week, and the experimental course is "Integrated News Production and Intelligent Communication Practice". In order to minimize the interference of external variables, the experimental group and the control group were taught by the same teacher, using the same syllabus, the same case base and the same evaluation standard.

A quasi-experimental design was used in this study. The experimental group introduced the artificial intelligence-driven teaching mode, and connected the generative writing assistance, fact checking tips, topic selection recommendation, classroom question answering and learning trajectory analysis modules into the course platform. The control group followed the conventional teaching method, which was mainly based on teacher teaching, case discussion, homework and platform basic resource push, without intelligent generation and personalized feedback functions. Considering the emphasis on content authenticity and value judgment in the course of journalism and communication, the artificial intelligence system in the experimental group did not directly replace students in completing the acquisition and writing tasks, but took on auxiliary work such as data merging, structure suggestions, language optimization, data visualization tips and process feedback. Teachers were still responsible for issue checking, ethical review and final evaluation of results.

In order to improve the matching degree between the system and the course scene, the teaching plug-in was deployed on the campus learning platform to form an integrated link of "teaching resources push-behavior collection-feedback transmission". The back-end uses Python and FastAPI to build interface services, the front-end uses Vue to implement interactive pages, and the learning log is written to the MySQL database to facilitate subsequent behavior analysis. The core variables recorded by the system include the number of questions, the duration of task submission, the number of rounds of text modification, the frequency of fact checking, the sequence of classroom interaction clicks, and the score of stage tests. To measure the individual learning gain, let the standardized boost of student s be:

$$\mathrm{G_s} = \frac{\mathrm{Post_s} - \mathrm{Pre_s}}{100 - \mathrm{Pre_s}} \tag{4}$$

Here, $\mathrm{Pre_s}$ is the pre-test score, $\mathrm{Post_s}$ is the post-test score, and the higher $\mathrm{G_s}$ indicates the more obvious increase in ability after the teaching intervention. Furthermore, the student classroom participation index is defined as:

$$\mathrm{P_s} = \alpha \mathrm{I_s} + \beta \mathrm{C_s} + \gamma \mathrm{F_s} \tag{5}$$

Here, $\mathrm{I_s}$ represents the frequency of platform interaction, $\mathrm{C_s}$ represents the task completion rate, $\mathrm{F_s}$ represents the teacher feedback responsiveness, and α, β, γ are the weight coefficients.

During the implementation of the experiment, in order to avoid students from forming mechanical dependence on artificial intelligence, the system set up a hierarchical prompting mechanism. When students asked the same task for multiple rounds in succession, the platform gave priority to output cue-type prompts and verification paths instead of giving a complete answer directly. Content involving news ethics, sensitive expressions and factual disputes will be automatically transferred to teachers for review. In this way, on the one hand, the computational advantages of artificial intelligence in information processing and instant feedback are retained, and on the other hand, the critical judgment, the sense of authenticity and the training of professional norms in journalism and communication education are not weakened. Figure 2 shows the overall experimental process.

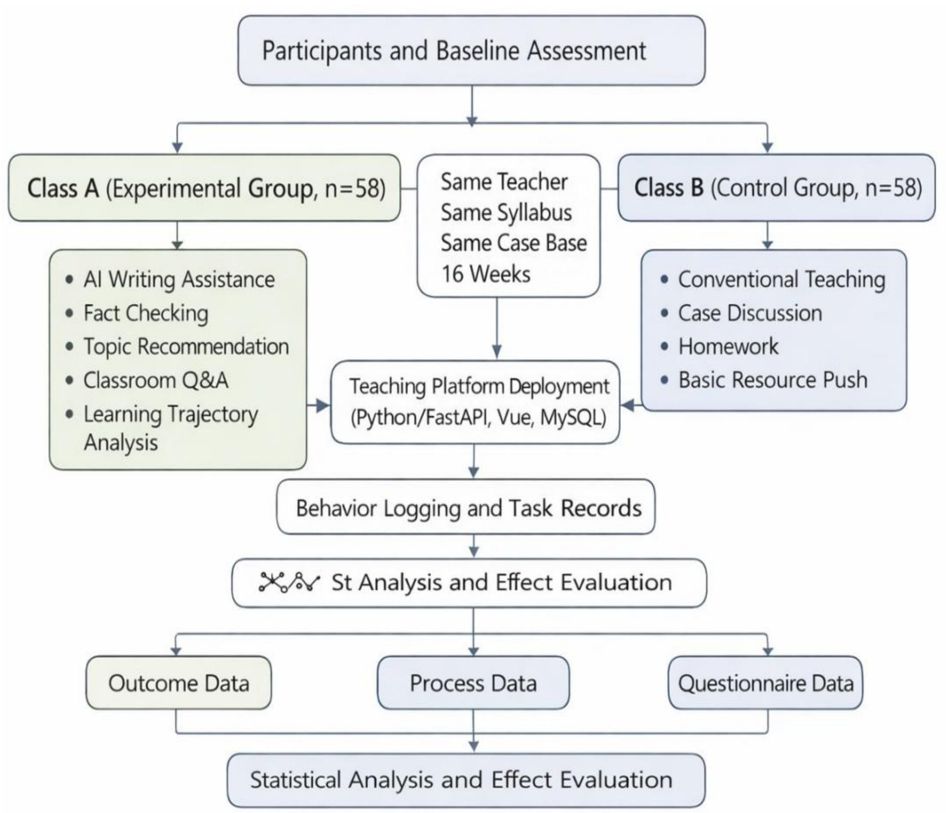

Figure 2: Research object and design process of teaching experiment

3.3 Teaching data collection and analysis methods

In order to accurately identify the influence path of artificial intelligence technology on the reform of journalism and communication teaching mode, this paper divides the data collection into three types: learning result data, learning process data and perception feedback data, and completes the cleaning, coding, analysis and verification under a unified data governance process. The learning outcome data mainly included stage test scores, news writing assignment scores, integrated reporting practice scores and course completion scores. Among them, the stage test covered news gathering norms, fact checking, headline production, media ethics judgment and data expression. The assignment grading was done independently by two teachers with many years of teaching experience, and then the disagreement samples were rechecked to improve the consistency of evaluation. In order to ensure that data from different sources can enter the unified analysis link, this paper completes data processing in the order of "collection, cleaning, alignment, feature extraction and statistical analysis", and the specific process is shown in Figure 3. If the agreement coefficient of two raters is denoted as K, it can be expressed as:

$$K = \frac{P_o - P_e}{1 - P_e} \tag{6}$$

Here, P_o is the actual consensus proportion and P_e is the random consensus probability. This index is used to test the reliability of subjective ratings and avoid the influence of too strong individual bias in news works evaluation on experimental judgment.

The learning process data is automatically collected by the background of the teaching platform. Through the interface module in the course management platform, the system records the information of students 'login frequency, single learning duration, resource access sequence, the number of artificial intelligence question and answer calls, the frequency of fact checking module use, the time point of assignment submission, the number of text modification rounds, and the click trajectory of classroom interaction in real time. Considering that the course of journalism and communication has the characteristics of long task chain and intensive process behavior, this paper does not take a single click as the basis for judgment, but constructs a comprehensive participation index to describe the degree of students 'investment in the whole learning process. Let the behavioral participation index of student s be E_s, then there is:

$$E_s = \alpha \cdot \frac{N_{log}}{N_{max}} + \beta \cdot \frac{T_{study}}{T_{max}} + \gamma \cdot \frac{N_{ai}}{N_{amax}} + \lambda \cdot R_{task} \tag{7}$$

Here, N_{log} represents the number of logins, T_{study} represents the effective learning time, N_{ai} represents the number of AI interactions, R_{task} represents the task completion rate, and α, β, γ, and λ are the weight coefficients. Through this index, students 'learning activity and task engagement level in the context of artificial intelligence support could be more stably reflected.

The perceived feedback data mainly came from the student questionnaire and the teacher interview after the course. The students' questionnaire focused on the ease of use of technology, timeliness of feedback, content credibility, changes in learning pressure, sense of classroom participation and willingness to continue using, and was recorded by a five-level scale. The teacher interviews focused on the supporting effects of artificial intelligence in lesson preparation, task organization, process diagnosis and result evaluation. In order to enhance the comparability between the data, the platform logs, the questionnaire results and the score data are associated by the anonymous number of the students, and the real identity information is not retained. The background firstly removes records with missing fields, repeated uploads and abnormal timestamps, and then performs uniform time alignment on data generated by different modules, and uses hash mapping to replace user identification to ensure that data privacy and research ethics requirements are met.

In the analysis stage, this paper transformed the multi-source data into a structured feature set, and combined descriptive statistics, difference test between groups and correlation analysis to investigate the effect of teaching intervention. For the overall learning benefit of students, standardized gain index is adopted:

$$G_s = \frac{S_{post} - S_{pre}}{100 - S_{pre}} \tag{8}$$

S_{post} and S_{pre} represent the pre-test and post-test scores, respectively. For the relationship between artificial intelligence use behavior and learning results, a correlation analysis model was established to investigate the linkage characteristics between the frequency of artificial intelligence question answering, the intensity of verification call, the number of job iterations and learning performance. Through the cross-validation of three types of evidence of "result data-behavior logs-perceived feedback", this paper tries to avoid explaining the effect of teaching reform only by a single score change, so that the application of artificial intelligence in journalism and communication education can be analyzed on the basis of observation and quantification.

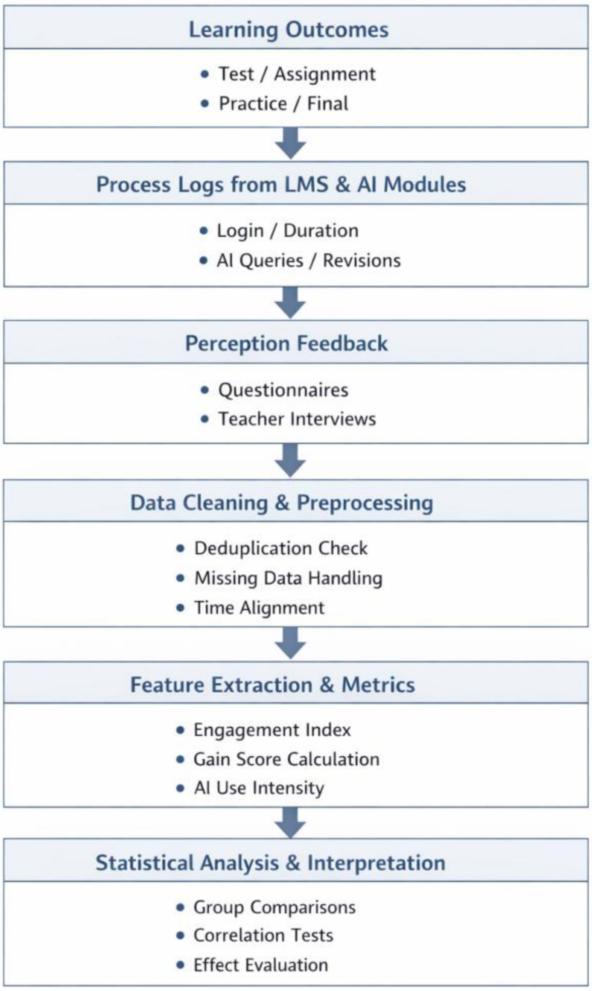

Figure 3: Process of teaching data collection and analysis

4 Results and discussion

4.1 Comparative analysis of learning effectiveness and participation between experimental group and control group

The differences between the experimental group and the control group at the level of learning effectiveness and classroom participation are shown in Figure 4 and Table 2. Different from the expression that only uses the same group of means to draw graphs at the same time, this paper presents the two types of results separately: Figure 4 is used to show the change trajectory of students 'participation in the teaching process of the two groups, and Table 2 focuses on the statistical comparison of learning outcome indicators such as midterm tests, final grades and practical assignments. Such treatment can better reflect that "process change" and "result improvement" in the teaching reform of journalism and communication are not the same level of evidence, but two observation dimensions that are connected and supported by each other.

From the process level, Figure 4 shows that the classroom participation index of the experimental group shows a continuous upward trend throughout the semester, and a relatively obvious gap between the experimental group and the control group after the 8th week. Early in the teaching period, the engagement of the two groups was close, indicating that the AI support had not immediately translated into significant behavioral advantages at the beginning of the course. With intelligent question answering, topic selection tips, fact checking assistance and assignment revision feedback gradually embedded in the learning process, the experimental group performed more stable in terms of resource access frequency, task iteration rounds, immediate classroom response and platform interaction activity. By week 16, the participation index of the experimental group reached 88.6, while that of the control group was 79.8. This indicates that artificial intelligence does not weaken students' autonomous engagement in the journalism and communication course, but strengthens the continuous involvement in the learning process with the help of continuous feedback and visual prompts. For journalism and communication education, this is particularly important because report planning, information screening, text revision and media expression themselves rely on multiple rounds of deliberation and repeated correction, and the growth of participation is often a precondition for ability improvement.

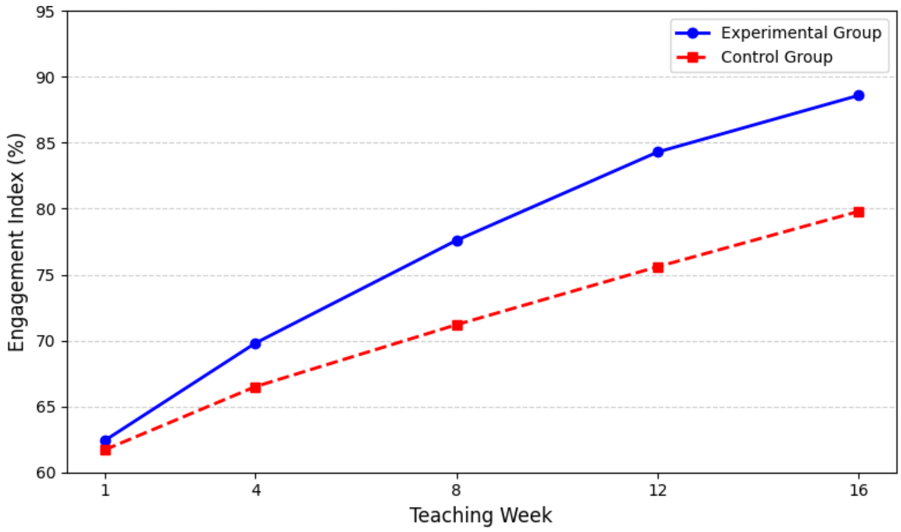

Figure 4: Change trend of classroom participation index between experimental group and control group

From the result level, Table 2 shows that the experimental group has significantly higher final exam scores, subjective questions scores, and average scores of practical assignments than the control group. In the mid-term test stage, although the mean value of the experimental group was higher than that of the control group, the difference had not yet reached a significant level (p=0.068), indicating that students were still in the adaptation stage of the new learning path in the early stage of teaching mode transformation, and the support of artificial intelligence was mainly reflected in the improvement of task organization and information acquisition efficiency, but not fully reflected in the stable performance advantage. After entering the late stage, the final overall assessment and practical homework scores of the experimental group were significantly improved, and the mean final overall assessment was 85.2, and 79.4 in the control group. The mean score for practice assignments was 89.1

and 82.8 for the control group, both showing strong statistical significance and moderate to large effect sizes. Especially in the subjective part, the advantages of the experimental group were more obvious, which indicated that the artificial intelligence support not only improved students 'memory of basic knowledge, but also promoted the development of higher-order abilities such as issue analysis, information integration and news expression to a certain extent.

Table 2: Comparison results of learning effectiveness between experimental group and control group

Indicator	Experimental Group Mean	Control Group Mean	p-value	Cohen's d	95% Confidence Interval
Midterm Test Score	76.8	75.1	0.068	0.26	[-0.06, 0.57]
Final Overall Score	85.2	79.4	<0.001	0.81	[0.43, 1.16]
Final Subjective Question Score	43.1	38.7	<0.001	0.77	[0.39, 1.11]
Average Practical Assignment Score	89.1	82.8	<0.001	0.74	[0.36, 1.08]

Looking at Figure 4 in conjunction with Table 2, it can be seen that the formation of the differences between the two groups is not accidental. The higher participation intensity in the experimental group in the middle and later part of the semester was consistent with the better learning results in the end of the semester. This means that the mechanism of AI-driven teaching mode is not to directly replace students to complete news production tasks, but to gradually promote learning effectiveness by improving interaction density, shortening feedback time delay, and enhancing process revision. For journalism and communication education, this chain change of "process enhancement-result improvement" can better illustrate the actual value of teaching mode reform than the simple score increase.

4.2 Analysis of learning experience and technology acceptance

The comparison results between the experimental group and the control group at the level of learning experience and technology acceptance are shown in Figure 5. On the whole, the journalism communication teaching mode supported by artificial intelligence not only improved students 'subjective experience of course organization, but also improved their acceptance of intelligent teaching tools. The results of the questionnaire showed that the scores of learning satisfaction, perceived usefulness, perceived ease of use and willingness to continue to use in the experimental group were higher than those in the control group, for example, learning satisfaction was 4.42, and the control group was 3.86. Perceived usefulness was 4.37 and 3.79 for the control group. Compared with the control group, the experimental group showed higher evaluations in the dimensions of learning satisfaction, perceived usefulness, perceived ease of use and technology trust, indicating that the teaching mode supported by artificial intelligence not only affected the learning results, but also improved students 'subjective feelings about the teaching process.

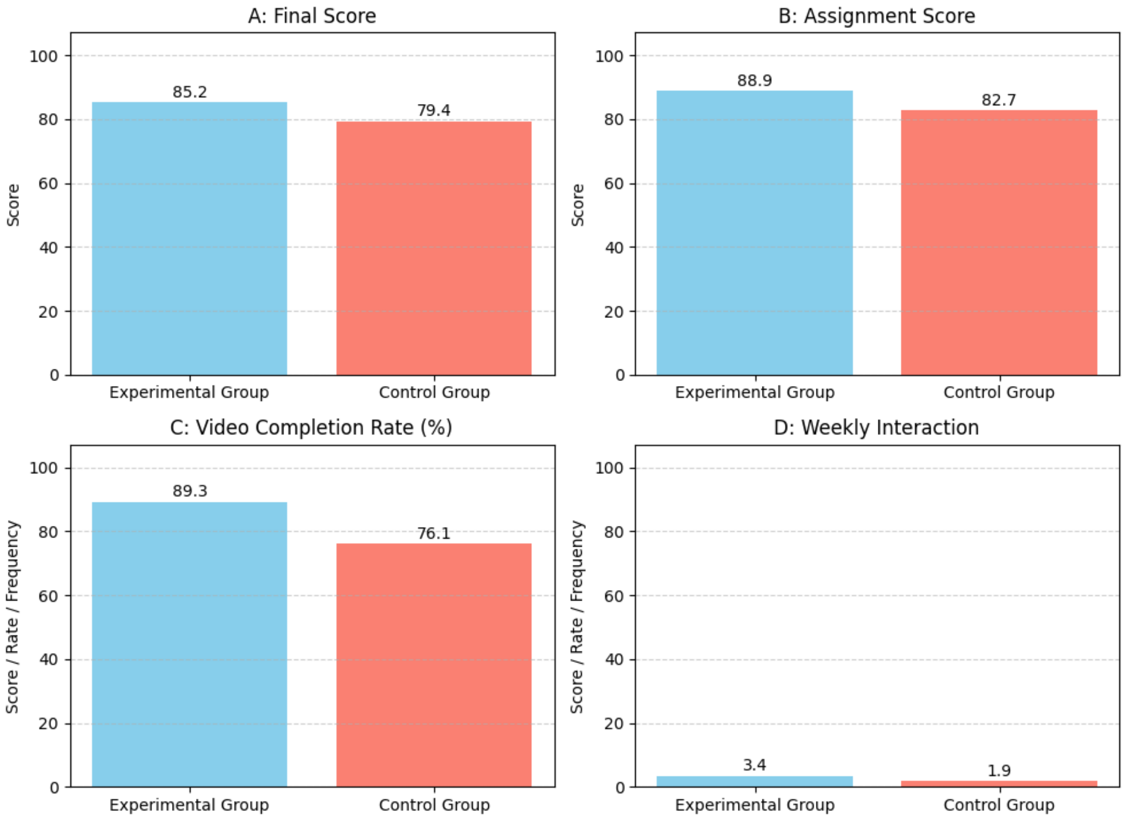

Figure 5: Comparison of learning experience and technology acceptance between experimental group and control group

As shown in Figure 5, the mean values of the experimental group in the three dimensions of learning satisfaction, perceived usefulness and perceived ease of use were higher than those of the control group, indicating that students had a relatively positive attitude toward the teaching model of journalism and communication supported by artificial intelligence. At the level of learning experience, students gave high evaluations on the timeliness of intelligent feedback, the clarity of task prompts and the organization of resources. The improvement of the experimental group in these two indicators indicated that the continuous intervention of the artificial intelligence system in data merging, writing prompts and revision suggestions could help shorten the distance from "completing the task" to "optimizing expression", and make students form a clearer sense of structure and verification consciousness in the news production training.

From the subjective experience, the students in the experimental group generally believed that the feedback of artificial intelligence was more timely, the task prompt was clearer, and the material organization was more organized, which showed that this model had certain advantages in reducing the resistance to task understanding and enhancing the sense of learning support. This indicates that the teaching environment supported by artificial intelligence improves students' acceptance of course organization methods and technology tools without weakening the leading role of teachers. For journalism and communication education, this change has special significance, because report writing, financial media planning and public opinion analysis already rely on repeated revision, dynamic judgment and multiple rounds of verification, and the improvement of learning participation is often an important prerequisite for ability growth.

4.3 Correlation analysis between artificial intelligence usage behavior and learning outcomes

In order to further identify the role path of artificial intelligence technology in journalism and communication teaching, this paper conducted a correlation test on the relationship between students 'artificial intelligence use behavior and learning effectiveness based on the experimental group's platform log and course performance data, and the results are shown in Table 3. The behavioral variables included in the analysis mainly included the frequency of AI question answering, the number of fact checking module calls, the number of text revision rounds and the number of personalized resource visits. The learning effectiveness variables included the final assessment score, the practical assignment score and the subjective test score. Correlation analysis was calculated using Pearson coefficient. The overall results show that there is a generally positive relationship between AI usage behavior and learning performance, but the influence strength of different types of behaviors is not consistent.

Table 3: Results of correlation analysis between AI use behavior and learning effectiveness

Behavioral Variable	Final Overall Score	Practical Assignment Score	Subjective Question Score
Frequency of AI-based Question Answering	0.47**	0.43**	0.39**
Number of Fact-checking Module Calls	0.51**	0.48**	0.56***
Number of Text Revision Iterations	0.54***	0.61***	0.52***
Personalized Resource Access Volume	0.42**	0.46**	0.41**

As can be seen from Table 3, there is the highest correlation between the rounds of text revision and the scores of practical assignments ($r=0.61$, $p<0.001$), indicating that in the training of news writing, title formulation and media fusion script, the more students tend to use intelligent feedback to carry out multiple rounds of revision, the higher the quality of their final works tend to be. This result is more consistent with the task characteristics of journalism and communication courses, because this course emphasizes the repeated polishing of content expression, and the computational support provided by artificial intelligence in structure suggestion, language compression and information complement can be directly embedded in the writing optimization process. There was also a strong positive correlation between the number of fact checking module calls and the score of subjective questions ($r=0.56$, $p<0.001$), indicating that students who actively used the fact checking tool were more likely to form a more rigorous information judgment path in tasks involving news authenticity judgment, case discrimination and issue analysis.

In contrast, although the frequency of question answering in artificial intelligence was significantly positively correlated with the final overall assessment score ($r=0.47$, $p<0.01$), the correlation strength was lower than that of revision behavior and verification behavior. This shows that simply increasing the number of Q&A does not necessarily bring optimal learning benefits, and what is really more closely related to the improvement of performance is whether students further transform the Q&A results into task revision, material screening and expression reconstruction. The number of personalized resource visits was also moderately positively correlated with the three performance indicators, indicating that the recommendation mechanism had practical value in expanding case reading, supplemating background knowledge and extending classroom discussion, but its role was more supportive than directly determining the level of performance.

4.4 Different artificial intelligence support teaching models and effect analysis of key modules

In order to further judge the source of the effect of artificial intelligence technology in journalism and communication teaching, this paper compares different artificial intelligence support teaching models, and the results are shown in Figure 6. The study divided the teaching model into five categories: T0 was the traditional teaching model, T1 was only introducing intelligent writing assistance, T2 was "intelligent writing assistance + fact checking", T3 was "intelligent writing assistance + fact checking + revision feedback", and T4 was the complete human-computer collaboration model including resource recommendation, learning analysis and process tracking. The comparison results showed that with the gradual increase of artificial intelligence function modules, students showed a continuous improvement trend in the two dimensions of learning effectiveness and learning participation, but the improvement range of different modules was not consistent.

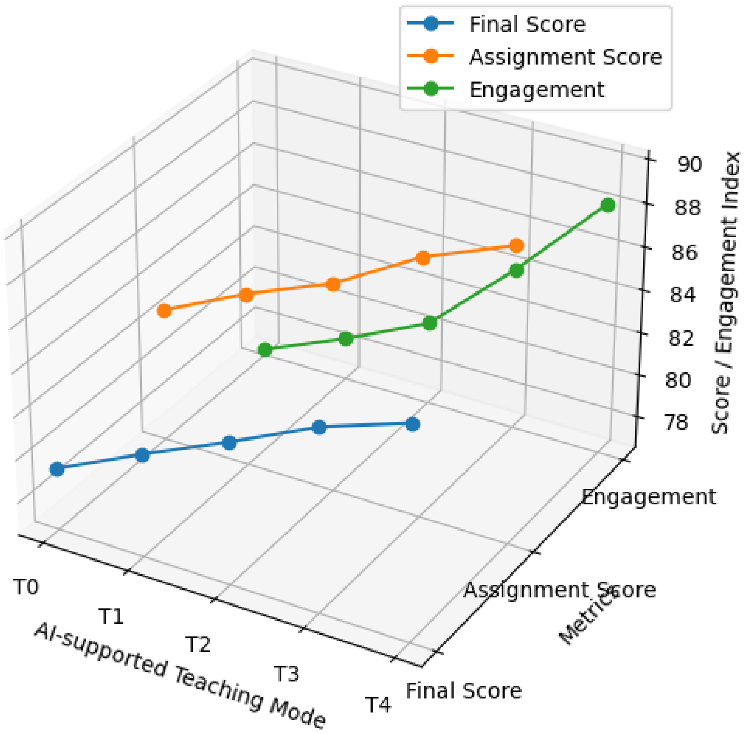

Figure 6: Comparison of different artificial intelligence support teaching models and key modules

Specifically, the average score of students' final evaluation was 79.4, the average score of practical assignment was 82.8, and the classroom participation index was 76.8 under the T0 mode. When only intelligent writing assistance module was added to the course, the three indicators corresponding to T1 mode increased to 81.3, 84.6 and 78.5 respectively. That is to say, the single writing assistance can bring certain improvement, the final total score is increased by 1.9 points, the assignment score is increased by 1.9 points, and the participation index is increased by 1.7, but the improvement is relatively limited, indicating that text generation and language optimization alone are not enough to significantly change the more complex learning process in the course of journalism and communication.

After adding the fact checking module on this basis, the final total score of T2 mode further increased to 83.1, the average score of practical assignments reached 86.2, and the classroom participation index was 80.4. Compared with T1, the three indicators increased by another 1.8 points, 1.6 points and 1.9 points, respectively. This change shows that the fact checking module has a strong pertinence for journalism and communication education. News writing, case analysis and news source judgment themselves require students to have authenticity consciousness and evidence consciousness, and the verification path suggestion, source comparison and information screening functions supported by artificial intelligence can greatly improve students 'information discrimination ability, so that they can no longer stay at the surface expression optimization.

When the revision feedback module continued to be superimposed, the final total score of T3 mode reached 85.0, the average score of practical work rose to 88.5, and the classroom participation index increased to 84.1. Compared with T2, the final total assessment increased by 1.9 points, the practical assignment increased by 2.3 points, and the participation index increased by 3.7. This indicates that the revision feedback module is an important node to drive the result promotion. For the course of journalism and communication, writing training is not a one-time output, but a multi-round iteration around headline compression, structure adjustment, fact addition and expression correction. If AI can generate directed feedback for the draft, it will significantly enhance the initiative and continuity of students 'revision work.

The full T4 mode performs the best. Under this mode, the average score of the final evaluation reached 86.4, which was 7.0 points higher than T0. The average score of practical work was 90.1, which was 7.4 points higher than T0. The classroom participation index reached 88.2, which was 11.4 higher than T0. Compared with T3, T4 still increased by 1.4 points, 1.6 points and 4.1 points respectively, indicating that although resource recommendation, learning analysis and process tracking did not directly affect the text generation itself like verification and revision, they could further enlarge the overall teaching effect by optimizing the learning rhythm, enhancing task continuity and improving classroom involvement. It can be seen that the advantage of artificial intelligence supporting teaching mode does not come from a single tool, but from the collaborative embedding of multiple computing modules in the teaching chain of journalism and communication.

4.5 Discussion

The results of this study showed that the influence of artificial intelligence technology on the teaching mode of journalism and communication education was not a simple supplement to the traditional classroom, but an overall rewrite of the teaching organization logic, learning support methods and practical training paths. The experimental group was improved in learning effectiveness, participation level and assignment quality, indicating that the generative model, learning analysis and process feedback mechanism into the course indeed enhanced the coherence of the chain of "collection-judge-expression-revision" in journalism and communication teaching. Compared with the traditional way of relying on teachers' centralized teaching and unified feedback after class, the teaching process supported by artificial intelligence is more immediate and traceable. Students can continuously obtain structural hints, fact checking paths, and modification suggestions during the task advancement.

Furthermore, there was a relatively stable correspondence between learning behaviors and learning outcomes in this study, especially the positive correlation between the number of text revision rounds, the frequency of fact checking calls, and the scores of subjective questions and practical assignments was obvious. This means that where AI really works is not in substituting for students to generate complete content, but in pushing students into a more frequent process of judgment, comparison, and reconstruction. This is particularly critical for journalism and communication education. News writing, media convergence planning and public opinion analysis are not only technical operations, but also involve the principle of authenticity, the responsibility of public expression and the boundaries of media ethics. If artificial intelligence is only used as an answer generator, it may weaken students' critical consciousness. Only when it is incorporated into a teacher-led human-computer collaboration framework as an auxiliary node for verification, revision and analysis will the technology value truly translate into teaching value.

This study also illustrates that the AI-supported teaching model has some potential for expansion. Its core is not dependent on a specific course content, but relies on a modular mechanism composed of platform log collection, behavior feature extraction, personalized recommendation and feedback scheduling. This architecture has a certain degree of curriculum transfer in technology. By adjusting the prompt template, evaluation rules and resource organization around the knowledge structure and practical tasks of different courses, it can be extended to teaching scenarios such as review writing, data news, and short video communication. However, the large-scale promotion of this model still faces several practical constraints, including teachers 'digital ability differences, platform deployment costs, model output stability, and data privacy and algorithm deviation control. From this point of view, the promotion of artificial intelligence to journalism and communication education is clear, but it is more suitable to be understood as a teaching infrastructure that needs continuous correction and institutionalized embedding, rather than an automated system that can operate independently from teachers 'judgment.

5 Conclusion

Focusing on the practical needs of embedding artificial intelligence technology into journalism and communication education and teaching, this paper constructs a teaching reform framework composed of intelligent content generation, fact verification support, revision feedback, learning analysis and teacher regulation, and verifies its application effect in the course experiment. The results show that artificial intelligence is not just an auxiliary tool attached to outside the classroom. It can reconstruct the task organization, feedback link and learning rhythm in the course of journalism and communication through computing mechanisms such as natural language processing, platform log analysis and personalized recommendation. The experimental group was better than the control group in terms of final scores, practical homework quality and classroom participation, indicating that the teaching model supported by artificial intelligence had a relatively stable role in promoting the core abilities of news gathering and writing training, issue analysis, information discrimination and content expression. More notably, the behavioral variables such as text revision, fact checking, and process interaction showed significant positive relationships with learning outcomes, indicating that the effectiveness of technology was mainly reflected in promoting students to participate in more active processing, judgment, and reconstruction processes, rather than replacing students to complete learning tasks. At the same time, there is still room for further improvement of this teaching model. The research samples are mainly from the journalism and communication courses of a single university, and the experiment period is limited to one semester, so its long-term impact, cross-curriculum adaptability, and sustained effect on creative expression still need follow-up observation. The accuracy control of AI-generated content, the boundary of teaching ethics, the risk of students' technology dependence, and the cost of platform deployment are also unavoidable problems. Future research can introduce more course types and multimodal teaching scenarios, and continue to optimize the prompting mechanism, behavior analysis model and teacher intervention interface on the basis of extending the experimental period, so as to promote the application of artificial intelligence in journalism and communication education from local experiments to a more stable, interpretable and generalizable practice form.

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References

[1] Crompton H, Burke D. Artificial intelligence in higher education: the state of the field[J]. International journal of educational technology in higher education, 2023, 20(1): 1-22.

[2] Bond M, Khosravi H, De Laat M, et al. A meta systematic review of artificial intelligence in higher education: A call for increased ethics, collaboration, and rigour[J]. International journal of educational technology in higher education, 2024, 21(1): 4.

[3] Gómez-Diago G. Perspectives to address artificial intelligence in journalism teaching. A review of research and teaching experiences[J]. Revista Latina de Comunicación Social, 2022, 80: 29-46.

[4] Fernández-Barrero M Á, López-Redondo I, Aramburú-Moncada L G. Possibilities and challenges of Artificial Intelligence in the teaching and learning process of Journalism Writing. The experience in Spanish universities[J]. Communication & Society, 2024: 241-256.

[5] Babacan H, Arık E, Bilişli Y, et al. Artificial intelligence and journalism education in higher education: Digital transformation in undergraduate and graduate curricula in Türkiye[J]. Journalism and Media, 2025, 6(2): 52.

[6] Veenstra A S, Wilder M, Shimu F, et al. Journalism students’ use, expectations, and understanding of generative AI tools[J]. Journalism & Mass Communication Educator, 2025, 80(1): 115-128.

[7] Mayo-Cubero M. Exploring Journalism Education in the AI Era: A Mixed Analysis of University Training in Spain[J]. Journalism & Mass Communication Educator, 2026, 81(1): 19-36.

[8] Wenger D, Hossain M S, Senseman J R. AI and the Impact on Journalism Education[J]. Journalism & Mass Communication Educator, 2025, 80(1): 97-114.

[9] Biswas M, Bland D. AI in journalism and communication teaching: Use, challenges and opportunities[J]. Teaching Journalism & Mass Communication, 2024, 14(1): 11-20.

[10] Aitamurto T, Boyles J L. Next generation journalistic norms: journalism students’ social

imaginary of AI-infused journalism[J]. Journalism Practice, 2025, 19(10): 2230-2248.

[11] Powers E, Arif R, Fedner M, et al. " A Starting Point and a Crutch": Student and Faculty Perceptions of Generative AI[J]. Teaching Journalism & Mass Communication, 2025, 15(1): 2-12.

[12] Alonso-Muñoz L, Casero-Ripollés A. Adoption of Generative AI in Higher Education: Perceptions of Journalism Students[J]. Information, 2026, 17(2): 189.

[13] Mambwe E. Exploring the integration of artificial intelligence into the teaching hospital model of journalism education in resource-constrained Zambia[J]. Frontiers in Communication, 2025, 10: 1625763.

[14] Sarrionandia B, Peña-Fernández S, Ángel Pérez-Dasilva J, et al. Artificial intelligence training in media: addressing technical and ethical challenges for journalists and media professionals[J]. Frontiers in Communication, 2025, 10: 1537918.

[15] Hollanek T, Peters D, Drage E, et al. AI, journalism, and critical AI literacy: exploring journalists’ perspectives on AI and responsible reporting[J]. AI & SOCIETY, 2025, 40(8): 6393-6405.

[16] Ncube L, Mofokeng R W, Chibuwe A, et al. ‘Mind the gap’: artificial intelligence and journalism training in Southern African journalism schools[J]. Media Practice and Education, 2025: 1-17.

[17] Kuleto V, Ilić M, Dumangiu M, et al. Exploring opportunities and challenges of artificial intelligence and machine learning in higher education institutions[J]. Sustainability, 2021, 13(18): 10424.

[18] Tan X, Cheng G, Ling M H. Artificial intelligence in teaching and teacher professional development: A systematic review[J]. Computers and Education: Artificial Intelligence, 2025, 8: 100355.

[19] Ilieva G, Yankova T, Klisarova-Belcheva S, et al. Effects of generative chatbots in higher education[J]. Information, 2023, 14(9): 492.

[20] Michel-Villarreal R, Vilalta-Perdomo E, Salinas-Navarro D E, et al. Challenges and opportunities of generative AI for higher education as explained by ChatGPT[J]. Education sciences, 2023, 13(9): 856.

[21] Mah D K, Groß N. Artificial intelligence in higher education: exploring faculty use, self-efficacy, distinct profiles, and professional development needs[J]. International Journal of Educational Technology in Higher Education, 2024, 21(1): 58.

[22] Chen K, Tallant A C, Selig I. Exploring generative AI literacy in higher education: student adoption, interaction, evaluation and ethical perceptions[J]. Information and Learning Sciences, 2025, 126(1-2): 132-148.

[23] Arowosegbe A, Alqahtani J S, Oyelade T. Perception of generative AI use in UK higher education[C]//Frontiers in Education. Frontiers Media SA, 2024, 9: 1463208.