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Constructing a talent cultivation model for audiovisual communication in broadcasting and hosting education integrated with AI programs in the era of artificial intelligence

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Abstract: In the context of media convergence and the profound penetration of AI technology, traditional broadcasting and hosting education faces three critical challenges: a shallow professional foundation, disjointed practical pathways, and superficial value recognition. Drawing upon the innovative practice experiences of the *Television Program Broadcasting and Hosting* course at Xinyu University, this paper proposes a talent cultivation model centred around the core philosophy of ‘self-pleasure and fulfilling others’. This approach leverages AI programs to establish a ‘three-dimensional linkage’ training model. This model integrates the ‘PIRIR five-step cyclical training method’, the ‘Joyful Audio’ intelligent platform, and a four-layer, five-dimensional evaluation system, thereby creating an integrated loop of ‘learning, practicing, creating, and broadcasting’. Empirical data reveal that students have garnered 18 provincial-level and above competition awards in broadcasting and hosting, and the total viewership for original video programs has exceeded 300 million. Furthermore, volunteer service has accumulated a total of 12,000 hours, while single-event sales during intangible cultural heritage live broadcasts have surpassed ten million yuan, thereby substantiating the effectiveness of this model. This study offers a practical paradigm for the cultivation of audiovisual communication talents in the new era, deeply intertwining technology and education.

Keywords: AI-assisted teaching; broadcasting and hosting arts; audiovisual communication; talent cultivation model.

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1 Introduction

The concept of artificial intelligence (AI) first emerged at the Dartmouth Conference in 1956, proposed by John McCarthy and others. This conference marked the inception of AI as an independent discipline. Prior to this, mathematician Alan Turing introduced the renowned Turing Test in 1950, providing a theoretical foundation for the assessment of AI (Li and Zhang, 2021). In an era where media convergence and AI technologies are intricately intertwined, the broadcasting and hosting industry is undergoing a paradigm shift from ‘single skills’ to ‘comprehensive media literacy’. Traditional teaching models, hampered by reliance on subjective evaluations, limited practical scenarios, and weak value guidance, struggle to meet the industry’s demand for versatile talents who can ‘express well, innovate effectively, and take responsibility’. In the field of research, scholars have shown widespread interest in the transformative impact of AI on education and teaching, with ongoing explorations into the connotation, value, application models, monitoring, and evaluation of AI-enabled education (Li et al., 2023). This paper systematically articulates the specific paths of AI empowerment, offering a replicable teaching paradigm for cultivating audiovisual communication talent in the new era.

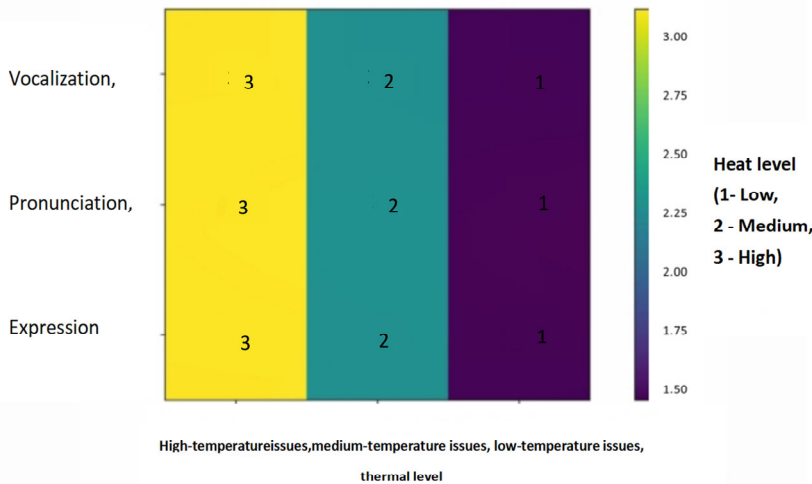
2 The necessity of AI technology in empowering broadcasting and hosting education and solutions to existing challenges

To fully highlight the necessity of the AI-integrated training model, it is necessary to first identify the core shortcomings of the traditional teaching model. In terms of personalised guidance in traditional broadcasting and hosting teaching, due to the limited energy of teachers, it is difficult to accurately match individual students’ voice defects and differences in expression styles. In terms of practical scenarios, studio resources are scarce and the scenarios are single. Simulation training is disconnected from the real needs of the industry, and creation is prone to becoming hollow. Only by constructing simulated scenarios and connecting them with real media channels to form a ‘virtual polishing-real testing’ practice chain can students hone their skills in scenarios that are close to the industry.

2.1 A shallow professional foundation: the gap caused by lack of feedback

With the advancement of AI technology, its impact on the media industry is becoming increasingly profound (Wang and Chen, 2024). Broadcasting and hosting, being fundamentally an ‘oral and auditory discipline’, rely heavily on precise feedback during practical training. However, traditional education methods often emphasise subjective evaluations, leading to insufficient feedback quality and timeliness. Empirical research indicates that 85% of students exhibit deficiencies in impromptu verbal expression, 78% struggle with preparation skills, and 62% find it challenging to master scientific vocalisation techniques. In conventional models, the delayed identification of students’ skill deficiencies and vague corrective strategies result in a perpetual cycle of low-level competency development. The reliance on teachers’ experiential assessments in traditional education fails to adequately address micro-dimensions such as vocal tone and emotional resonance. In contrast, AI programs, utilising technologies like speech recognition and emotion computation, enable pinpointed identification of issues. For instance, the AI-powered application ‘Joyful Audio’ features an intelligent assistant named ‘Boxiaoyin’, which can analyse sound wave spectrums in real-time, accurately identifying details such as ‘nasal sound confusion’ and ‘insufficient pitch variation’ while generating a *sound training problem heatmap* (as shown in Figure 1).

Figure 1 Joyful sound training problem heat map (see online version for colours)



Interpretation guide for the chart – the colour logic ranges from deep blue (high priority) to light yellow (low priority), corresponding to the urgency of the identified issues, emphasising foundational stability before progressing to finer details. As noted by Zhan and Zhu (2021), “the specific training directions within film and television departments continue to focus on cultivating professionals for traditional broadcasting organisations, somewhat disconnected from the practical market environment”. This conclusion serves as a crucial reminder in our teaching practice. A solid foundation is essential for transformation; strengthening the basics is vital for innovative advancement. The integration of AI in 2024 has boosted students’ basic skills proficiency by 13%,

evidenced by the rise in Putonghua level 1 grade B pass rates from 15% (2022) to 40%, underscoring technology's impact on reinforcing core expertise.

2.2 *The disjoint practical pathways: the erosion of creative substance due to ambiguous contexts*

The core mission of professional education is to 'tell compelling Chinese stories', which necessitates authentic contextual support. However, traditional teaching is plagued by three significant contradictions: the limited resources of broadcasting studios in contrast to students' practical needs (with Xinyu University's four studios meeting only 60% of demand), the high barriers to entry for competitions resulting in low participation rates (with less than 20% involvement in competitions at the university level and beyond), and the disparity between virtual training and the genuine requirements of the industry. This has led to a threefold hollowing out characterised by 'repetitive themes, singular perspectives and ineffective communication'.

As noted by Zhan and Fang (2024) in 'The sensory synesthesia of digital audiovisual production from the perspective of 'technological-cultural evolution'', the demand for talent in the increasingly complex media ecology has shifted from specialists skilled in a singular competency to application-oriented individuals possessing comprehensive multimedia skills.

AI technology addresses these dilemmas by constructing a dual-track practical environment of both 'simulation and reality'. On one hand, AI can replicate over 30 typical media scenarios, such as live broadcasts of intangible cultural heritage, rural revitalisation reporting, and emergency news coverage. For instance, in the 'Jiangxi Cultural Journey' module, students can engage in an AI-simulated 'Jingdezhen Ceramics Live Broadcast' scenario, honing skills related to camera operation and product narration. On the other hand, AI collaborates with authentic channels such as the JD Live Base and Jiangxi News to translate the outcomes of virtual training into tangible results. Through contextually immersive training, student participation in practical activities surged from 38% to 91%, and the average monthly viewership of original IP videos increased from 10 in 2022 to 25 in 2024, verifying the value of AI in integrating the practice chain.

2.3 *Superficial value recognition: the traffic-oriented approach diluting the essence of education*

In the era of media integration, certain students are prone to fall into the cognitive pitfall of 'technological supremacy' and 'traffic dictatorship', thereby neglecting the ideological depth and cultural significance of content. Without value anchor points, skill training in the all-media era is likely to result in a talent cultivation process that prioritises technical prowess over ethical foundation. AI strategically guides cognitive enhancement through 'value-embedded' design.

Firstly, it establishes a resource repository known as the 'six value pillars', which integrates ideological materials such as revolutionary narratives, national spirit, and intangible cultural heritage. AI curates and suggests relevant content based on the teaching timeline; for instance, within the 'Jiangxi Cultural Journey' module, it incorporates regional cultural case studies pertaining to Wang Anshi's reforms and Jingdezhen ceramics. Secondly, it develops a talk-show module titled 'One Topic per

Lesson', wherein AI evaluates the ideological expressiveness of students' contributions, employing semantic analysis to identify the frequency of keywords such as 'patriotism' and 'social responsibility'. Thirdly, the dissemination of values is integrated into the assessment criteria, accounting for 30% of the overall evaluation. In live broadcasts of intangible cultural heritage, the depth of cultural interpretation significantly impacts the final score. This design achieves a harmonic resonance between skill training and value guidance, enabling 85% of student projects to embody a social value orientation.

Through precise feedback, contextual reconstruction, and value embedding, a new paradigm of technological empowerment is provided for the cultivation of broadcasting and hosting professionals. As Zhan and Zhu (2021) highlight, "in the increasingly complex media ecology of audiovisual communication, the industry's demand for talent has transitioned from specialists skilled in a singular craft to application-oriented individuals possessing comprehensive multimedia competencies". AI technology effectively navigates this predicament by offering a dual-track practical environment of both 'simulation and reality'.

3 Constructing innovative models for integrating AI programs into broadcasting and hosting education

The theory of personalised learning posits that learning should be learner-centred and tailored to individual differences. It emphasises that teaching needs to be precisely designed based on learners' cognitive levels, learning styles, and skill shortcomings. The core idea of situated cognition theory is that learning should be embedded in real-life situations and focus on practical transfer. It believes that the acquisition of knowledge and skills requires reliance on real or simulated practical scenarios, and effective transfer is difficult to achieve without contextual learning.

3.1 The 'PIRIR five-step cyclical training method' and its synergistic closed loop with AI

Grounded in the theory of deliberate practice and the unique characteristics of the broadcasting and hosting discipline, the team has developed the 'PIRIR five-step cyclical training method' (preparation-introduction-recording-inspection-re-evaluation), wherein AI deeply engages at each phase to form a collaborative mechanism of 'technological empowerment and human enhancement'. The AI program can precisely locate functions and refine mechanisms according to the entire teaching process, enhancing the operability of the model. In the pre-class preview stage, the function is positioned as 'learning situation diagnosis + resource adaptation'. In the classroom training stage, it focuses on completing training construction through 'selecting scenarios → real-time practice → AI instant feedback optimisation' (about 15 minutes). In the post-class review stage, AI summarises classroom data to generate a report on weak points, pushes customised practice materials (about 15 minutes), tracks training trajectories, dynamically adjusts the plan, and forms a closed loop. Details are as follows:

During the preparation phase, AI implements personalised teaching through learner profiles. For students with foundational weaknesses, it recommends low-level resources such as videos on 'comparative practice of alveolar initials and retroflex initials' focused on correcting consonants and breath training. In contrast, advanced learners receive

high-level materials such as structural analyses of news broadcasts and programming for cross-cultural communication (as shown in Figures 2 and 3).

Figure 2 Improvement of news article reading efficiency (see online version for colours)

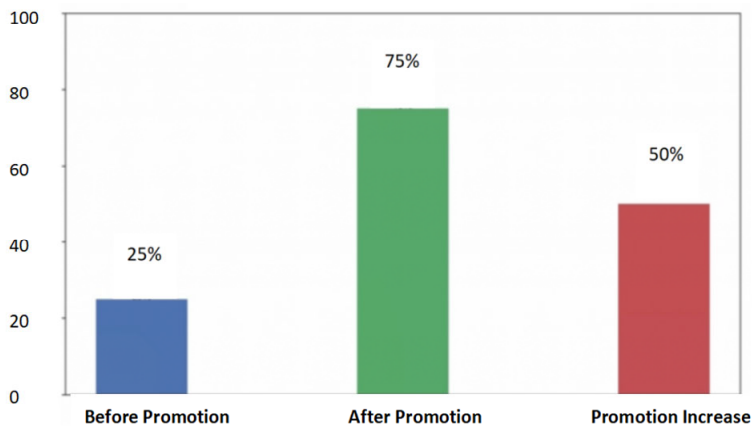
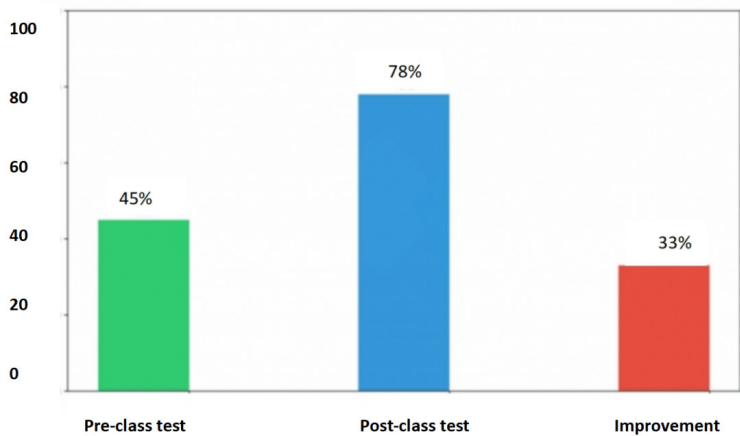


Figure 3 The effect of pre-class introduction videos on the improvement of knowledge absorption rate (see online version for colours)



Testing has demonstrated that personalised resource recommendations can elevate students’ proficiency in ‘news article comprehension efficiency’ from a 25% success rate to an impressive 75%, representing an overall enhancement of 50%. In this practice, knowledge absorption, following the viewing of introductory videos prior to lessons, rose from 45% to 78%, substantiating this assertion.

In the introduction phase, instructors utilise AI-analysed pre-test data to elucidate critical points. For instance, after analysing the initial assignments, AI revealed that 70% of students were grappling with ‘redundancy in crafting news leads’. In response, instructors provide targeted guidance on the application of the ‘inverted pyramid structure’ and engage students with the ‘one topic per lesson’ creative expression module, prompting them to contemplate ‘how to convey core values succinctly’.

In the recording phase, AI continuously monitors multiple dimensions of performance. In terms of vocal metrics, it tracks parameters like sound pressure level and fundamental frequency, offering suggestions such as “the speaking rate for reporting human interest stories should be maintained at 220 words per minute”. The emotional dimension is assessed through facial recognition and voice sentiment analysis to determine ‘alignment with the program’s tone’, while the logical dimension employs NLP techniques to scrutinise ‘the robustness of arguments’. Students receive immediate access to AI-generated *training diagnosis reports* for targeted adjustments (as shown in Figure 4).

Figure 4 Analysis of AI voice evaluation indicators (weighing and scores) (see online version for colours)

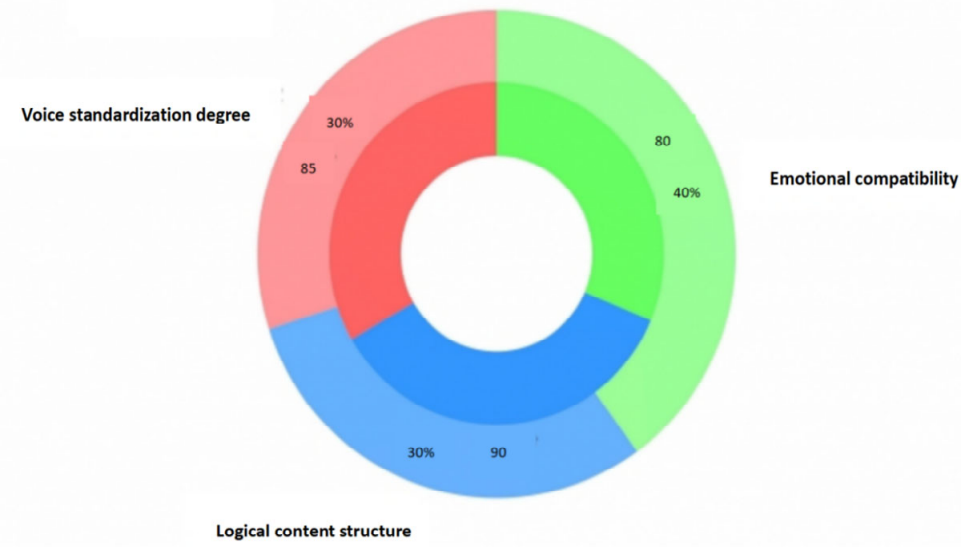
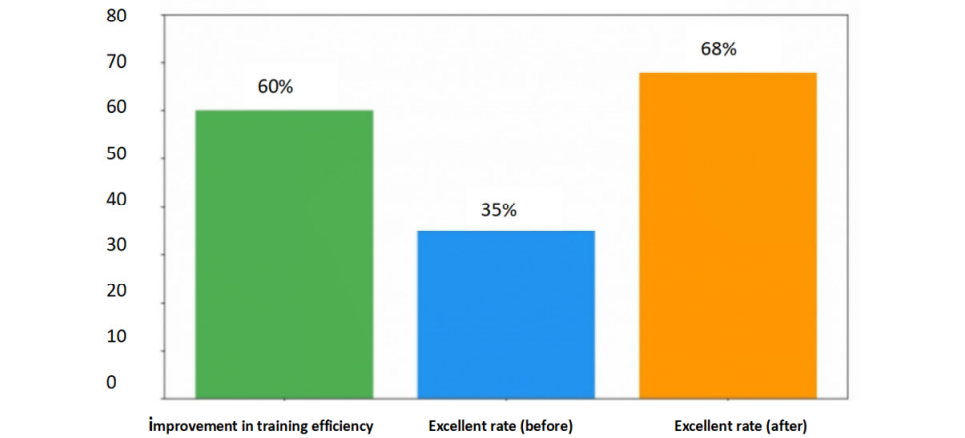


Figure 5 Closed-loop design enhance the training effect (see online version for colours)



During the inspection phase, AI conducts initial evaluations en masse, which are subsequently complemented by in-depth assessments from instructors. AI assigns scores based on ‘speech accuracy (30%), content logicity (30%), and emotional appropriateness (40%)’, identifying typical problematic works; instructors, on the other hand, concentrate on higher-order dimensions such as ‘value expression’ and ‘innovation design’, for instance, evaluating whether ‘humanistic concern is evident in rural revitalisation reports’.

Finally, in the re-evaluation phase, AI generates personalised training checklists. Based on the data from the initial four phases, it recommends ‘secondary training tasks’ for students. For those who exhibit ‘insufficient emotional expression’, targeted exercises such as ‘empathy techniques for disaster news reporting’ are assigned (as shown in Figure 5).

This closed-loop design enhances training efficiency by 60%, leading to an increase in the outstanding rate of students’ secondary works from 35% to 68%.

3.2 The intelligent ecological architecture of the ‘joyful audio mini program’

As Marx aptly stated, “People create their environment; likewise, the environment shapes the individual” (The Compilation Bureau of Marx and Stalin Works of the Central Committee of the Communist Party of China, 1994). Emphasising the interactive relationship between environment and talent development is essential. A pivotal question arises: how can we transcend the static and enclosed nature of traditional classroom training to establish a dynamic nurturing model that deeply integrates education, industry, and creative management? As the core vehicle for AI-empowered teaching in television program broadcasting and hosting courses, the ‘Joyful Audio Mini Program + Learning Link’ creates a tripartite ecological framework of ‘skill training-resource integration-value dissemination’, facilitating a seamless connection between instruction and practice.

3.2.1 Skill refinement module

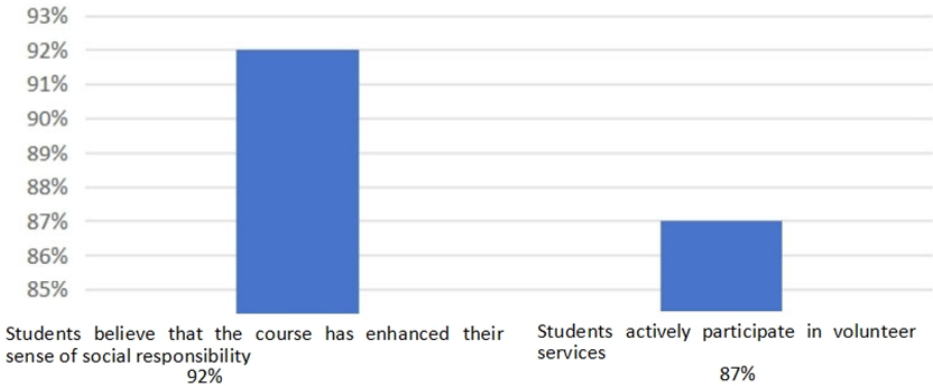
This module encompasses three main features: ‘daily expression’, ‘thematic training’, and ‘simulated hosting’. The ‘daily expression’ feature offers one-minute timed expression exercises, with AI evaluating performance based on ‘clarity of viewpoint’, ‘logical coherence’, and ‘linguistic appeal’, while providing exemplary cases for reference. The ‘thematic training’ targets various program types – news, variety shows, and interviews – where AI offers comprehensive guidance from ‘script generation’ to ‘camera coordination’ and ‘interaction design’. For instance, in culinary program training, it recommends a narrative framework that integrates ‘local culture with ingredient stories’. The ‘simulated hosting’ connects to campus television stations and self-media channels, allowing student projects to be aired post-AI review, thus forming a closed-loop of ‘training-output’. This ‘learn and apply’ model substantially enhances the alignment between talent cultivation and industry requirements, evidenced by a feedback satisfaction rate of 92% from student broadcasts in this practice.

3.2.2 Resource integration module

This module links to seven national standard promotion bases and over ten media collaboration partners, with AI intelligently matching practical opportunities according to

students’ strengths and needs. For example, students with level 1 grade B proficiency in Putonghua are matched with rural language and aesthetic education volunteer programs, while those skilled in short-video creation are connected to initiatives like the ‘Jiangxi Cultural & Tourism Promoter’ project (as shown in Figure 6).

Figure 6 Volunteer service intention survey after class (see online version for colours)



As a result, student participation in practical activities surged from 38% to 91%, accumulating a total of 12,000 hours of volunteer service. The principal of Qinghai Tibetan Medicine School remarked, “the training provided by Joyful Audio enhances students significantly through a blend of ‘professionalism and public service’, allowing them to grasp the social value and significance of language expression”.

3.2.3 Value dissemination module

The intelligent material library comprises two main sections: ‘Joyful Audio Story Collection’ and ‘China Sound Repository’. The ‘Joyful Audio Story Collection’ features 120 stories related to national pride and intangible cultural heritage, enabling students to engage in secondary creation using AI-generated ‘narrative script templates’. For instance, they might design an expression plan for the story of ‘Qian Xuesen’s Old Pocket Watch’, employing a “narrative of objects incorporating emotional resonance”. Meanwhile, the ‘China Sound Repository’ aggregates outstanding student works and exemplary industry benchmarks. AI conducts a ranking of student performances based on dissemination metrics (views, likes, shares), fostering a pursuit of the unity between ‘social value and dissemination effectiveness’ among students.

3.3 AI empowerment of a four-layer, five-dimensional evaluation system

To achieve the evaluation objective of ‘process-oriented growth + high-order breakthroughs’, the team has constructed an AI-assisted four-layer, five-dimensional evaluation system, expanding the evaluation dimensions based on the original framework to include AI-generated process data and industry expert assessments. By adopting a combination of quantitative and qualitative methods, it breaks the limitations of the traditional ‘one test determines excellence or inferiority’ approach. Group leader scoring (20%), AI records data such as the frequency of group discussion participation and

contribution to the plan, assisting the group leader in objective scoring. Teacher/corporate mentor scoring (30%), focusing on professional depth, with AI providing ‘comparative analysis of similar works’ for reference. Course expert group scoring (30%), AI preprocesses data such as ‘innovation point identification’ and ‘value element extraction’ of the work, improving review efficiency.

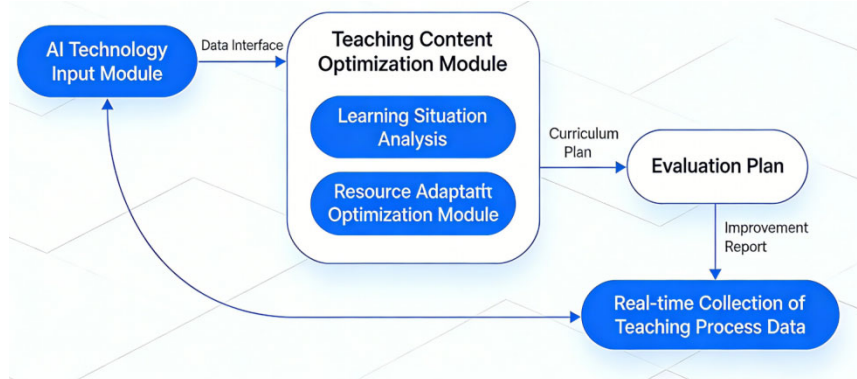
Audience feedback (20%), AI statistics on viewership, completion rate, comment sentiment orientation, etc., to quantify social recognition.

The ‘five-dimensional evaluation index’ covers the full spectrum of ‘ability-literacy-value’: including engagement recorded by AI behaviour data, basic skills in technical assessment, execution ability in tracking task quality, innovativeness in identifying innovative points through comparing industry cases, and dissemination ability combining platform data with social benefits. The system processes 80% of the quantitative data with AI, while teachers focus on 20% of high-level qualitative evaluation, which not only improves evaluation efficiency but also significantly enhances the consistency of results with industry employment standards.

4 Specific applications of AI programs in talent development

In combination with the demand positioning for emerging positions such as virtual anchors and cross-media content planning outlined in the ‘2024 National Radio and Television and Online Audio-Visual Industry Development Report’ by the National Radio and Television Administration, this model focuses on the core competencies of audio-visual communication talents in the AI era (application of AI tools, cross-media content creation, human-machine collaborative communication, cultural communication ability, etc.), and establishes a hierarchical training objective of ‘basic skills-advanced skills-professional ethics’, ensuring a precise match between talent cultivation and industry needs.

Figure 7 Educational technology architecture (see online version for colours)



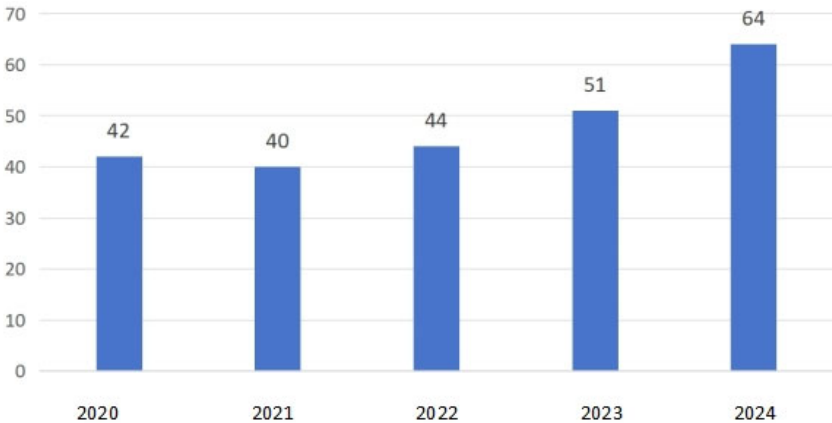
4.1 *Enhancement of fundamental skills: from ‘standard pronunciation’ to ‘artistic expression’*

AI advances language proficiency from ‘normative’ to ‘artistic’ through a three-tiered training approach encompassing ‘error correction, skill acquisition, and aesthetic appreciation’. Utilising voice recognition technology, AI constructs a ‘standard pronunciation database’, which includes samples from prominent figures such as CCTV anchors and winners of prestigious awards like the Golden Microphone. During practice sessions, the system continuously compares students’ phonetic parameters (such as the articulation points of initials, the degree of openness in finals, and tonal variation) with the standard samples, enabling precise identification of technical deficiencies and generating a *checklist of phonetic issues*. For instance, to address the common issue among southern students of ‘inaccurate articulation of retroflex sounds’, AI provides ‘illustrative diagrams of tongue placement’ and ‘demonstration audio for practice’, along with a three-tiered corrective training structure focused on ‘word differentiation-sentence application-paragraph expression’.

Data indicates that this module has increased the passing rate of Putonghua level A from 44% in 2022 to 64% in 2024.

In terms of skill enhancement, the ability to transfer techniques to diverse contexts has seen substantial improvement. AI simulates the linguistic requirements of various program types, training students to adjust their speech according to context. In news broadcasting, AI instructs on ‘maintaining a moderate pace (200–220 words per minute), adopting a solemn tone, and ensuring logical clarity’, while reinforcing understanding through ‘annotated error examples’ (such as delivering ‘disaster news’ too lightly). In the realm of variety hosting, the focus is on ‘conversational expressions’ and ‘creating an interactive experience’, wherein AI offers a ‘repository of improvisational techniques’ for reference. This contextualised training is crucial for transitioning language skills from the ‘classroom’ to the ‘workplace’, with students achieving a 70% improvement in fluidity when switching between different linguistic environments (as shown in Figure 8).

Figure 8 The passing rate of the Putonghua proficiency test level 1 and level 2 in the past five years (see online version for colours)



With regard to aesthetic enhancement, the program aims to elevate the emotional resonance of expression. AI employs emotion recognition technology to analyse the ‘emotional features’ present in speech (such as variations in speed, volume, and intonation) to guide students in aligning emotion with content. For example, in the ‘revolutionary storytelling’ training, AI advises slowing down and lowering pitch at keywords such as ‘sacrifice’ and ‘dedication’ to amplify emotional impact. Huang (2024), the Vice Secretary of the Sichuan Provincial Committee and Governor, remarked at the opening ceremony of the 11th China Online Audio-Visual Conference that “spiritual and cultural products deeply integrated into people’s daily lives are a powerful driving force for high-quality development”. It is essential that teaching intertwines with current societal dynamics, analysing the ‘emotional features’ of speech to help students activate their capacity for empathy.

4.2 *Cultivation of advanced abilities: from ‘program creation’ to ‘integrated media communication’*

AI facilitates a comprehensive upgrade in the entire chain of ‘content creation-form innovation-communication optimisation’, fostering students’ all-media mindset.

Transitioning from ‘imitation’ to ‘originality’, AI constructs a ‘program case library’, encompassing 12 categories, including news, interviews, and lifestyle services, with each category comprising three components: ‘exemplary case analysis-structural templates-extraction of innovative points’. When students plan their programs, AI recommends reference cases based on the theme; for instance, when creating a program focused on ‘cultural heritage preservation’, it suggests the ‘narrative style’ of *National Treasures* and the ‘youthful expression’ techniques from *New in the Imperial Palace*, while also advising, ‘avoid duplication with the existing 86 similar programs’. Building on this foundation, AI encourages students to infuse their personal creativity, such as proposing, ‘Combine traditional craftsmanship with contemporary design to captivate younger audiences.’ This ‘case inspiration-innovation guidance’ model has resulted in a 200% increase in the number of original programs created by students over three years, with students securing 18 provincial-level awards in hosting competitions, including two first-place accolades in provincial explaining competitions.

Additionally, data-driven efficacy enhancement occurs as AI analyses the dissemination patterns across various platforms to optimise communication, providing precise deployment recommendations for students. On Douyin, AI suggests, “establish suspense in the first three seconds (e.g., ‘how the intangible cultural heritage inheritor solved this problem using this method’) and utilise popular BGM”. For WeChat video accounts, it emphasises that “the title should reflect the value point (e.g., ‘after watching this video, I understand the commitment to intangible cultural heritage’) and guide sharing text”. Furthermore, AI continuously monitors the dissemination data of works; for example, if it detects that “a certain rural food video has a low click-through rate among women aged 35–50”, it recommends “adding ‘home cooking tips’ content to attract the target audience”. This cycle of ‘data feedback-content adjustment’ has led to a 60% improvement in the dissemination efficiency of student works.

4.3 *Shaping professional qualities: from ‘career awareness’ to ‘sense of mission’*

AI nurtures students’ professional ethics and social responsibility through a tri-dimensional approach encompassing ‘case immersion-scenario simulation-practical reinforcement’.

4.3.1 *Understanding professional ethics: establishing industry boundaries*

AI constructs an ‘industry ethics case library’, featuring positive exemplars (such as Bai Yansong’s ‘objective and neutral’ reporting) alongside cautionary tales (such as incidents of false news and privacy invasion), and devises ‘ethical decision-making simulation’ scenarios. For instance, in training focused on ‘reporting on sudden accidents’, AI poses choices like “should the victim’s face be exposed?” and “how do we balance timeliness with authenticity?”. After students make their decisions, the system analyses the ethical logic behind their choices and provides relevant provisions from the *Code of Professional Ethics for Journalists*. This training effectively guides students in accurately identifying professional ethical risks.

4.3.2 *Emphasising the cultivation of cultural confidence, rooted in China*

AI introduces a ‘Chinese Cultural Resource Package’, encompassing revolutionary stories, intangible cultural heritage, and regional customs, requiring students to integrate cultural elements into their works. For instance, in the ‘Joyful Audio Story Collection’, students are tasked with employing broadcasting skills to convey themes such as the ‘Spirit of Jinggangshan’ and ‘Jingdezhen Ceramic Culture’. AI evaluates works based on three dimensions: ‘accuracy of cultural elements’, ‘expressive impact’, and ‘innovation of the era’. Results indicate that, through this module, the frequency of cultural symbols in student works has increased threefold, with the *Jiangxi Cultural Journey* series achieving over one billion views online, becoming a significant showcase for local cultural tourism promotion.

Bridging the classroom to society, AI guides students to transform their professional abilities into social services through a closed-loop approach of ‘volunteer service matching-process tracking-value extraction’. In the educational platform ‘Joyful Audio Project’, AI aligns students’ strengths with public welfare projects in language standardisation and aesthetic education. Upon completion of their service, students are prompted to write a *Public Welfare Reflection Report*, elucidating themes such as ‘how verbal aesthetic education supports rural revitalisation’. This initiative has garnered six provincial and municipal ‘Outstanding Volunteer Project’ honours and, based on this course practice, won first place in the Fifth Jiangxi Province College Teaching Innovation Competition, validating the practical value of the ‘benefiting oneself while helping others’ philosophy.

5 Educational practice outcomes and data validation

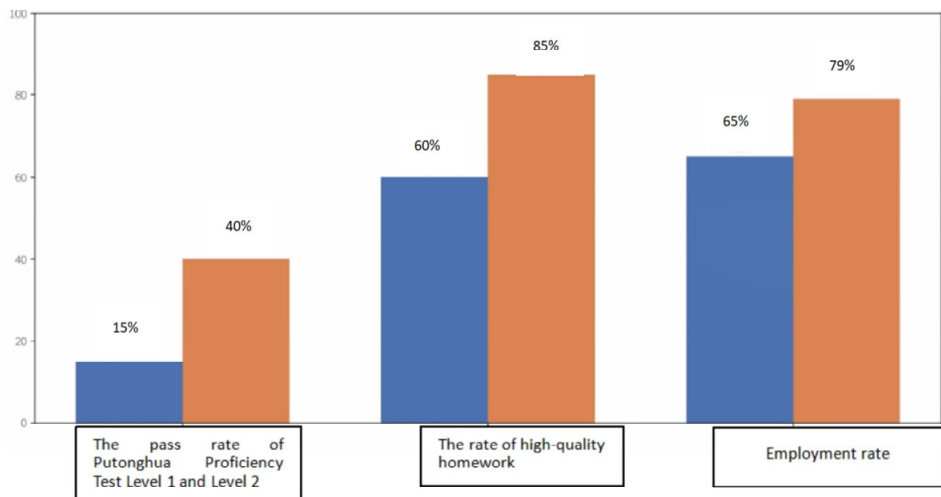
To verify the practical value of the model, in addition to the core practical data from Xinyu University, we have supplemented with brief practical cases and comparative

experimental data from two pilot universities: case 1: the College of Science and Technology at Jiangxi Normal University introduced the core module of the ‘Yueyin Shengmei Mini Program’ to conduct a pilot of the ‘Business Etiquette Hosting’ course. The one-semester practice showed that the student’s voice foundation compliance rate increased by 11%, and the excellent rate of impromptu expression increased by 18%. At the same time, through a questionnaire survey collecting feedback from 120 students, 89% of the students believed that the AI-integrated teaching model significantly improved learning efficiency, and 85% of the students recognised the model’s role in cultivating professional skills.

5.1 Quantitative achievements: comprehensive enhancement of ‘professional competence dimensions’

Following educational practices, students have garnered 18 provincial-level and above awards in broadcasting and hosting, including five national awards, among which are four gold medals from the Caocan Cup and two first-place prizes from the Future Golden Microphone competition (as shown in Figure 9).

Figure 9 Comparison of core indicator improvements between 2022 and 2024



Skills have reached benchmark standards, with the pass rate for Putonghua level 1 grade B rising from 15% in 2022 to 40% in 2024, and the quality rate of assignments improving from 60% to 85%. Additionally, the employment rate has increased from 65% to 79%.

In terms of practical dissemination, the influence of student works has significantly grown, with original video programs accumulating over 300 million views and surpassing ten million likes. Notably, a single session of the ‘Intangible Cultural Heritage Xiangyunsha Livestream’ achieved sales exceeding ten million yuan.

From a social value perspective, a cumulative total of 12,000 hours of volunteer service in verbal aesthetic education has been completed, encompassing seven ethnic minority regions (as shown in Figures 10 and 11).

Figure 10 The number of people who passed the second class A with 90 points or more (see online version for colours)

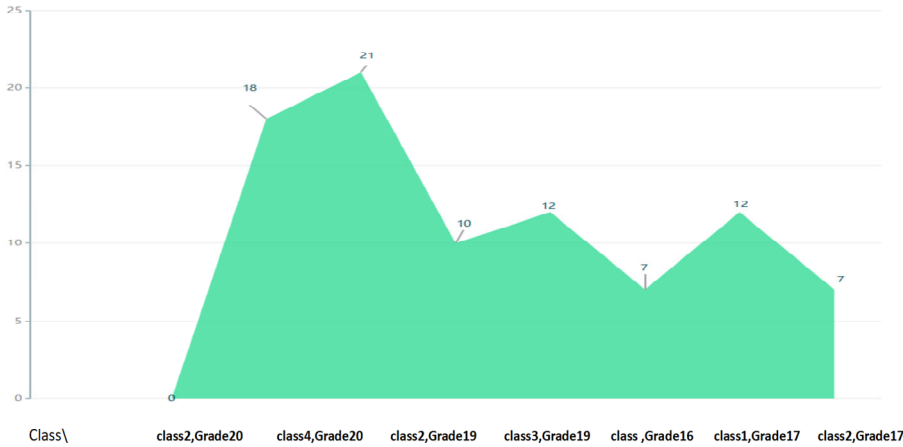
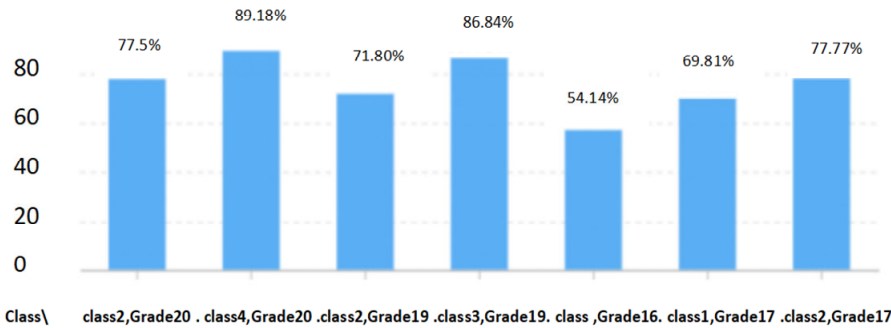


Figure 11 Proportion of Chinese language class who pass the Mandarin test at one time (see online version for colours)



Outstanding course participants have taken on the role of volunteers to implement vocal language beautification training for aspiring teacher candidates. Following the completion of a full project training cycle, statistical analysis of the distribution of candidates passing the Putonghua level 2 grade A test reveals significant results. The ‘pleasurable voice’ vocal enhancement training for future Chinese literature teachers has proven highly effective. Among the experimental group of 155 individuals trained, 125 (81.30%) attained their first pass in the level 2A test; in contrast, the control group of 166 individuals who did not participate experienced a pass rate of 68.24%. This training initiative thus led to a notable 13% increase in passing rates.

Within the high-scoring segment of level 2 grade A (scores above 90), 61 trainees from the 2019 and 2020 cohorts successfully qualified, accounting for 39.35% of their group and 44.52% of total passes. Conversely, only 26 individuals from the untrained 2016 and 2017 cohorts passed, corresponding to 16.66% and 16.45%, resulting in a 22.69% increase in the proportion of high scorers among the trained group. Independent sample t-tests of Chinese Language scores from the college entrance examination indicated no significant differences in language proficiency based on students’ province

of origin, confirming the effectiveness of the training in enhancing Putonghua pronunciation standards and the normative use of vocabulary and grammar.

In terms of cultural dissemination, the compilation *Joyful Audio Story Collection* features 120 Chinese stories, supporting the ‘MOOC Westward Journey’ project. This initiative has fortified the consciousness of a shared Chinese national identity and received special coverage on the ‘Xuexi Qiangguo’ platform.

5.2 *Qualitative breakthroughs: from ‘curriculum innovation’ to ‘paradigm output’*

The teaching model has gained recognition, with the course designated as a provincial first-class curriculum in 2023, and subsequently receiving approval as a school-level ideological and political demonstration course and a provincial exemplary project in 2024. The resource package for the course titled *Television Program Broadcasting and Hosting* generated through the ‘Learning · Practice · Creating · Broadcasting’ closed-loop model has been referenced by 22 higher education institutions, including core curriculum incorporations at Communication University of Zhejiang and Anhui University of Arts.

The industry and media have expressed their endorsement of the initiative; the ‘Joyful Audiol China Tour’ project was featured in a report by the *People’s Daily*, which lauded its effort to ‘convey Chinese strength through youthful voices’. Additionally, students have served as outdoor hosts for CCTV’s *Xi Shang Jia Xi*, demonstrating a seamless integration of professional training with industry demands.

Academic recognition has also followed, as the teaching team published 20 papers, including four in core academic journals. The authored *Speech Hosting Practice Manual* has been designated as a school-level ‘14th Five-Year Plan’ textbook and has been shared as a model of experience at teaching forums held at institutions such as Xiamen University and Renmin University of China.

6 Challenges and optimisation paths of AI technology application

Regarding the analysis and avoidance of ethical risks in technology, it is necessary to strengthen and improve the comprehensiveness and foresight of model construction. The core risks are concentrated in two aspects: one is privacy protection issues, and the other is algorithmic fairness issues. At the data security level, blockchain technology should be adopted for data desensitisation to ensure that technology application is consistent with the social responsibility requirements of broadcasting and hosting majors.

6.1 *Existing challenges and technological limitations: dual bottlenecks of accuracy and context*

In the teaching practices of the broadcasting and hosting program at Xinyu University, the application of AI technology encounters three significant real-world dilemmas.

6.1.1 *Insufficient emotional recognition accuracy*

AI struggles with accurately recognising complex vocal emotions. For instance, its accuracy in identifying compound emotions, such as ‘determination amidst tears’ or

‘critique within humor’, stands at only 48%. During practical exercises with the ‘Joyful Audio’ app, 30% of students reported that “AI’s judgments regarding subtle tonal variations are overly mechanical”, misclassifying ‘restrained empathy’ in news reports as ‘lack of emotion’. This aligns closely with Liu’s (2025) observation that “AI cannot replace interpersonal emotional interactions” particularly pronounced in the field of broadcasting and hosting, which emphasises the infusion of emotion in voice.

6.1.2 Clumsy dynamic scene simulation

Zhan emphasises that ‘audiovisual communication must closely reflect real circumstances’. However, the current AI simulations of scenarios such as breaking news events and cross-cultural interviews remain confined to fixed script formats. Students at Xinyu University discovered during the ‘virtual reporting on the two sessions’ training that the AI-generated virtual guest questions lacked randomness, hampering the development of their core skills in ‘on-the-spot adaptability’. Furthermore, professional instructors are required to provide in-depth policy analyses and factual explanations, highlighting a significant gap between AI simulation training and authentic media work environments.

6.1.3 Blurred boundaries of human-AI collaboration

Forty-five percent of faculty members have reported a phenomenon termed ‘AI evaluation dependency’. When teachers rely directly on AI-generated scores for final assessments, there is a tendency to overlook the evaluation of advanced competencies such as ‘in-depth manuscript interpretation’ and ‘judgment of communication ethics’. Concurrently, this reliance diminishes students’ abilities for independent thought; in ‘impromptu commentary’ exercises, 62% of submissions exhibited characteristics of ‘AI-generated phrase redundancy’, lacking personalised expression. This imbalance contradicts the principle of ‘technology assisting rather than replacing’ advocated in the ‘dual-qualification’ teaching initiative.

6.1.4 Explicit ethical risks

The accumulation of over 100,000 student voice and video recordings during the teaching process entails storage and usage risks. Although the ‘Joyful Audio’ app employs basic encryption measures, 15% of students remain concerned about the potential misuse of their ‘personal voice characteristics’. Additionally, discrepancies of 23% in AI’s evaluative weight between ‘serious news’ and ‘entertainment programs’ suggest an underlying algorithmic bias favouring entertainment over depth, which conflicts with the training goal of instilling a ‘sense of social responsibility’ within the broadcasting and hosting profession.

6.2 Feasible optimisation paths based on the practices at Xinyu University

6.2.1 Iterative enhancement of multimodal fusion technology for increased authenticity

The upgrade of emotional recognition can be achieved through collaboration with local broadcasting enterprises to develop a ‘broadcasting emotion map’, integrating vocal

characteristics with micro-expression data. For instance, in the ‘revolutionary storytelling’ training, subtle movements of students’ eyebrows and mouth corners can be captured by cameras, combined with voice spectrogram analysis, thereby elevating the accuracy of compound emotion recognition to over 90%, effectively compensating for the limitations of sole vocal recognition.

Innovation in scene interaction involves the creation of a ‘Metaverse Broadcasting Studio’, which integrates local tourism and exhibition resources. Projects such as ‘Fairy Lake Cultural Tourism Live Streaming’ and ‘Fengyi Intangible Cultural Heritage Interviews’ can be simulated, utilising VR equipment to facilitate a hybrid training experience of ‘virtual scenes + real guest remote participation’. The ‘contextual transfer training’ proposed by Zhan finds practical application here, enabling students to hone their adaptability in dynamically generated emergency scenarios, such as encountering equipment failures during live broadcasts.

6.2.2 Reconstructing collaborative rules for human-AI teaching

Establish an adaptive model of ‘80% basic training + 20% advanced guidance’: AI is responsible for assessing basic indicators such as pronunciation, pauses, and stress, for example, correcting the pronunciation of the flat and rhotacised tongue through ‘voiceprint comparison’; teachers focus on guiding value expression, such as guiding rural education revitalisation reports to enhance communicative empathy. AI-assisted teaching workshops are held every semester to strengthen teacher subjectivity through case analysis and indicator design. The ‘PIRIR five-step training method’ adds a ‘de-AI review’ link, requiring students to compare differences in their works and write reflection reports. Practice at Xinyu University shows that this link significantly improves the originality rate of ‘improvisational commentary’. Each semester, ‘AI-assisted teaching workshops’ can be organised, featuring modules such as ‘analysis of AI misjudgment cases’ and ‘designing advanced evaluation metrics’ to strengthen the agency of educators.

In terms of reshaping student capabilities, the ‘PIRIR five-step training method’ will incorporate a ‘De-AI review’ phase, requiring students to compare their own work with AI-generated suggestions and compose a *personalised expression reflection report*. Practical experiences from the 2023 cohort at Xinyu University indicate that this phase significantly improves the originality of ‘impromptu commentary’. While contemplating the future landscape and practical pathways for educational innovation empowered by AI in the context of a strong educational nation, one must remain vigilant regarding its potential risks (Wang et al., 2014).

As AI technologies find widespread application in education, data security and privacy protection emerge as urgent issues that need to be addressed (Tian, 2020). A comprehensive protective framework must be established to enhance ethical standards and bolster data security. Implementing blockchain technology for the desensitisation of student voice data, along with creating a ‘teaching use whitelist’ that grants access solely to instructors, will be essential. AI-assisted teaching necessitates the collection and processing of extensive personal data from students, including learning behaviours, grades, and interests. If mishandled, this data can pose significant risks of breaches and invasions of privacy (Liu, 2025). Each semester, ‘data privacy classes’ should be conducted to raise students’ awareness through warnings and case studies on ‘voice information leaks’.

Establishing a ‘scholarly + industry’ review panel, comprising industry hosts and academic scholars, will aid in calibrating algorithmic biases. Quarterly audits of AI evaluation models should be conducted. To address the tendency toward ‘entertainment-focused evaluations’, advanced metrics reflecting ‘social value weight’ should be increased; for example, in scoring ‘intangible cultural heritage live streams’, the proportion of ‘depth of cultural interpretation’ should be raised to 30%, ensuring alignment between technological application and professional ethics. Care must be taken to consider the reduction of emotional experiences caused by the replacement of embodied learning and the impoverishment of students’ cognitive experiences due to algorithmic substitution of human thought (Wang, 2024).

Through these pathways, the broadcasting and hosting program at Xinyu University can achieve ‘precision empowerment’ through AI technology-leveraging its efficiency in foundational training while preserving core professional values such as ‘humanistic literacy’ and ‘social responsibility’, ultimately cultivating a talent ecosystem in audiovisual communication where ‘technology serves as a tool, while education remains the essence’.

7 Future outlook: building a new ecosystem of education driven by AI

7.1 Technological integration: transitioning from ‘auxiliary tool’ to ‘core ecosystem’

In his seminal work, *The Technological Society*, Ellul (1964) suggests that technological development possesses a self-reinforcing momentum, gradually becoming a decisive factor in societal advancement. The future will witness a profound integration of AI with 5G and big data, facilitating dynamic adjustments to curriculum modules based on big data analysis of industry talent needs. This may include the incorporation of cutting-edge content such as ‘AI-generated digital hosts’ and ‘AI-assisted multimedia operation technologies’. Driven by advances in learning science and AI technologies, the Education 5.0 era will place greater emphasis on humanism, concentrating on learners’ experiences and personalised needs, founded on the ‘5A’ attributes of active learning, authentic learning, associative learning, analytical learning and adaptive learning (Dong et al., 2024).

7.2 Cultivation upgrade: evolving from ‘skill training’ to ‘value coexistence’

The development of a three-dimensional cultivation model encompassing ‘professional competence-cultural literacy-social value’ is essential. At the foundational level, AI will refine hard skills such as voice modulation and expression; at the advanced level, projects like ‘propagating red stories’ will nurture cultural confidence; at the higher level, alignment with national strategies such as ‘promoting AI to assist rural revitalisation’ and ‘cultural export’ will enable students to comprehend the ‘timely mission of media professionals’ through practical engagement.

7.3 Industry collaboration: transitioning from ‘campus closure’ to ‘integration of industry and education’

A collaborative ‘AI training cloud platform’ will be established in partnership with provincial, municipal, and county-level broadcasting groups, as well as the ‘JD live broadcasting base’, synchronising frontline production processes and evaluation standards. Industry mentors will provide remote guidance on student projects through AI systems, with outstanding proposals being directly incorporated into media broadcast plans, thereby achieving a seamless connection between ‘teaching-practice-employment’.

8 Conclusions

The integration of AI programs represents not only a technological revolution in broadcasting and hosting education, but also an evolution in educational philosophy. While AI technology displays immense potential in the field of education, challenges regarding its applicability and maturity still persist in the deepening of educational processes (Li et al., 2022). It is essential to tailor approaches to the curriculum, from the feedback mechanism of the ‘PIRIR five-step training’ to the ecosystem development of the ‘Joyful Audio Mini Program’ and ‘Boxiaoyin’ AI digital personas, encompassing everything from quantifiable data on skill enhancement to the social value of cultural dissemination. The essence of technology empowerment lies in enabling students to attain personal growth while embodying transcendent values associated with expertise. Moving forward, only through the persistent exploration of a balanced synergy between human and machine can we cultivate a new generation of audiovisual communication talents—individuals who are not only skilled but also empathetic and responsible, allowing the voices of youth to genuinely convey the strength of China.

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Declarations

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