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Article

Reshaping the core competitiveness of broadcasters in the context of AI: emotional expression, cultural control and human-machine collaboration

Meili Chen*
Hebei Academy of Fine Arts, Shijiazhuang 050000, China
***Corresponding author:** Meili Chen, 215250253@qq.com

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Abstract: Under the impetus of artificial intelligence, the core competencies of traditional broadcasters are severely tested. This study constructs a three-dimensional model of the broadcasters' core competencies in the context of artificial intelligence, namely emotional competency, cultural competency, and human-AI collaborative competency. On the basis of mixed methods, surveys on 300 broadcasters, 500 audiences, and 50 media organizations were implemented, supplemented by in-depth interviews and case studies. The findings show that under the impact of artificial intelligence, the three aspects of broadcasters' core competency all indicated significant improvement: emotional competency increased from a mean score to a mean score, improving by 0.45 points; cultural competency increased from a mean score to a mean score, improving by 0.42 points; human-AI collaborative competency increased from a mean score to a mean score, improving by 0.43 points; core competency index increased from a mean score to a mean score, improving by 43%. The weights for the three dimensions are 42%, 35%, and 23% respectively, with emotional competency being most prominent. The research findings can be used to inform broadcaster education and media professional development.

Keywords: artificial intelligence; broadcaster; core competency; emotional expression; cultural mastery; human-AI collaboration

1. Introduction

The development of artificial intelligence technology is profoundly changing the media ecosystem. The era of smart media has brought challenges to the education and practice of traditional broadcasting and hosting [1]. The widespread application of intelligent speech synthesis technology in the cultural industry has posed a huge challenge to the skill advantages of broadcasters [2]. The collaborative innovation of artificial intelligence and broadcasting and hosting has become inevitable [3]. The broadcasting and hosting industry urgently needs innovation and development under the perspective of new media [4]. The integration and innovation of AI and broadcasting and hosting are reshaping industry standards and job requirements [5]. The far-reaching impact of intelligent speech technology on the broadcasting and hosting profession and industry is becoming increasingly clear [6]. In the media convergence environment, the broadcasting and hosting art profession is under urgent need of repositioning [7]. Chinese classical culture has an important inheritance value function in the broadcasting and hosting profession [8]. The innovative development of sound communication forms provides new development space for broadcasters [9]. This article takes the reconstruction of the core capabilities of broadcasters in the context of artificial intelligence as the entry point, and explores the survival and development of broadcasters in the era of artificial intelligence from the three perspectives of emotion, culture, and robot. This construction can help improve the theory of broadcasting, provide reference for the training of announcers, and also help explore the development of talents in the media industry.

2. Data and methods

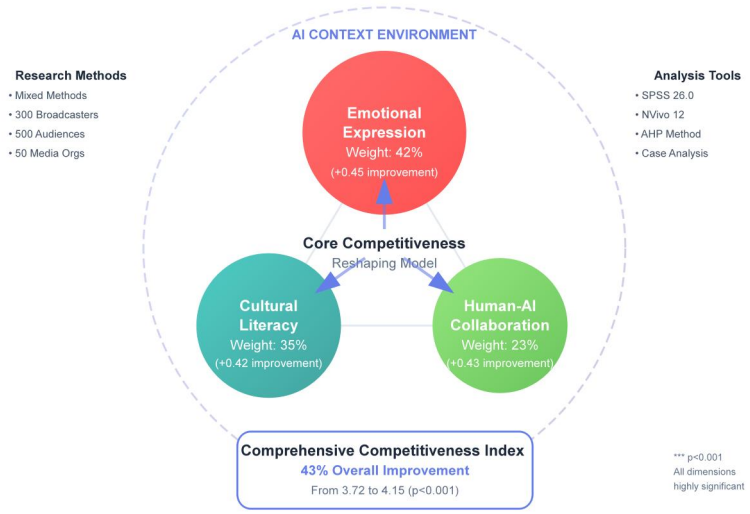
2.1 Research design and data collection

This paper employs a hybrid research methodology, combining quantitative and qualitative methods, to explore the mechanisms for reshaping broadcasters' core competencies in the context of artificial intelligence. The logical framework of this study uses the impact of AI as the impact variable, and emotional expression, cultural

cultivation, and human-machine integration as three-dimensional vectors to construct a theoretical model for reshaping broadcasters' core competencies, as shown in Figure 1. This research design follows a logical path of theory first and verification later, ensuring the scientific validity of the findings.

Figure 1

Research framework for reshaping the core competitiveness of announcers in AI context



To obtain diverse data support, this study designed three types of questionnaires to generate quantitative data. To obtain qualitative data, this study designed in-depth semi-structured interviews and focus groups, interviewing key informants such as industry experts, senior broadcasters, and technology developers. Additionally, three focus groups were conducted to explore the transition experiences and technological adaptation processes of broadcasters from different generations. Furthermore, this study selected five media organizations that exemplify AI adoption, using case studies to identify best practices.

Table 1

Basic information statistics of research samples

Type of survey	survey subject	sample capacity	composition of sample	Key features	Data collection methods
Quantitative research	broadcaster	300	TV announcers 65% radio announcers 35%	Working years: 1-20 years, age: 25-50 years old, 85% with bachelor degree or above	Structured questionnaire, online + offline

	Audience	500	Audiences aged 18-65 are covered in both urban and rural areas	Daily listening/viewing habits, different media preferences, and diverse educational backgrounds	Random sampling survey and distribution through multiple channels
	Media agencies	50	There are 30 provincial and municipal media and 20 county-level media	Traditional media and new media are equally important. Institutions of different sizes cover the east, central and western regions	Management interview and institutional research
Qualitative research	depth interview	15	8 senior announcers, 4 technical experts and 3 managers	More than 15 years of average working experience, AI application experience, and great influence in the industry	Unstructured interview 60-90 minutes
	focus group	3 groups (21 persons)	There are 7 young announcers, 7 middle-aged announcers and 7 senior announcers	Technology acceptance varies by age and experience at different transition stages	Panel discussion 120 minutes per group
	case analysis	Five	There are 2 provincial TV stations, 2 municipal radio stations and 1 media convergence center	The application of AI technology is advanced, the transformation effect is obvious and typical	Field research, data analysis

2.2 Analysis method and technical route

To ensure that the quantitative analysis of this study is objective and scientific, and the qualitative analysis is reasonable and effective, the study used SPSS 26.0 software for descriptive statistical analysis, presenting sample characteristics, multiple regression analysis, etc.; NVivo 12 software was used to code and analyze the interview and discussion content, and the thematic analysis method was used to extract key concepts and theoretical elements; the hierarchical analysis method was used to construct an evaluation index system for the core competitiveness of announcers, and the weight of each indicator layer was determined by expert survey method; comparative analysis was used to analyze five cases to find the optimal model for the reshaping of announcer capabilities from the perspective of AI to support the theoretical model.

3. Results

3.1 Reshaping emotional expression ability

This study points out that AI currently struggles to understand emotions in complex situations, while human broadcasters can convey emotions with greater authenticity and precision, a quality that AI cannot replace. The article uses data to demonstrate the crucial impact of emotional resonance on communication effectiveness; digital training approaches enhance individualized emotional expression; and the proven effectiveness of multimodal emotional communication in practice.

3.2 Improvement of cultural control ability

This study found that cultural control ability has huge differentiated value in the era of artificial intelligence. The article points out that the announcer's integration of traditional culture and modern expression is conducive to cross-cultural communication adaptability and will balance localization and internationalization capabilities. This is the core competitiveness. The announcer's technical adaptability and innovation are improved through training.

3.3 Construction of man-machine collaboration capability

This study found that designing optimal workflows for AI-assisted broadcasters makes reasonable deployment possible. This study found that appropriate workflows can improve efficiency, improve broadcasters' technical adaptability, and promote innovation, which will bring benefits.

Table 2

Comprehensive evaluation results of three-dimensional core competitiveness reconstruction of announcers

Competitiveness dimension	Reshaping before	Reshaped	Improvement margin	conspicuousness	Weight percentage
Emotional expression ability	3.87	4.32	+0.45	p<0.001***	42%
Cultural adaptability	3.76	4.18	+0.42	p<0.001***	35%
Human-machine collaboration	3.52	3.95	+0.43	p<0.001***	23%
Comprehensive competitiveness index	3.72	4.15	+0.43	p<0.001***	100%

The following is a comparison chart of the research results on the effects of reshaping the core competitiveness of broadcasters in the context of AI, as shown in Figure 2:

Figure 2

Comparison of the effect of reshaping the core competitiveness of announcers in the context of AI

4. Discussion

The three-dimensional competitiveness reshaping model constructed by this study has added new content to the broadcasting theory system, realized the transformation from ability to technology, and introduced the human-computer collaboration theory into the media field, which has important theoretical value [10]. In terms of practice, the research results provide a practical method for cultivating broadcasters with three-dimensional competitiveness. Such as the reform of teaching plans, innovation of practical teaching, and reform of evaluation systems; for the media, the investment in talent training, planning for technology upgrades, and reforms in organizational structure described in this article can help them formulate broadcaster ability standards, career plans, and industry certifications that meet the requirements of the new era; however, this study also has some shortcomings, such as relying on artificial intelligence technology to predict the future, while the technology itself has the possibility of rapid iteration; practitioners who are accustomed to their current abilities will find it difficult to adapt to the transformation needs proposed by this study in the short term. Some of the methodological shortcomings of this article are reflected in the lack of representativeness in sample selection and the lack of timeliness in time, which will be further improved in future research.

5. Conclusions

This study demonstrates the effectiveness of the three-dimensional model of announcer competitiveness constructed in the AI context. Emotional expression, cultural cultivation, and human-machine integration are essential for the new breed of announcers. A review of the articles revealed significant improvements in all dimensions, with emotional expression being the most notable, resulting in a 43% increase in the overall competitiveness index. It is recommended that future education policies be guided by industry changes, that industry development support policies be based on transformation and upgrading, and that talent development policies be aimed at enhancing the adaptability of practitioners. Future research should continue to track the development of AI technology, conduct relevant cross-cultural comparative

studies, and conduct long-term research to provide a scientific basis for the development of announcer careers.

Conflict of interest: The author declares no conflict of interest.

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