

# THE IMPACT OF NEW MEDIA TECHNOLOGIES ON AUDIENCE IMMERSION IN CONTEMPORARY CHINESE THEATRE

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**Abstract.** This study explores the cognitive understanding and practical pathways of dream imagery in contemporary Chinese theatre, with a particular focus on the impact of new media technologies on audience immersion. Based on semi-structured interviews, it investigates how directors, playwrights, and stage designers conceptualize and implement dream imagery. The research begins by defining the concept of dream imagery and its multidimensional roles in dramatic narrative, aesthetic function, and expressive techniques, emphasizing the lack of attention to creators' perspectives in current scholarship. Employing a qualitative research paradigm informed by symbolic interactionism and cognitive psychology, this study analyzes how creators construct dream imagery in scriptwriting and stage presentation, and the challenges they face, including cultural gaps, technical constraints, and audience comprehension. Findings reveal that dream imagery not only serves as a carrier of psychological and social symbols but also exemplifies contemporary drama's innovation beyond traditional structures. The study emphasizes a triadic interaction model among creators, texts, and audiences, offering new theoretical insights and practical references for theatrical production and cross-media dissemination. Finally, it proposes theoretical and practical frameworks for developing a distinctively Chinese model of dream imagery creation, thereby promoting the sustainable evolution of dream narratives in Chinese contemporary theatre.

**Keywords:** *new media technologies, audience immersion, contemporary Chinese theatre, dream imagery*

## Introduction

With the rapid advancement of digital technology, the incorporation of new media into contemporary theatrical creation and performance has become increasingly prevalent (Chukwu-Okoronkwo, 2023; Zhang, 2023). From traditional stage design and lighting to multimedia projection, virtual reality (VR), augmented reality (AR), and immersive sound systems, new media technologies have continuously expanded the expressive means and modes of theatrical engagement (Bakhshi and Throsby, 2012; El-Nasr, 2007). These innovations have significantly enriched the semiotic language of theatre and transformed the audience's perceptual experience. Amidst a global cultural landscape characterized by ongoing innovation and integration, audience expectations are also evolving. Conventional forms of linear storytelling and realist performance are proving insufficient to meet the growing demand for immersive and interactive theatrical experiences (Weijdom, 2017; El-Nasr, 2007). Thus, the introduction of new media technologies signifies not merely a technological shift, but a fundamental transformation in the expressive capacity, communicative potential, and modes of audience engagement in theatre. Immersion, broadly defined as a state of deep psychological and sensory involvement within a specific environment, has become a focal concept in recent years across the fields of literature, communication, psychology, and the performing arts. In theatrical practice, immersion is widely regarded as a key indicator of audience experience quality (Yao and Photchanachan, 2023; Freitag et al.,

2020). It affects not only the audience's understanding and emotional resonance with the performance, but also their aesthetic judgment and willingness to participate. Particularly in contemporary performances enhanced by new media technologies, the construction of immersive experience has become increasingly diverse. Audiences are no longer passive recipients; instead, they are gradually transformed into active participants in the theatrical event, sometimes even assuming crucial roles in the progression of experimental narratives.

In the development of contemporary Chinese theatre, an increasing number of directors and performance troupes have begun to integrate new media technologies into stage design and narrative structure, aiming to dismantle the "fourth wall" and evoke a sense of perceptual immediacy (Geuens, 2015). For instance, through the integration of real-time projection and physical performance spaces, the construction of multidimensional theatrical environments becomes possible. Sensor-based audience interaction and the layering of virtual and physical content further blur the boundaries between reality and illusion. These experimental practices have expanded the creative possibilities of theatre and prompted scholars to reconsider the definitions and parameters of traditional spectatorship. Nevertheless, while the theatrical application of new media has emerged as a significant trend, systematic research on its impact on audience immersion remains limited, particularly in the context of Chinese theatre. Key questions, such as how different technological elements contribute to the construction of immersive experience, how audiences respond to technological interventions, and what challenges arise in the process of implementation, have yet to be thoroughly explored. In response to these issues, this study aims to investigate the role of new media technologies in enhancing audience immersion within contemporary Chinese theatre.

Existing studies on theatre and new media technologies tend to concentrate on technical descriptions and performance evaluations, focusing on areas such as multimedia projection, virtual scenography, and interactive systems. Some research has also addressed immersive theatre as an emerging art form, emphasizing the decentralization of narrative, enhanced liveness, and expanded modes of audience participation made possible by new media. However, there remain several notable disconnects between theory and practice. First, few studies adopt an audience-centered empirical approach to explore immersive experience; most remain in the realm of artistic commentary or technical reporting, and thus fail to uncover the psychological mechanisms underlying audience engagement. Second, the dynamic relationship between technological application and audience feedback is insufficiently analyzed, with limited attention to how variables such as performance genre, spatial configuration, and audience composition influence immersive outcomes. Third, existing research draws heavily on Western theoretical models, with inadequate consideration of culturally specific factors such as audience psychology and technological receptivity in the Chinese context, rendering such findings less applicable to domestic theatre development. This study contributes to filling these gaps in several ways. First, it extends the focus of dream imagery studies in theatre from audience reception to creative cognition, emphasizing the mental frameworks and contextual sensitivities of creators. Through systematic interviews with practitioners, it reveals the generative logic and aesthetic functions of dream imagery within contemporary theatrical contexts, thereby laying the groundwork for a more comprehensive theoretical framework. Second, the study seeks to establish an analytical perspective that captures the tension between creative intention and audience perception, moving beyond a linear "text–

audience” model to propose a triadic interaction between creator, text, and audience. This model allows for a fuller understanding of the multifaceted role of dream imagery in the theatrical system. Third, the study offers practical insights for playwrights, directors, and designers in the application of dream imagery, helping to enhance narrative effectiveness and artistic quality. Its findings may also inform theatre education and audience development by improving the perceptibility and communicative power of dream-based theatrical expression.

## *Literature review*

### *New media technology*

New media technology refers to a set of digital, networked, and interactive communication tools, including projection systems, virtual reality (VR), augmented reality (AR), real-time interactive platforms, and multi-channel audio systems (Wang, 2023; Syed et al., 2022). The development and integration of these technologies have significantly expanded the expressive boundaries of theatre, giving rise to creation models and viewing modes oriented toward immersive experience. Since the late 20th century, with the maturation of digital media and computer-based image processing technologies, theatres have gradually begun incorporating video projection and interactive lighting to assist narrative expression and visual scenography (Tabački, 2017). International avant-garde theatre companies such as Robert Lepage and Complicité were among the pioneers in integrating multimedia technologies into experimental performances, achieving seamless fusion between digital imagery and live acting, and blurring the line between the virtual and the real (Samur, 2012). Entering the 21st century, technologies like AR/VR, motion capture, and panoramic sound have further enriched the stage (Gąbka, 2023; Syed et al., 2022), giving rise to new theatrical forms such as “multisensory theatre” and “immersive performance spaces.”

In China, the trend toward technologization in contemporary performing arts has likewise become increasingly evident (Zhang et al., 2022). Avant-garde theatre troupes and artistic institutions in cities such as Beijing, Shanghai, and Shenzhen have begun experimenting with the integration of new media and traditional theatre, initiating multilayered creative explorations. Productions such as *The Three-Body Problem* and *City of Illusions* have employed real-time interactive projection and gaze-tracking systems to enable dynamic spatial transitions and enhance audience perception (Deng and Goh, 2024; Healey, 2017). Additionally, the use of digital lighting control and audio localization systems allows spectators to experience directional perception and guided movement within the theatre space, establishing a physical basis for immersion. Nonetheless, the application of new media in theatre has also prompted debates concerning the balance between artistic essence and technological intervention. On one hand, it enhances expressiveness and spectacle, rendering stage presentation more inclusive and diverse. On the other, critics argue that overreliance on technology may dilute the dramaturgical depth and diminish the actor’s expressive agency. Current research remains largely concentrated on technical descriptions and case analyses, with relatively few studies systematically examining how new media technologies impact audience immersion from an experiential perspective.

### *Immersion*

Immersion refers to a psychological state in which individuals feel fully absorbed and present in a given medium or environment (Zhang et al., 2017; Nilsson et al., 2016;). The concept originates from game studies and virtual reality research, where it describes users' temporary detachment from physical reality and full engagement with digital environments. Babziz and Derouich (2024), in *Hamlet on the Holodeck*, identifies immersion as one of the defining artistic features of digital media, emphasizing its ability to construct contexts and evoke emotional resonance. With the development of new media technologies, the concept of immersion has gradually been introduced into fields such as film. Immersion refers to a psychological state in which individuals feel fully absorbed and present in a given medium or environment. In art, and theatre, playing an increasingly important role in audience studies. In theatre research, immersion typically refers to the audience's spatial participation, emotional resonance, and psychological absorption during the viewing process (Shearing, 2015). Scholars have proposed various multi-dimensional frameworks to analyze the components of immersion. For example, Paananen et al. (2024) distinguish between technological immersion and psychological immersion; Zhang et al. (2017) outline a three-stage model comprising engagement, engrossment, and total immersion. Agrawal et al. (2019) further identifies narrative immersion, sensory immersion, and emotional immersion as three interrelated types. These classifications provide a theoretical foundation for layered analysis of immersion in theatre.

Recent scholarship has increasingly emphasized audience-centered approaches, exploring how factors such as cultural background, media literacy, and aesthetic experience influence individual immersion levels (Lewis, 2018; Michelle et al., 2012). In the context of contemporary theatre, where performance forms are highly diverse and narrative structures nonlinear, audience immersion depends not only on the physical environment of the theatre but also on the symbolic structure of content, emotional resonance, and interactive mechanisms. Consequently, immersion research is gradually shifting from a technology-driven model to a user-experience-centered perspective, emphasizing multi-sensory activation and subjective agency. In China, the definition and measurement of immersion remain in a transitional stage between theoretical importation and localized development. Although some initial studies have attempted to apply concepts such as "immersive experience" and "immersive narrative" within the theatre arts, a systematic theoretical integration and empirical foundation are still lacking. Therefore, constructing a comprehensive understanding of the structural dimensions, generative mechanisms, and influencing factors of immersion in Chinese contemporary theatre holds both theoretical and practical significance.

### ***New media technologies and immersion***

The impact of new media technologies on immersive experience in theatre has become an increasingly prominent topic in both domestic and international research. Most studies approach this issue from three dimensions: sensory stimulation, spatial configuration, and interactivity, examining how technological interventions reshape audience-performer relationships and psychological dynamics. First, sensory stimulation constitutes the most direct pathway through which technology enhances immersion (Zhang and Song, 2022; Suh and Prophet, 2018). Multimedia visuals, LED lighting systems, high-fidelity sound, and even scent-dispensing devices can intensify visual, auditory, and olfactory experiences, generating what has been termed "supersensory immersion." Rolls et al. (1988) introduced the concept of "sensory

density,” arguing that the intensity of immersive experience correlates positively with the degree of sensory engagement. This theory has been validated in numerous theatrical experiments, such as *Sleep No More* and *Then She Fell*, where lighting, sound effects, and physical space are intricately fused to amplify the audience’s sense of presence and immersion. Second, spatial design and environmental structuring are key strategies for achieving immersion. New media technologies enable spatial reconstruction that transcends the limitations of proscenium-stage design, transforming the theatre into a multi-node, multi-threaded immersive environment (Freyermuth, 2016; Wiens, 2010). “Experience economy” theory suggests that spatial design should guide audience participation and memory formation, offering a methodological basis for immersive space design (Hayes and MacLeod, 2007). In practice, technologies such as motion-sensor-driven interaction and environmental projection can dynamically adjust scenographic content based on audience behavior, deepening immersive engagement (Stravoskoufos et al., 2014).

Third, interactivity is critical for deepening immersive experience. New media theatre frequently incorporates real-time interaction between audience and performers, narrative branching mechanisms, and role-embedding systems. Audiences are thus not mere observers but active participants within the narrative structure. Janlert and Stolterman (2017) propose the notion of “controlled interactivity,” which emphasizes the need to balance narrative coherence with participatory agency. On this basis, productions employ human-computer interaction, real-time feedback, and embodied sensing to synchronize audience behavior with plot development, thereby enhancing the participatory and generative nature of immersion (Rahimi et al., 2025). Despite the richness of existing theoretical and practical perspectives, several research gaps remain. First, most studies are concentrated on technological presentation, lacking in-depth quantitative analysis of psychological mechanisms and immersive outcomes. Second, there is a lack of refined classification systems linking specific types of new media technology with corresponding types of immersive experience. Third, the majority of empirical cases are situated in Western contexts, with minimal data from Chinese theatres. Accordingly, there is a pressing need to investigate the immersive impact of new media technologies from the perspective of Chinese audiences, combining qualitative and quantitative methods to construct a culturally grounded analytical framework.

### ***Research gaps***

Although existing research on new media and audience immersion has laid a preliminary foundation, two major gaps remain. First, the literature has predominantly examined new media in theatre from the perspectives of directorial intention, scenographic innovation, or technical deployment, with limited attention to immersion as a subjective audience experience. As a result, the mechanisms underlying the construction of immersion remain largely theoretical, with insufficient empirical evidence on how specific technological elements elicit immersive states. Second, most current studies rely on avant-garde Western theatre as their primary reference, offering limited insight into the localized application, reception dynamics, and cultural adaptation of new media technologies in Chinese performing arts. Given the significant differences in theatrical space, audience structure, and cultural context, there is a lack of targeted empirical analysis capable of generating transferable theoretical contributions. To address these gaps, this study focuses on new media practice within the context of

contemporary Chinese theatre. It aims to explore the actual efficacy and challenges of technology-enhanced immersive experience, thereby bridging existing theoretical and applied shortcomings in the literature.

## **Materials and Methods**

This study aims to investigate the mechanisms through which new media technologies influence audience immersion in the context of contemporary Chinese theatre. In recent years, with the rapid development of digital technologies, multimedia projection, virtual reality (VR), augmented reality (AR), and interactive lighting have been widely applied in theatrical productions, greatly enriching both expressive techniques and audience experience. However, research on how these technologies specifically shape immersive experience, particularly within the Chinese cultural context, remains limited. Therefore, this study adopts a questionnaire-based approach to collect extensive audience feedback, systematically assess levels of awareness and acceptance of new media technologies, and examine the specific contributions of various technological elements to immersive experience. It also seeks to deepen understanding of how new media technologies enhance theatrical immersion and to promote a mutually reinforcing relationship between artistic innovation and audience engagement. These findings are intended to offer a theoretical and practical foundation for future theatrical creation and performance management.

### ***Population***

To ensure the representativeness and applicability of the findings, the selection of survey participants emphasized diversity and broad demographic coverage. Respondents were required to have prior experience attending live theatre and represent various age groups, genders, education levels, and cultural backgrounds. The sample included adults aged 18 and above, with particular focus on three demographic cohorts: young adults (18–30), middle-aged adults (31–45), and older adults (46 and above), in order to capture potential age-related differences in technology acceptance. Gender distribution was balanced to avoid cognitive bias caused by gender disproportionality. Educational backgrounds ranged from high school or below to postgraduate level and above, allowing analysis of how cultural literacy may influence perceptions of immersion. Participants were primarily drawn from major metropolitan areas in China (e.g., Beijing, Shanghai, Guangzhou) as well as selected second-tier cities, in order to account for potential regional differences in technological receptivity. All respondents were required to have attended at least one theatrical performance that incorporated new media elements, ensuring a baseline level of technological exposure and familiarity. In addition, participants came from varied professional backgrounds, including students, cultural and artistic practitioners, corporate employees, and freelancers, reflecting a diverse cross-section of society. Based on these criteria, a final sample of 300 qualified participants was recruited, ensuring a reliable foundation for data analysis.

### ***Survey design***

The survey was designed in accordance with the study's theoretical framework and relevant literature, and it comprises five major sections. Section One gathers basic demographic information, including age, gender, educational attainment, occupation,

frequency of theatre attendance, and prior experience with performances featuring new media technologies. This section facilitates descriptive analysis of the sample. Section Two focuses on participants' awareness and acceptance of new media technologies. Respondents evaluated their familiarity with and preferences for specific technologies, such as multimedia projection, interactive lighting, surround sound, and VR, using a five-point Likert scale. Section Three centers on measuring immersive experience, covering dimensions such as emotional involvement, spatial immersion, participatory engagement, and attentional focus. Drawing on the Immersive Tendencies Questionnaire was developed by the past expert, the items were adapted to align with the specific characteristics of theatrical performance, ensuring contextual relevance and scientific rigor. Section Four assesses the facilitating or impeding effects of new media technologies on immersion, including factors such as system stability, visual performance, interactivity, and the degree of integration between technology and narrative. Section Five features open-ended questions to elicit participants' subjective reflections, suggestions for improvement, and expectations regarding future applications of new media technologies in theatre. This qualitative component enriches the depth and breadth of the quantitative data.

### ***Sampling and data collection***

To ensure the representativeness and reliability of the dataset, the study employed a stratified random sampling method. The sample was stratified based on key demographic variables, namely, age, gender, and urban tier classification, to ensure adequate representation across audience groups. Specifically, participants were categorized into three age groups (18–30, 31–45, and 46 and above), two gender groups (male and female), and two city categories (first-tier and second-tier). The sample sizes for each stratum were proportionally allocated according to the actual demographic structure of Chinese theatre audiences. Eligible respondents were then randomly selected within each stratum to ensure both diversity and randomness. The survey was distributed online via the Wenjuanxing platform, with a total of 320 questionnaires issued. After rigorous screening, 300 valid responses were collected, yielding a high response rate of 93.75%. The sample size meets standard requirements for statistical analysis. The use of stratified random sampling effectively balanced the sample structure and enhanced the representativeness and generalizability of the research findings.

## **Results and Discussion**

### ***Analysis of audience awareness and acceptance of new media technologies***

This section presents a statistical analysis based on the data collected through the questionnaire designed, examining Chinese contemporary theatre audiences' awareness, acceptance, and experiences with new media technologies. A total of 300 valid responses were collected, representing diverse demographic groups in terms of age, gender, and educational background. *Table 1* displays audience awareness and acceptance levels across four categories of new media technologies. Overall, multimedia projection had the highest awareness rate (85%), followed by interactive lighting (80%) and surround sound (75%), while virtual reality (VR) was less familiar to audiences, with an awareness rate of 60%. In terms of acceptance, more than 75% of

respondents were receptive to multimedia projection and interactive lighting, approximately 70% accepted surround sound, and only 55% expressed acceptance of VR technology. Further analysis indicates that both education level and age are key variables influencing awareness and acceptance. Respondents with a high school education or below demonstrated awareness rates over 10 percentage points lower than those with a college degree or higher. Younger respondents showed significantly greater openness to and acceptance of new media technologies, particularly in relation to VR, highlighting clear generational differences in technological familiarity and expectations, differences that are highly relevant for shaping future application strategies. Additionally, the survey included audience evaluations of the effectiveness of new media technologies in theatrical applications, rated on a 5-point scale. Results showed that multimedia projection scored highest for visual impact and narrative enhancement; interactive lighting contributed most to emotional guidance; surround sound played a critical role in creating atmospheric immersion; and VR demonstrated strong potential in fostering interactivity and engagement, though it received lower scores for comfort and usability. The overall satisfaction rating for technological integration was 4.1, indicating general audience approval while suggesting room for improvement.

**Table 1.** Audience awareness and acceptance of new media technologies.

Technology type	Awareness (%)	Acceptance (%)	Youth awareness (%)	Older adults' awareness (%)
Multimedia Projection	85	78	92	70
Interactive Lighting	80	75	88	65
Surround Sound	75	70	82	60
Virtual Reality	60	55	70	40

### ***Impact of new media technologies on audience immersion***

The analysis of immersion-related questionnaire items reveals that new media technologies significantly enhanced the immersive experience of theatre audiences. Specifically, 80% of respondents reported increased emotional engagement, 75% noted a stronger sense of spatial enclosure, and 68% stated that new media technologies encouraged more active participation in the unfolding of the narrative. Multimedia projection and interactive lighting were regarded as the most influential technologies in enhancing immersion, as their dynamic features synchronized with the narrative and strengthened both the storytelling process and audience identification. Enhancement of immersion occurred not only through sensory stimulation but also through emotional resonance and psychological connection. Many respondents noted that the emotional tone created by lighting and projected visuals helped to elicit empathetic responses. Surround sound contributed to a multilayered soundscape, producing an auditory “sense of presence” that enriched the overall dramatic experience. Although still in an exploratory phase, VR demonstrated a clear capacity to enhance immersion among younger audience members, offering novel dimensions of interaction in virtual space. However, the effectiveness of immersive enhancement was limited by the maturity of the technology and individual audience characteristics. Some older viewers, unfamiliar with digital devices or uncomfortable with VR equipment, reported diminished immersion. Technical failures such as hardware malfunctions or audio delays occasionally disrupted the immersive experience. These findings suggest that producers must improve device reliability and offer clearer user guidance, while designing inclusive technological solutions tailored to diverse audience groups. In sum, by

stimulating multiple senses and guiding emotional engagement, new media technologies serve as powerful tools for enhancing immersion in contemporary theatre.

### ***Effects of individual Audience differences***

This section explores how audience characteristics, particularly age, education level, and cultural background, influence the immersive experience generated by new media technologies. The data indicate that younger audiences generally demonstrate higher acceptance and immersion scores, with significant differences observed in response to VR and interactive lighting. Younger individuals were more responsive to the sensory and interactive modes introduced by new technologies, with immersion scores averaging 15% higher than those of older adults. Participants with higher educational attainment showed a deeper appreciation for the artistic value derived from the integration of technology and narrative, recognizing how digital tools could support emotional expression and narrative complexity. In contrast, individuals with lower cultural literacy tended to favor traditional theatrical forms and were less receptive to the aesthetic dimensions of new media technologies, resulting in lower immersion scores. Moreover, audience members with extensive theatre-going experience were more open to technological experimentation and reported higher levels of immersion, suggesting that familiarity with theatrical conventions facilitates adaptation to innovative formats. Gender differences were comparatively minor, though female respondents appeared more emotionally responsive to technologies involving color variation and lighting effects, leading to slightly higher immersion ratings. Theatre genre preference also influenced responses: viewers inclined toward experimental and modern theatre were more likely to affirm the artistic value of new media integration. These findings underscore the importance of audience segmentation in theatrical design. Contemporary theatre practitioners must consider the diversity of their audiences, creating differentiated experiences that ensure the inclusiveness and accessibility of technological applications, and thereby optimize immersion across varied audience demographics.

### ***Challenges in the application of new media technologies***

The survey also revealed several challenges in the practical application of new media technologies. First, technical instability remains a major issue: approximately 22% of respondents reported experiencing interruptions due to device failure, audio delays, or video lag, all of which negatively affected their immersive experience. Second, certain technologies, particularly VR headsets, were described as difficult to operate or physically uncomfortable, limiting both accessibility and engagement. A further concern lies in the insufficient integration between technology and narrative. Some respondents felt that certain productions overly emphasized technical spectacle at the expense of storytelling and character development, resulting in experiences that were visually impressive but emotionally superficial. These insights suggest the need for creators to prioritize the organic fusion of digital technology with narrative content, ensuring that technology supports rather than overwhelms the dramatic core.

## Conclusion

This study employed a questionnaire-based methodology to systematically examine the current application of new media technologies in contemporary Chinese theatre and their impact on audience immersion. Based on the statistical analysis of 300 valid responses, several key findings emerged: (1) New media technologies have been widely adopted in contemporary Chinese theatre, significantly transforming traditional modes of theatrical expression. Audiences demonstrated relatively high levels of awareness and acceptance of technologies such as multimedia projection, interactive lighting, and surround sound. Notably, younger audiences expressed greater interest in and willingness to engage with emerging technologies such as virtual reality (VR). According to the survey, 85% of respondents were familiar with multimedia projection, and 80% accepted the use of interactive lighting, suggesting that new media has become an important tool for enhancing stage expressiveness. (2) Different types of new media technologies exert distinct effects on audience immersion. Multimedia projection was considered especially effective in enhancing visual impact and spatial perception, thereby enriching narrative layering. Interactive lighting was found to increase emotional engagement, while surround sound played a pivotal role in shaping environmental ambiance and dramatic tension. Although VR was less widely recognized, it demonstrated significant potential for fostering interactivity and participatory experience, indicating promising prospects for future development. (3) Audience immersion is influenced by a combination of factors beyond the technology itself. Individual characteristics such as cultural background, age, education level, and theatre-going experience significantly affected how audiences perceived and accepted technological integration. Younger and more highly educated respondents exhibited greater familiarity with and demand for immersive experiences, whereas middle-aged and older viewers tended to place more emphasis on traditional aesthetics and emotional resonance, showing more conservative attitudes toward technological expression. These findings suggest that theatre practitioners must account for audience diversity and seek to balance technological innovation with psychological accessibility.

Based on these findings, the study offers the following recommendations: First, emphasize the organic integration of technology and content. New media technologies should not function merely as visual embellishments or gimmicks, but rather as narrative instruments that enhance dramaturgical coherence and emotional depth. Theatre creators must develop a nuanced understanding of the symbolic and narrative functions of different technologies, translating them into tools for advancing plot and articulating themes. Second, promote the dissemination of technological literacy and audience education. Collaboration among theatres, cultural institutions, and universities is encouraged to offer workshops, guided appreciation sessions, and interactive experiences focused on new media theatre. These initiatives can enhance public understanding of new media aesthetics, reduce “technological alienation,” and improve the quality of immersive experience. Additionally, platforms such as short-form video and social media can be leveraged for pre-performance engagement to spark audience interest and emotional investment. Third, develop differentiated strategies for content creation and communication based on audience segmentation. For younger viewers, creators can employ more experimental and interactive approaches, including VR-based engagement and immersive participation. For older audiences, a more moderate technological application, balancing traditional aesthetics with modern tools, may be more effective in ensuring broad audience inclusivity. Fourth, invest in the

technological infrastructure of performance venues. Support should be directed toward equipping small- and medium-sized theatre troupes and regional venues with programmable lighting systems, high-definition projection equipment, and 3D sound systems to ensure that creative ideas can be effectively realized. Government and private sector cooperation should also be encouraged to provide funding and resources for equipment acquisition and personnel training.

Despite the contributions made in terms of variable construction, questionnaire design, and data analysis, this study has several limitations. First, while questionnaires offer advantages in scale and efficiency, they are limited in capturing the real-time immersive experiences of audiences. Future research could incorporate objective measurement tools such as physiological monitoring or behavioral observation to improve the precision of immersion assessments. Second, the sample was largely drawn from first-tier cities, which limits the regional representativeness of the findings. Expanding future studies to encompass a wider range of cultural and social contexts would enhance external validity. Finally, the classification of new media technologies in this study remained relatively general. More granular investigation is needed to understand the distinct mechanisms through which different technologies influence immersive experience. To this end, future research should explore multimodal integration, interdisciplinary collaboration, and the evolutionary pathways of theatrical technologies. Special attention should be paid to emerging tools such as generative AI and advanced VR, which hold significant potential for reshaping immersive experiences. Such efforts will contribute to the continued innovation and theoretical advancement of Chinese contemporary theatre in the context of digital-intelligent convergence.

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### **Conflict of interest**

The authors confirm that there is no conflict of interest involve with any parties in this research study.

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