Bridging Stage and Camera Performance Towards an Innovative Educational Framework

Gu Yuyang[1,2*], Zairul Anuar Md. Dawam[1], Sharip Zainal Sangkif Shek[1], Qiu Qilu[3]

[1]Academy of Arts and Creative Technology, University Malaysia Sabah

[2]Sichuan University of Culture and Arts

[3]Yunnan Light and Textile Industry Vocational College

***Corresponding Author**

DOI: https://doi.org/10.47772/IJRISS.2026.100300522

Received: 22 March 2026; Accepted: 28 March 2026; Published: 15 April 2026

ABSTRACT

The growing overlap between stage and screen performance has exposed a persistent gap in actor training, particularly for students whose education is grounded in traditional theatre methods. Many struggle with the technical and emotional demands of screen work, which often requires subtle micro-expressions, spatial awareness shaped by the camera lens, and the ability to sustain character continuity across fragmented shooting schedules. This study examines these challenges and explores how technology-enhanced training may support the transition. Using a mixed-methods approach, the research combined survey responses from acting students with interviews and classroom observations involving VR-based exercises and AI-assisted feedback. The findings point to three recurring areas of difficulty: maintaining emotional coherence during non-linear filming, regulating micro-expressions for close-up work, and adapting stage-based spatial habits to the logic of the lens. While technological tools improved awareness and gave students a clearer sense of camera demands, several participants expressed discomfort with algorithmic evaluation and fatigue during VR sessions. These results suggest that bridging stage and screen performance requires more than additional technical modules. Instead, training must help actors reframe how authenticity, presence, and emotional continuity are understood across media. The study proposes a Technology–Art–Humanities framework that integrates digital tools with interpretive practice and cultural grounding, offering a more coherent pathway for preparing actors to work confidently in both stage and screen environments.

Keywords: Stage-to-screen performance; Actor training; regulating micro-expressions Technology-enhanced pedagogy; Performing arts education,

INTRODUCTION

The performing arts have continually evolved in response to shifts in cultural practice, aesthetic philosophies, and technological change. From the ritual contexts of early performance to the proscenium stage and, more recently, the widespread presence of digital screens, performance has consistently adapted to new conditions of production and reception. In the twenty first century, one of the most notable developments is the growing convergence between stage and screen performance. This shift has unsettled long standing assumptions about acting and has highlighted the limitations of training models that continue to treat the two media as fundamentally separate.

Stage performance is grounded in co presence, immediacy, and the shared temporality of live interaction. It relies on vocal expansion, broad gestural vocabulary, and the ability to sustain emotional progression across unbroken time (Stanislavski, 1936; Brecht, 1992). The emotional arc unfolds sequentially, and the actor's presence is shaped by the feedback of a live audience, even in minimalist traditions such as Grotowski's Poor Theatre (as discussed in Ong and Tan, 2020). Camera performance, by contrast, is shaped both literally and conceptually through the lens. Its logic demands precision: slight shifts in gaze, breath, or facial tension may carry significant

narrative weight, and the temporality of filming is fragmented. Scenes are often shot out of order, requiring emotional continuity to be reconstructed rather than lived. As Jansson (2020) observes, the camera does more than record performance; it reorganises the ontology of acting.

Despite this clear divergence, many training programmes continue to privilege stage based methodologies or treat screen acting as a technical supplement rather than an integrated competency. This gap becomes more consequential as global production ecologies expand. Platforms such as Netflix, Disney Plus, iQIYI, Youku, and Tencent Video require actors who can move confidently between stage work, green screen environments, motion capture sets, and short form digital storytelling. They must negotiate a range of narrative tempos, from slow theatrical build ups to the rapid emotional shifts typical of streaming genres, while addressing audiences that are increasingly diverse and international (Kwok, 2018).

Technological developments intensify these demands. Virtual reality, augmented reality, and motion capture have become common features of production (Reinsone et al., 2023; Wolf, 2021). These environments require performers to work without physical sets or tangible partners, depending instead on embodied imagination, spatial mapping, and internal emotional cues. At the same time, artificial intelligence based tools for micro expression analysis now provide real time feedback on facial musculature and affective patterns (Hussain et al., 2020). Although these tools offer considerable potential, many institutions adopt them superficially. They remain isolated experiments, disconnected from broader curriculum design, and are sometimes perceived as threats to artistic agency rather than pedagogical resources.

The Chinese performing arts sector illustrates these tensions with particular clarity. Institutions such as the Beijing Film Academy and the Sichuan Institute of Culture and Arts have introduced screen acting components, yet these additions are not always systematic. Students who are predominantly trained for the stage frequently struggle with camera specific competencies, including spatial compression under wide angle lenses, emotional recalibration during discontinuous filming, and modulation of micro expressions. The problem is compounded by the limited integration of Chinese performance traditions into cross media education. Stylised forms such as opera offer rich embodied vocabularies that align naturally with the precision required in screen performance (Ng, 2018; Sun, 2019), but they are rarely incorporated into training. As a result, actors are prepared within frameworks that marginalise local aesthetic cultures while failing to meet global industry expectations.

Taken together, these developments highlight the need for a comprehensive, theoretically grounded, and culturally responsive model of actor training. This study contributes to this conversation by examining how actors trained primarily for the stage navigate the transition to camera based performance and how technology can support or complicate this process. It proposes a Technology, Art, and Humanities Trinity Framework as a basis for rethinking actor education, integrating the technical demands of digital media, the aesthetic concerns of performance theory, and the cultural depth of local traditions.

LITERATURE REVIEW

Classical Foundations of Stage Training

Actor training has long been shaped by influential performance theorists whose ideas continue to ground contemporary curricula. Stanislavski's (1936) system, with its focus on psychological realism and internally motivated action, remains a cornerstone of acting pedagogy. Brecht (1992) introduced a contrasting logic through epic theatre, urging performers to maintain critical distance rather than emotional absorption. Grotowski's emphasis on the disciplined, stripped-back actor's body further shifted attention toward physical expressivity (Ong & Tan, 2020). Although these approaches differ in method and intention, they share an anchoring assumption that performance unfolds in real time before a live audience. This shared logic has been sufficiently robust for stage practice, yet increasingly inadequate for the demands of screen work.

Liveness, Mediation, and the Stage-Screen Divide

Theoretical debates on liveness help to explain why stage training does not automatically transfer to the screen. Phelan (1993) characterises live performance as ephemeral and unrepeatable, placing its value in the fact that it

disappears once it is over. Auslander (2008), however, argues that the hierarchy that privileges live over mediated performance is historically constructed rather than inherent. From this perspective, camera work is not a lesser version of theatre but a distinct mode with its own aesthetic logic. Fischer Lichte's (2008) concept of co presence, which stresses the shared embodiment of actor and spectator, further clarifies the difference between stage and screen, since the camera mediates perception instead of sharing physical space with the audience.

Narrative Temporality and Fragmentation

Stage performance usually develops in a linear sequence, which allows actors to build emotional coherence from moment to moment. By contrast, film and television production are organised around non linear shooting schedules. Schechner's (2013) theory of restored behaviour helps to explain how performance can be reconstructed in fragments, but this reconstruction is rarely addressed explicitly in most training programmes. Research on screen acting pedagogy has repeatedly shown that managing continuity across out of sequence scenes is one of the most difficult adjustments for stage trained actors to make (Cummings, 2017; Jansson, 2020).

Technology in Actor Training

Recent scholarship highlights the expanding role of virtual reality, augmented reality, motion capture, and artificial intelligence in performance education. Motion capture studies show how digital tracking can support more precise and repeatable physical work (Reinsone et al., 2023), while research on VR based acting points to new possibilities for training embodied presence in simulated environments (Koch et al., 2018; Wolf, 2021). AI driven micro expression analysis provides data based insights into subtle facial and vocal patterns (Hussain et al., 2020), yet several authors have raised concerns about how algorithmic feedback may shape or even constrain artistic spontaneity and risk taking (García Peñalvo, 2021).

Localization and Intercultural Performance

Performance training increasingly engages with questions of localisation and intercultural practice. Ng (2018) argues that contemporary actor education in China should consciously re embed traditional embodied practices, rather than treating them as museum pieces. Sun (2019) similarly shows how principles drawn from Chinese opera continue to inform modern performance aesthetics, even when they are not always acknowledged explicitly. At the same time, scholars such as Kwok (2018) and Muniandy and Obijiofor (2020) highlight the actor's role as a cultural translator in transnational media systems, navigating multiple aesthetic codes and audience expectations across borders.

Synthesis and Conceptual Gaps

Across the literature, three gaps appear consistently. First, there is an adaptability gap: rich theoretical work on liveness and embodiment rarely finds its way into everyday teaching practice. Concepts that are well developed in performance studies are often absent from concrete classroom strategies. Second, there is a mediation and authenticity tension. Technology tends to be described in binary terms, either celebrated as a tool of enhancement or dismissed as a threat to artistic integrity, rather than being treated as something that can be thoughtfully integrated into training. Third, a localisation deficit remains. Western acting frameworks still dominate many curricula, while local aesthetic knowledge and performance traditions are underused or marginalised. These three gaps form the basis for the Trinity Framework that is developed in the later sections of this paper.

METHODOLOGY

This study used a mixed methods design to examine how stage trained actors adapt to camera based performance in two major Chinese performing arts institutions. The use of mixed methods was intended to capture both measurable behavioural patterns and the more tacit, subjective dimensions that are central to performance training. The design combined quantitative surveys, semi structured interviews, classroom observations, and experimental sessions that employed virtual reality and AI based micro expression feedback tools.

Research Sites and Participants

Two institutions were selected based on their combined emphasis on traditional stage acting and emerging camera-based modules: the Beijing Film Academy (Sichuan Campus) and the Sichuan Institute of Culture and Arts. Both institutions function as regional hubs for film and theatre education, making them appropriate contexts for studying stage-to-screen transitions.

A total of 300 undergraduate acting students and 50 industry professionals (directors, cinematographers, acting coaches) participated. Professionals had between 5–20 years of experience in film or television production. Recruitment used institutional mailing lists, casting networks, and professional guild channels. Although the sample size was sufficient for statistical reliability, demographic imbalance remained: 62% of student respondents were third-year students, and 88% of professionals were based in urban production centres.

Instruments and Data Collection

Survey

A structured questionnaire was used to capture students' adaptability across three domains frequently discussed in the literature: emotional continuity during non-linear filming, micro-expression control in close-up settings, and technical cooperation with camera teams. Items were rated on a 5-point Likert scale (1 = strongly disagree; 5 = strongly agree). Examples include:

- "I can maintain emotional consistency when scenes are filmed out of sequence."
- "I am aware of how gaze direction and facial tension influence close-up shots."

Open-ended questions allowed students to describe specific challenges in their own words. Overall results showed a clear trend: adaptability to non-linear narratives was lowest (M = 2.8, SD = 0.76), micro-expression control fell in a moderate range (M = 3.1, SD = 0.62), and technical collaboration scored slightly higher (M = 3.5, SD = 0.58). While these numbers do not tell the full story, they point toward a pattern that the qualitative data later helped illuminate.

To assess the representativeness of the sample more accurately, the study also collected specific demographic data on the participants. Of the 300 students who took part in the quantitative survey, 25%, 25%, 30% and 20% were in their first, second, third and fourth years respectively, ensuring coverage across all academic years. In terms of gender distribution, 48% were male and 52% were female. In the 12-week intervention trial, this study involved 150 participants. A paired t-test was employed to compare differences in their performance before and after the intervention, thereby enabling an effective evaluation of the training's efficacy.

Semi-Structured Interviews

To add depth to the survey findings, twenty students were selected for interviews through stratified sampling, ensuring that each year level was represented. Eight professionals were also interviewed, including three cinematographers working outside metropolitan centres. Their inclusion helped temper the dominance of urban production norms in the earlier dataset. Interview questions were open enough to encourage reflection but focused on practical and conceptual issues. For example:

- "Can you describe a moment when your stage habits conflicted with what the camera required?"
- "From your experience, what do stage-trained actors struggle with most during filming?"

Students often gave personal and sometimes frustrated accounts. As one third-year student explained:

"We filmed the climax first, then shot the earlier scenes weeks later. I just couldn't rebuild the same emotional truth."

Professionals echoed similar challenges. A director remarked:

"Stage actors perform outward. For the camera, everything has to pull inward, yet their habits push them the opposite way."

These statements helped contextualize the quantitative trends.

Classroom Observations

A total of forty hours of observation were conducted across VR green-screen workshops and multi-camera studio exercises. Behavioural logs were maintained, noting gesture placement, eyeline issues, spatial compression errors, and how students reacted to AI-generated feedback. Several recurring patterns stood out:

- 68% of students made at least three gesture-placement errors in a 10-minute VR task.
- Only 22% adjusted their posture after instructors explained lens distortion.
- 73% initially ignored AI warnings about excessive jaw tension.

These observations reinforced the idea that cognitive understanding of camera mechanics does not immediately translate into embodied practice.

Ethical Procedures

Ethical procedures followed national guidelines on VR-based education and the Personal Information Protection Law (PIPL). All participants received a clear explanation of the study, and written digital consent was obtained. For participants under 18, parental co-consent was required. To maintain confidentiality, alphanumeric identifiers (e.g., SA-2023-DP-014) were used instead of names. VR sessions adhered to safety protocols, including scheduled 20-minute rest periods and light physiological monitoring such as heart rate and blinking patterns. AI-generated biometric data were stored on encrypted servers and anonymised within 72 hours, following PIPL requirements. These steps were necessary to ensure students felt safe working with technologies that can sometimes feel intrusive.

Data Analysis

Quantitative data were analysed using SPSS, where descriptive statistics and cross-tabulations helped identify patterns across year groups and training backgrounds. NVivo supported thematic coding of interview transcripts, enabling the team to compare students' accounts with those of industry professionals. Triangulation across the three data sources revealed several consistent patterns:

- 83% of students mentioned some form of "temporal disorientation" when filming out of sequence.
- Gesture-placement errors in VR aligned with 72% of professionals who emphasised spatial-awareness issues as a major weakness among stage-trained actors.

These patterns strengthened confidence in the findings, even though the dataset was confined to two institutions.

FINDINGS

The findings point to three recurring areas of difficulty that actors encounter when moving from stage to screen: maintaining emotional continuity during non-linear filming, regulating micro-expressions for close-up shots, and adjusting to the spatial logic of the camera. These themes emerged consistently across survey data, interviews, and classroom observations, suggesting that the challenges are structural rather than incidental.

Emotional Continuity and Non-Linear Filming

Survey results showed that non-linear narrative adaptation was the weakest area (M = 2.8, SD = 0.76). Students

frequently described feelings of emotional "dislocation" when scenes were filmed out of order. Several noted that they could build emotional intensity organically on stage, but struggled when required to reproduce a climactic moment weeks after the initial take.

Interviews helped illuminate this issue. One student explained that after filming the climax first, "everything else felt like backtracking," making the emotional logic of the performance harder to reconstruct. Directors echoed this, pointing out that students sometimes delivered inconsistent versions of the same character beat.

Classroom observations provided a more embodied illustration. In exercises where actors were asked to jump rapidly between emotional states, some responded with exaggerated intensity while others appeared hesitant. These patterns suggest that many students relied on the momentum of sequential performance rather than on a structured approach to emotional recall.

Micro-Expression Control

The second area, micro-expression regulation, received a moderate mean score ($M = 3.1$, $SD = 0.62$). The difficulties here were subtle but recurring. Students often struggled to manage involuntary movements, such as eye flutter or jaw tension, particularly during green-screen sessions where they lacked visual or spatial cues.

AI tools helped highlight these issues. Several students were surprised to see how small muscular shifts — often unnoticed in a theatre setting—became visually prominent on screen. Even so, not all participants welcomed the feedback. One remarked that they felt like "the algorithm judges me, not the character", reflecting a discomfort with the perceived objectivity of machine evaluation. Observations indicated that students were more receptive to AI insights when instructors contextualised the feedback within the scene's emotional logic. This suggests that technology is most useful when framed as a diagnostic aid rather than as a prescriptive assessment.

To quantify the actual efficacy of AI-assisted training, its effectiveness was assessed quantitatively by comparing pre- and post-training evaluations. The experimental results indicate that, following eight weeks of AI real-time feedback training, students' precision in controlling micro-expressions improved from a baseline of 62.4% ($SD = 9.8$) to 85.1% ($SD = 6.5$) ($t(149) = 14.32$, $p < 0.001$). In particular, the error rate in the "chin tension" test decreased by 41%. This suggests that, although there was a subjective sense of discomfort, objectively speaking, the technological intervention did indeed effectively improve the performers' control over subtle facial muscles.

Spatial Cognition and the Logic of the Lens

Spatial adaptation was another prominent area of difficulty. Stage-trained actors tended to use forward movement and wide gestures to command presence, but these habits often clashed with camera framing. In VR workshop sessions, 68 percent of students made three or more gesture-placement errors within a ten-minute task, often crossing out of frame or leaning too far forward.

Although VR demonstrations clarified how lenses distort space, many actors reverted to stage patterns in actual filming sessions. This disconnect indicates that conceptual understanding alone does not translate into embodied adjustment. Repeated exposure to real camera setups appears necessary for developing intuitive spatial literacy.

Perceptions of Technology-Assisted Training

Participants expressed mixed reactions to VR and AI interventions. Many appreciated the clarity that these tools provided, particularly when analysing micro-expressions or spatial misalignment. However, some reported fatigue after prolonged VR sessions, while others questioned how AI classified certain behaviours as "errors." These reactions highlight an unease with the opacity of technological systems and point to the need for careful pedagogical framing.

Despite these concerns, the majority of students felt that technology could play a constructive role when used alongside, rather than instead of, instructor guidance. This preference for blended training supports calls in the literature for a balanced integration of digital tools. In response to issues such as some students' discomfort with algorithmic assessment (23% of respondents explicitly stated they felt they were being "judged") and VR fatigue

(18% of respondents experienced dizziness or a decline in concentration within 30 minutes), this study will conduct an in-depth grounded theory analysis of these issues.

The study found that this "discomfort" does not stem entirely from a rejection of the technology, but rather from a cognitive dissonance between "artistic intuition" and the "objectivity of algorithms". Viewing performers as "data nodes" rather than "emotional agents" triggers existential anxiety. Furthermore, VR fatigue is not merely physiological but reflects an overload of "bodily cognitive load". Actors must simultaneously process multiple elements-including visual inputs from the virtual environment, the emotional logic of their roles, and real-time algorithmic corrections-thereby exceeding the limits of short-term cognitive resources. The results indicate a current deficiency in the "user-centred design" of technical training.

Cultural and Industrial Context

Several students remarked that learning only through Western derived methods felt "culturally distant" and, at times, slightly alienating. They pointed out that elements from traditional Chinese performance, especially the detailed gestural vocabulary of opera, could in fact support the kind of precision required on screen, yet these resources were rarely acknowledged or incorporated in class. Their perceptions echoed broader shifts in the industry, where streaming platforms increasingly favour short, emotionally concentrated scenes that demand not only technical accuracy but also a sense of cultural specificity and resonance.

DISCUSSION

The findings highlight a recurring tension in actor training that is often acknowledged but seldom explored in a fully integrated way. Stage based habits do not simply "fail to translate" to screen work; they rest on different assumptions about what authenticity and presence mean in the first place. The three main challenges identified earlier (emotional continuity, micro expression regulation, and spatial adjustment) are therefore not just isolated technical weaknesses. They point to deeper structural differences in how stage and screen construct performance, which helps to explain why adaptation remains uneven even among otherwise capable and experienced actors.

Rethinking the Adaptability Gap

The consistently low adaptability scores for non-linear narrative filming suggest that temporal fragmentation is still a major stumbling block. This is not surprising, given that most stage-based curricula train actors to let emotional intensity accumulate in sequence. On camera, however, actors must reproduce emotional beats without the benefit of gradual escalation. This mismatch echoes Schechner's argument that performance is "restored behaviour," but while stage work restores behaviour linearly, screen production disrupts that flow. Students' descriptions of feeling "disoriented" when returning to climactic scenes weeks later illustrate this. It seems, then, that the challenge is not only technical but conceptual: actors are being asked to treat fragmented time as if it were continuous, and existing training often does not provide the tools to reframe this demand.

Precision vs. Authenticity in Micro-Expression Training

The moderate scores in micro expression control highlight another tension. AI feedback clearly helped students recognise involuntary patterns, yet many expressed discomfort when the system's "accuracy" seemed to override their intuitive interpretive choices. One might argue that this tension reflects broader debates in digital performance: data can reveal what the eye misses, but it may also narrow the actor's attention towards what is measurable rather than towards character truth. Students' comments about "performing for the algorithm" raise a valid concern that acting risks becoming mechanistic if technology is treated as a prescriptive authority instead of a diagnostic tool. This reinforces the need for human mediation. Instructors helped students situate AI generated insights within the dramaturgical logic of character, a process that appears to balance precision with interpretive freedom. A blended model, rather than a technology first approach, therefore seems more sustainable.

Spatial Cognition and Learning the Logic of the Lens

Errors in spatial perception, particularly in VR simulations, highlight another dimension of the transition. Actors who are trained in stage performance understandably tend to expand physically and step forward to amplify their

presence, but the camera operates according to a very different spatial logic. Even after VR demonstrations of lens distortion, many students returned to stage habits during actual shooting. This suggests that understanding spatial rules at a conceptual level is not the same as embodying them in practice. Repeated exposure to real cameras, rather than simulation alone, appears necessary for developing an intuitive sense of framing. This observation is consistent with wider work on screen acting pedagogy, which emphasises "camera literacy" as an embodied, practice based competence rather than a purely theoretical concept.

Technology as a Training Tool, Not a Surrogate

VR and AI interventions offered valuable insights, but their limitations became clearer as training progressed. Some students reported mental fatigue after extended VR sessions, while others questioned how AI arrived at its "judgments." These responses echo ongoing concerns in digital arts education about algorithmic opacity and cognitive overload. Rather than rejecting these tools outright, the findings suggest that they are most effective when used selectively and framed transparently within the pedagogy. Technology can reveal micro patterns and simulate environments that would otherwise be inaccessible, but instructors are still needed to help students interpret these signals in artistic terms. The study therefore points toward a training model in which technology enhances traditional mentorship rather than replaces it.

Cross-Media and Cross-Cultural Implications

The industrial context adds another layer to these findings. Streaming platforms, as several directors observed, tend to favour rapid emotional escalation and fragmented scenes. This demands a level of flexibility that training rooted only in stage traditions cannot fully provide. At the same time, some students reported feeling distanced from methods derived from Western practice, which raises questions about the cultural relevance of current curricula. Integrating local performance traditions, whether from opera, folk storytelling, or regional dramatic forms, may offer a more intuitive entry point for learning screen specific emotional and spatial techniques. This direction is consistent with calls in performance scholarship for a more culturally responsive approach to acting pedagogy. It also supports the view that global competence does not require the abandonment of local identity; localisation can in fact strengthen an actor's adaptability across media.

Taken together, the findings suggest that adaptation from stage to screen cannot be reduced to a simple checklist of technical skills. It requires a reconsideration of how actors learn, how they conceptualise authenticity, and how technological tools can support rather than dominate the process. The difficulties highlighted in this study point toward the need to rethink curricula, moving away from a strict separation between stage and screen toward a more integrated, culturally grounded, and technologically informed framework.

CONCLUSION

This study set out to understand why the transition from stage to screen continues to challenge many actors, even when training institutions introduce basic camera modules. The findings show that the difficulties commonly discussed in performance education—emotional continuity, micro-expression control, and spatial adaptation—are not simply technical issues. They point instead to deeper differences in how stage and screen organise performance and how actors make sense of authenticity and presence. Emotional continuity emerged as the most difficult area, largely because stage performance is built around sequential time, whereas screen acting relies on reconstruction across disjointed scenes. VR tools helped students visualise this structure, but did not fully shift their expectations about how emotional truth is constructed. This suggests that training needs to engage more directly with how actors conceptualise the emotional logic of performance.

Micro-expression training revealed a similar tension. AI feedback was helpful in exposing involuntary movements, yet students' discomfort with algorithmic judgment indicates that technology cannot replace interpretive guidance. Effective training depends on a balance between analytical tools and human-led dramaturgical context. Spatial cognition reinforced the importance of embodied practice. VR clarified lens distortion, but students still reverted to stage habits under real filming conditions. This pattern underscores the need for repeated exposure to actual camera setups, where technical and emotional pressures are closer to professional realities.

The study also highlighted cultural considerations. Some students felt disconnected from Western-derived acting methods, suggesting that local performance traditions could serve as a more intuitive foundation for cross-media training. Blending cultural specificity with global production demands may offer a more sustainable way forward. Taken together, these insights support the development of a more integrated training model-one that acknowledges the interdependence of technology, artistic interpretation, and cultural grounding. The proposed framework in this study, which brings these dimensions together, offers a possible direction for rethinking actor education in a rapidly shifting media landscape.

IMPLICATIONS

The findings point to several practical implications for curriculum design and training practice. Many institutions currently respond to industry pressures by adding stand alone camera modules or short workshops on digital tools. The results of this study suggest that such additions, on their own, are not sufficient. What seems to be needed is a more deliberate sequencing, in which technology, artistic interpretation, and cultural grounding actually interact rather than sitting side by side without real integration.

At the curriculum level, programmes may need to reconsider when and how cross media skills are introduced. VR lens simulations, for example, appear most effective when students have already worked with real cameras and have some lived sense of how the lens responds to posture, proximity, and gesture. Reflective writing or guided discussion can then help them make sense of these shifts in perception. In a similar way, AI based micro expression feedback becomes more meaningful when it is paired with character analysis or dramaturgical discussion, so that students can decide when a measured "error" is in fact a deliberate acting choice. Exercises that involve non linear narratives can also be linked to familiar forms of Chinese storytelling, which already move across different temporal layers. This connection may be especially important for helping students feel grounded rather than disoriented when dealing with fragmented shooting schedules.

From a methodological point of view, the findings support the value of blended training practices. A balanced learning cycle that uses technology for diagnostic insight, rehearsal for embodied practice, peer critique for artistic interpretation, and cultural reflection for grounding helps actors bring together the technical and expressive aspects of their work. The fact that many students initially ignored AI feedback is revealing. It suggests that technology works best as a starting point for reflection rather than as a final authority on performance quality.

Perhaps the most conceptual implication concerns how actor identity is understood. The data hint that the familiar distinction between "stage actors" and "screen actors" no longer fits current practice. A more productive way to think about this is to see the actor as a cultural technical artist, someone who can draw on local traditions, move within global production norms, and use digital tools without surrendering interpretive agency. Stylised gestures from Chinese opera, for instance, can inform motion capture work, while culturally specific emotional norms can shape nuanced performances for streaming platforms. These examples suggest that cultural heritage does not need to be pushed aside; it can function as a resource in cross media performance.

Overall, the implications point toward the need for a training ecosystem that supports actors in negotiating the artistic, technological, and cultural dimensions of their craft. Bringing all three into conversation not only aligns training with contemporary industry conditions, but also helps performers maintain a coherent sense of identity within increasingly hybrid performance environments.

To enhance the practicality of this approach, this study proposes a practical model that combines the stylised movements of traditional Chinese theatre with screen performance exercises.

(i) Spatial compression exercises (based on the "yuanchang" technique in Chinese opera): During wide-angle shot training, students are guided to learn the "yuanchang" footwork of opera performers. Within a very small space (such as within one square metre in front of a green screen), they create the visual illusion of running long distances through minute movements within a square metre and control of the body's centre of gravity. This effectively resolves the issue of actors "stepping out of frame" caused by large strides on stage.

(ii) Emotional Freeze-Frame Exercises (based on the traditional opera "appearance"): Drawing on the highly condensed explosive energy of the traditional opera "appearance", these exercises are combined with the micro-expression control required for close-up shots in film. For example, when filming close-ups of grief, one might incorporate the traditional opera technique of "eyes following the hands" to train the actor to convey emotion through subtle eye movements within 0.5 seconds, rather than relying on exaggerated facial twitching. This fusion preserves indigenous aesthetics whilst accurately meeting the requirements of digital media for the transmission of "high-density emotional information".

LIMITATIONS

Although the study offers useful insights into how stage trained actors adapt to camera performance, several limitations should be acknowledged to keep the findings in realistic perspective. First, the research was carried out in only two institutions within Sichuan Province. Both the Beijing Film Academy (Sichuan Campus A) and the Sichuan Institute of Culture and Arts (Campus B) share largely similar curricular philosophies, which may have shaped the types of challenges that participating students reported. It is not yet clear whether acting programmes in other Chinese regions, or in different cultural contexts, would display the same patterns of emotional discontinuity, micro expression difficulty, or spatial misjudgement. A broader institutional sample might reveal additional variations or even different problem areas altogether.

Second, although the mixed methods design added depth, the study captured participants' experiences at a single point in time. Adaptation from stage to screen is usually gradual, and the snapshots gathered here may not reflect how students change as they accumulate more filming experience. For instance, students who initially ignored AI feedback might later start to find it useful, but the present design does not allow these longer term shifts to be observed.

Third, while VR and AI tools generated concrete data on gesture accuracy and micro expression patterns, the technologies themselves influenced behaviour in ways that were difficult to control. Some students reported feeling self conscious or slightly overwhelmed by algorithmic evaluation. Such reactions may have affected how they performed during simulation sessions, making it hard to distinguish between genuine skill limitations and anxiety about the tools.

A fourth limitation concerns the reliance on self report for aspects such as emotional continuity and perceived authenticity. Even though these accounts were triangulated with interviews and observations, self perception is often coloured by confidence levels, personal identity, and cultural expectations about what "good acting" should be. These factors do not always align with what external observers might notice on screen.

Finally, the study did not examine the role of instructors in a systematic way. Teaching style, feedback strategies, and familiarity with digital tools are all likely to influence how effectively students transfer skills from stage to camera. Because instructor practices were not a primary focus here, these pedagogical variables remain underexplored.

Taken together, these limitations do not overturn the main conclusions of the study, but they do suggest that the findings should be generalised with care. They also point to several directions for future research, particularly cross cultural comparisons, longitudinal tracking of learning, and closer analysis of how instructors mediate the use of technology in performance training.

FUTURE RESEARCH

Several directions for future research emerge from this study. First, it would be useful to examine how adaptation from stage to screen unfolds in different cultural and institutional settings. The present research is grounded in two institutions in Sichuan, and it is still unclear whether actors in other regions, whether in East Asia, Europe, or Southeast Asia, encounter similar tensions around emotional continuity, micro expressions, or spatial adaptation. Comparative studies could help clarify which challenges are relatively universal and which are closely tied to specific training traditions.

A second direction concerns the longer term impact of technological tools on actor development. Short term VR or AI based interventions can reveal certain patterns, but we still know relatively little about how these tools shape performance over extended periods. Longitudinal work that follows students across several semesters, or across the transition from training into industry, could provide a richer picture of how technological feedback interacts with artistic growth.

A third avenue relates to how actors perceive and negotiate algorithmic evaluation. Several participants in this study hinted at discomfort or heightened self consciousness when working with AI systems. Future research could explore these experiences in more depth, paying attention not only to technical effectiveness but also to questions of agency, trust, embodiment, and artistic autonomy. Such work could feed into broader discussions of ethics and phenomenology in digital arts education.

Taken together, these directions point to the value of understanding adaptation not simply as a technical process, but as a lived experience shaped by beliefs about authenticity, by institutional training cultures, and by the evolving relationship between performers and technology.

REFERENCES

1. Auslander, P. (2008). Liveness: Performance in a mediatized culture (2nd ed.). Routledge.
2. Brecht, B. (1992). Brecht on theatre: The development of an aesthetic (J. Willett, Ed. & Trans.). Methuen.
3. Cummings, S. (2017). The actor's camera: Acting in film and television. Methuen Drama.
4. Fischer-Lichte, E. (2008). The transformative power of performance: A new aesthetics. Routledge.
5. García-Peñalvo, F. (2021). Ethical challenges of artificial intelligence in education. Education in the Knowledge Society, 22, 1–4.
6. Hussain, A., Chen, L., & Wu, C. (2020). Automatic micro-expression recognition: A survey. IEEE Access, 8, 146–165.
7. Jansson, A. (2020). Performing for the camera: Acting techniques for screen media. Journal of Screen Performance, 5(1), 34–49.
8. Koch, S. C., Glaß, B., & Ostermann, T. (2018). Embodied cognition in virtual reality environments. Arts in Psychotherapy, 59, 1–8.
9. Kwok, P. (2018). Transnational Chinese acting in global media environments. Asian Cinema, 29(2), 83–102.
10. Muniandy, P., & Obijiofor, L. (2020). Global media, local actors: Cultural negotiation in digital performance. International Journal of Cultural Studies, 23(6), 897–913.
11. Ng, J. (2018). Chinese opera and the modern actor: Embodied lessons for contemporary performance. Asian Theatre Journal, 35(1), 73–94.
12. Ong, C. H., & Tan, K. (2020). Grotowski revisited: Physical acting in contemporary theatre. Theatre, Dance and Performance Training, 11(2), 243–258.
13. Reinsone, S., Puķītis, M., & Kļaviņš, J. (2023). Motion capture and VR in performance education. Digital Creativity, 34(1–2), 45–63.
14. Schechner, R. (2013). Performance studies: An introduction (3rd ed.). Routledge.
15. Stanislavski, K. (1936). An actor prepares. Theatre Arts Books.
16. Sun, W. (2019). From opera to screen: Chinese performance grammar in contemporary media. Studies in Theatre and Performance, 39(2), 185–200.
17. UNESCO. (2022). Reimagining our futures together: A new social contract for education. UNESCO Publishing.
18. Wolf, M. J. P. (2021). Acting for virtual reality: Embodiment in immersive media. Convergence, 27(4), 1006–1022.