



Research Paper

Technology and live theatre performance in Ghana: adaptation and innovation during the COVID-19 pandemic

Olivier ZakariaAbdulai

Department of Performing Arts
University for Development Studies

Noble Jesse Glikpoe

Department of Theatre Arts
University of Education, Winneba

Emmanuel Dickson-Bonney

Department of Theatre Arts
University of Education, Winneba

Abstract:

The COVID-19 pandemic disrupted live theatre globally, prompting Ghanaian theatre practitioners to adopt digital tools for performance and engagement. This study explores the influence of technology on live theatre during the pandemic, focusing on adaptation strategies, benefits, drawbacks, and implications for performance quality. Guided by the Diffusion of Innovations Theory, the study employed a qualitative case study approach involving semi-structured interviews and analysis of four technology-driven productions. Findings show that technology enabled continued production through online rehearsals, live streaming, and hybrid models, expanding audience reach and creative expression. However, challenges such as poor internet connectivity, reduced audience interaction, and technical issues were evident. The study highlights the need for improved digital infrastructure and skills development to support the future of theatre in Ghana.

Keywords: Technology, Live Theatre, COVID-19, Ghana, Digital Performance

Received 26 July, 2025; Revised 03 Aug., 2025; Accepted 05 Aug., 2025 © The author(s) 2025.

Published with open access at www.questjournas.org

I. Introduction

The COVID-19 pandemic has created an extraordinary challenge for the live theatre industry. With the sudden closure of theatres and the widespread cancellation of live performances, traditional methods of presenting theatre became impossible. In response, theatre companies have had to pivot to alternative approaches, increasingly relying on technology to continue their work. This shift has led to the exploration of digital platforms and virtual tools, enabling companies to adapt their productions for online audiences. Using video streaming, virtual sets, and digital effects, the theatre sector has sought to maintain its creative output and engage audiences in new and innovative ways during these unprecedented times.

The emergence of the COVID-19 pandemic has notably and profoundly influenced the domain of live theatre, inducing a fundamental reconfiguration of operational paradigms for theatrical organizations (Timplalexi, 2020). An example of this consequential influence can be discerned in the conspicuous rise of virtual performances (Aranyossy, 2022). Theatre establishments have adeptly harnessed a diverse range of technological tools, with live streaming platforms taking precedence, to orchestrate virtual theatrical spectacles that resonate with audiences within the confines of their homes, consequently prioritizing their comfort and safety. This novel avenue of expression has facilitated an expanded outreach of theatre companies, effectively encompassing demographics characterized by geographical remoteness or hindered mobility. Moreover, the proliferation of virtual performances has granted theatre institutions the liberty to experiment with innovative narrative modalities and production methodologies, thereby fostering a panorama of imaginative innovation within the industry.

In addition to virtual performances, theatre companies have also been experimenting with other technological tools, such as virtual reality (VR) and augmented reality (AR) (Asaad, 2021). Some theatre companies have been able to create immersive theatrical experiences for audiences, allowing them to interact with the actors and the performance in new and innovative ways. For example, some productions have used VR to create a fully immersive experience, where the audience is transported to a virtual theatre space and can interact with the actors in real time. These technological advancements have provided new and exciting opportunities for theatre companies to engage with audiences and create immersive experiences that were not possible before the pandemic. Another significant impact of technology on live theatre during the COVID-19 pandemic has been the move towards online workshops and training programs. Theatre companies have been able to conduct rehearsals, auditions, and other training sessions online, using video conferencing platforms such as Zoom. This has enabled actors and theatre professionals to continue their work and stay connected with the industry during the pandemic. It has also made theatre training and education more accessible to people who may not have been able to attend in-person workshops or classes.

The impact of technology on live theatre during the COVID-19 pandemic has significant implications for the future of the industry. The use of technology has expanded the reach of theatre performances and provided new opportunities for creative expression. It has also enabled theatre companies to reach new audiences and engage with them in new and innovative ways. However, the impact of technology on the theatre industry is not without its challenges, such as the need for significant investment in technology and the potential impact on the traditional theatre experience. Therefore, it is important for the theatre industry to continue to explore the potential of technology while also being mindful of its limitations and challenges.

The COVID-19 pandemic has brought about a seismic shift in the live theatre industry, and the impact of technology on live theatre during this time has been significant. The use of technology has enabled theatre companies to continue to create and deliver performances to audiences, albeit in new and innovative ways. The future of the live theatre industry is likely to be shaped by technological advancements, and theatre companies must continue to explore and experiment with new technologies to ensure the longevity and growth of the industry.

II. Literature Review

The role of technology in key sectors

Technological innovation has increasingly shaped critical sectors of society, notably healthcare, education, and entertainment. The literature reveals a strong consensus on the transformative power of digital tools, particularly during moments of global disruption such as the COVID-19 pandemic. In healthcare, the rapid expansion of telemedicine has redefined how medical services are delivered. This shift is not merely a technological response to crisis but a broader reimagining of healthcare accessibility. Hollander and Carr (2020) provide compelling evidence that telemedicine has improved access to care, reduced operational costs, and enhanced patient outcomes, particularly for populations in remote or underserved regions. These findings suggest a reorientation of healthcare delivery models, where technology acts as a bridge between service providers and marginalized communities.

In the educational sector, the adoption of online learning platforms is presented in the literature as both a necessity and an opportunity. The pandemic accelerated pre-existing trends toward digital instruction, revealing not only the adaptability of institutions but also the persistent inequalities embedded in access to learning technologies. Allen and Seaman (2020) argue that online education promotes flexibility, affordability, and broader accessibility, helping to remove barriers related to geography and scheduling. However, while these platforms offered a solution to educational disruption, the reliance on stable internet connectivity and digital infrastructure also highlighted significant gaps in educational equity.

Equally noteworthy is the transformation within the entertainment industry, where virtual reality (VR) and augmented reality (AR) have introduced novel forms of audience engagement. The literature suggests that these technologies are more than enhancements; they represent a paradigm shift in how entertainment is produced and consumed. Goff and Szczech (2019) emphasize the ability of VR and AR to transcend spatial limitations, enabling content creators to reach global audiences through immersive and interactive formats. This shift reflects a broader trend toward experiential media, where technological immersion replaces physical presence as the defining feature of audience participation.

Collectively, these studies underscore the complex role of technology in shaping access, participation, and experience across key societal sectors. While the pandemic catalyzed rapid technological integration, the literature points to long-term implications that extend beyond crisis management. The reviewed works emphasize both the potential and the limitations of digital transformation, suggesting that future research must continue to interrogate issues of equity, infrastructure, and user experience as technology becomes increasingly embedded in everyday life.

The Relevance and Impact of Live Theatre Performance

Live theatre remains a significant cultural and artistic force, serving as a platform for storytelling and shared human experience. It functions not merely as a form of entertainment but also as a medium that fosters emotional, social, and intellectual development. Its real-time, face-to-face format provides an immediacy that deepens audience engagement and emotional resonance. Bial (2014) highlights that live theatre enhances emotional intelligence by encouraging audiences to empathize with characters and engage with complex emotional situations. This empathetic engagement contributes to the cultivation of socially aware and emotionally intelligent individuals.

In addition to its emotional influence, live theatre plays a critical role in promoting social interaction and cultural cohesion. Penton(2017) notes that theatre brings together diverse individuals within a shared space, fostering community and cultural appreciation. Theatre can therefore be understood as a public forum where values are examined, and diverse perspectives are exchanged. It reinforces social bonds while simultaneously offering a space for the celebration and critique of cultural identities.

The cognitive benefits of live theatre are equally compelling. Gao (2019) indicates that theatre attendance enhances attention span and memory, while O'Neill (2015) emphasizes the reflective environment it provides, allowing audiences to explore personal and societal issues. This reflective capacity contributes to deeper self-awareness and critical thinking. Furthermore, Robinson (2016) frames theatre as a powerful medium for raising awareness of pressing social issues and mobilizing public advocacy. In this regard, theatre serves as a space for both consciousness-raising and collective action.

Despite its many contributions, the theatre industry faces enduring structural and financial challenges. Anderson and Hanchey (2016) observe that most theatre organizations rely heavily on ticket sales and donations, making them susceptible to economic instability. Such financial fragility constrains innovation and limits the growth of smaller or independent theatre institutions. Additionally, accessibility remains a major barrier. Delgado(2018)draws attention to the impact of geographic and economic limitations, which exclude many individuals, particularly those in underserved or rural areas, from participating in live theatre. These disparities hinder the democratizing potential of theatre and reinforce broader social inequalities in cultural access.

The literature underscores the complex value of live theatre as a tool for emotional development, cognitive enrichment, social engagement, and cultural advocacy. However, financial constraints and accessibility challenges continue to threaten its sustainability and reach. Addressing these challenges is essential for ensuring that live theatre remains an inclusive and resilient part of contemporary cultural life.

The Impact of the COVID-19 Pandemic Across Society

The COVID-19 pandemic represents a defining global crisis that has impacted nearly every aspect of human life, including healthcare, the economy, education, and mental well-being. The scale of its disruption is well-documented. By early 2021, more than 109 million cases and over 2.4 million deaths had been reported globally, placing immense strain on healthcare systems (Kamat, 2022). The crisis underscored significant deficiencies in public health infrastructure and highlighted the urgent need for effective intervention strategies. Galvani and Lewnard (2020) identify preventive measures such as mask-wearing and social distancing as essential in limiting transmission, drawing attention to the renewed importance of public health literacy and policy compliance during pandemics.

The economic repercussions of the pandemic were equally profound. A contraction of 4.3% in the global economy was reported in 2020, alongside a sharp rise in unemployment and poverty levels (Jackson, 2021). However, this disruption also catalyzed accelerated digital transformation across various industries. Bartik et al. (2020) document a rapid shift toward remote work and e-commerce, signaling a structural change in employment models and business operations. These transformations suggest not only short-term adaptations but also long-term shifts in how work is organized and delivered.

The educational sector experienced significant disruption, exposing deep-seated inequalities within global learning systems. According to UNESCO (2021), more than 800 million students were affected by school closures at the height of the pandemic. While many institutions transitioned to online learning, this shift was far from equitable. Faturoti (2022) emphasizes that students without access to internet-enabled devices or stable connectivity fell behind, exacerbating existing social and educational disparities. The pandemic thus highlighted the digital divide as a critical barrier to educational continuity and equity.

In the realm of mental health, the pandemic triggered widespread psychological distress. Cao et al. (2020) report increased levels of stress, anxiety, and social isolation, particularly among those infected and their immediate communities. The psychological toll of the pandemic was further compounded by fear, stigma, and prolonged uncertainty. Tomaino(2024)points to the role of virtual mental health interventions, including teletherapy and online support systems, as vital tools in mitigating the crisis's mental health impact. These solutions demonstrated the potential of digital health tools to expand access to care, especially in periods of restricted physical mobility.

The review portrays COVID-19 as both a crisis and a catalyst. While the pandemic exposed vulnerabilities in global health, economic, and educational systems, it also accelerated innovation and adaptation, particularly using digital technologies. The reviewed works suggest that post-pandemic recovery and future preparedness will depend not only on rebuilding damaged systems but also on reimagining them to be more resilient, inclusive, and digitally integrated.

III. Statement of the Problem

The COVID-19 pandemic has significantly impacted the live theatre industry, with the closure of theatres and restrictions on public gatherings leading to significant losses in revenue and the cancellation of performances. As a response, many theatres have turned to technology to continue their operations and reach audiences. However, there is a lack of scholarly research on the impact of technology on live theatre performances during the pandemic, specifically on how technology has affected the quality and authenticity of live performances, the accessibility of theatre to broader audiences, and the digital divide in the theatre industry, especially in Ghana. This study aims to address this gap by examining the impact of technology on live theatre during the COVID-19 pandemic, with a focus on understanding the benefits and drawbacks of using technology in the theatre industry and the potential implications for the future of live performance.

IV. Methodology

The paper utilized qualitative methodology and a case study design to explore the influence of technology on live theatre performance during the COVID-19 pandemic. The study focused on a population of theatre directors, actors, and technical designers. Using purposive sampling, production notes were selected from four (4) productions that incorporated live streaming, virtual reality (VR), and augmented reality (AR). Data collection involved semi-structured interviews with four theatre practitioners, including two directors, an actor, and a technical staff member. The collected data were transcribed and manually analyzed through thematic analysis, where key themes related to technology's impact on theatre were identified and refined. To ensure the reliability and validity of the findings, peer review and member checks were conducted. Ethical considerations were carefully observed, including obtaining informed consent, informing participants of their rights, maintaining data confidentiality, and upholding ethical integrity throughout the research process.

V. Research Questions

1. How have theatres adapted to the COVID-19 pandemic and what role has technology played in these adaptations?
2. What are the benefits and drawbacks of using technology in live theatre during the pandemic?
3. How has the use of technology affected the quality and authenticity of live performances?

VI. Analysis / Discussion

6.1. Adaptation and Technology's Role.

In understanding the role of adaptation and technology in theatre during the COVID-19 pandemic, A director ascertained that:

The pandemic brought our activities to a standstill, forcing us to cancel several planned productions and face significant uncertainty in planning. To adapt, we began exploring alternative ways to keep our audience engaged, such as shifting some of our rehearsals online using Zoom, a new experience for many of us. Technology quickly became a lifeline, as we relied heavily on social media platforms to stay connected with our audience, even live-streaming rehearsals, and small performances.

The pandemic's impact on live theatre in Ghana, which led to the cancellation of productions and created uncertainty in planning, mirrored the broader challenges faced across various sectors in the country during the COVID-19 crisis (Kamat, 2022,). In response, Ghanaian theatre practitioners had to quickly adapt by shifting to online rehearsals using platforms like Zoom, a new and challenging experience for many. This rapid adaptation is like the digital transformation seen in Ghana's education sector, where online tools became essential for continuing classes when schools were closed (Allen & Seaman, 2020).

Technology played a crucial role in keeping the Ghanaian theatre scene alive during this time. Social media and live streaming became vital for maintaining connections with audiences and ensuring the visibility of theatre companies. This situation is comparable to how telemedicine became a key tool in Ghana's healthcare system, allowing medical services to continue despite restrictions on physical interactions (Hollander & Carr, 2020). However, the transition to digital platforms was not without challenges, as many Ghanaian theatre practitioners were unfamiliar with tools like Zoom, requiring them to quickly learn and rethink how theatre could be performed in a virtual environment.

Despite these challenges, going digital created new opportunities for the Ghanaian theatre industry. The use of social media and live streaming allowed productions to reach a wider audience, including those in rural

areas who might not have had the chance to attend in-person performances, thus making the arts more accessible across the country (Goff & Szczech, 2019). This suggests that even after the pandemic, virtual performances might continue to play a role in Ghana, potentially leading to a hybrid model that combines in-person and digital elements to engage audiences. The experience of adapting to technology during the pandemic has likely set the stage for lasting changes in how theatre is produced and consumed in Ghana, like changes in other sectors as they adapted to the new normal.

A respondent also commented that,

We tried live streaming our plays on Facebook and YouTube, and the response was mixed. Some audiences appreciated the effort, while others missed the live, in-person experience. One of the biggest challenges we faced was internet connectivity; not all members of the team or audience had reliable access, which limited our reach. Despite these challenges, the pandemic pushed us to think creatively, and we've started considering hybrid performances that combine live and online elements, potentially expanding our audience beyond Ghana.

In Ghana, live-streaming theatre productions on platforms like Facebook and YouTube during the pandemic highlighted the promise and the limitations of using digital technology in the arts. Some audiences appreciated these online efforts to keep theatre alive during the restrictions, showing how digital platforms can help maintain cultural activities when traditional methods are not possible (Goff & Szczech, 2019). However, Ghanaian theatre traditionally relies on live, communal experiences, where the direct connection between performers and audiences is central (Bial, 2014). The shift to digital formats, while innovative, could not fully replicate this personal interaction.

A major challenge faced was the issue of internet connectivity. In Ghana, especially in rural areas, access to stable and high-speed internet is limited (Frimpon & Adaku, 2018). This digital divide meant that not all theatre practitioners and audience members could engage with or enjoy the live-streamed performances, reflecting broader inequalities in access to technology and online services.

Despite these challenges, the pandemic prompted Ghanaian theatre companies to think creatively about their future. The exploration of hybrid performances, which combine live and online elements, represents a promising approach. This method could address some of the issues caused by unreliable internet access by allowing audiences to participate in both ways (Hollander & Carr, 2020). By providing options for both in-person and digital attendance, theatre companies in Ghana could reach a broader audience, including the Ghanaian diaspora and international viewers (Goff & Szczech, 2019). This approach could facilitate new cultural exchanges and financial opportunities, helping to sustain and grow the visibility of Ghanaian theatre on a global scale (Robinson, 2016).

6.2 Benefits and Drawbacks of Technology.

To understand the benefits and drawbacks of technology on theatrical productions during the COVID-19 pandemic,

A respondent stated that:

Technology has been crucial in allowing us to continue creating and sharing our work despite the inability to perform live. For instance, video editing tools have enabled us to produce high-quality recordings of our plays, which were previously beyond our reach. Streaming our performances on social media platforms has also allowed us to reach audiences far beyond our usual geographical limits, which is especially valuable in Ghana, where people from different regions or living abroad can now enjoy our shows. Platforms like Zoom and YouTube have been indispensable in this process; Zoom has facilitated remote rehearsals, and YouTube has been a key tool for sharing our performances widely.

Technology has played a transformative role in the Ghanaian theatre scene, particularly when live performances were not possible due to the COVID-19 pandemic. The use of video editing tools has allowed theatre companies to create high-quality recordings of their plays, enhancing both the production value and the professional appeal of their work. This capability not only improves the quality of the recordings but also allows for the presentation of plays in a more polished and engaging manner (Goff & Szczech, 2019).

Streaming performances on social media platforms like Facebook and YouTube has expanded the reach of Ghanaian theatre beyond traditional geographical boundaries. This is especially beneficial in a country with diverse regional and international audiences. Connecting with Ghanaians living in different regions of the country or abroad provides an opportunity to engage with a wider audience, fostering a greater sense of community and inclusiveness (Hollander & Carr, 2020). This global reach can also increase exposure and potential support for Ghanaian theatre on an international stage (Goff & Szczech, 2019).

Platforms like Zoom and YouTube have become essential tools for maintaining the continuity of theatre practices. Zoom has enabled remote rehearsals, allowing theatre practitioners to collaborate and refine their work despite physical distance. This adaptation helps maintain the momentum of theatre projects and demonstrates the flexibility and resilience of the theatre community (Allen & Seaman, 2020). YouTube serves as

a powerful medium for disseminating performances to a broader audience, ensuring that theatre content remains accessible and relevant (Hollander & Carr, 2020).

Another respondent argued that.

Technology has allowed us to get creative with virtual sets and digital effects, adding new layers to our storytelling and ways to engage with our audience. However, there are challenges. Live streaming has faced issues like software glitches and compatibility problems, which can disrupt performances. In rural areas of Ghana, poor internet connectivity has made it hard for everyone to participate and access our content. We've also found that the personal connection of live theatre is lost online. The energy of a live audience isn't something digital formats can fully capture, and some audience members have said the online experience doesn't match the excitement of a live show. This highlights how important the physical presence is in theatre.

Regarding the response, technology has certainly transformed theatre in numerous ways. Virtual sets and digital effects, as noted by Goff and Szczech (2019), have opened creative possibilities that were once beyond reach, enhancing storytelling and audience engagement. These innovations enable us to visualize and create environments and effects that would be impractical or impossible in traditional theatre settings.

Yet, this digital shift comes with its own set of challenges. As Hollander and Carr (2020) highlight, technical issues like software glitches and compatibility problems with live streaming can disrupt performances and compromise the quality of the final product. This is a significant concern, as seamless technology integration is crucial for maintaining the audience's experience. In rural areas of Ghana, poor internet connectivity exacerbates these challenges. Limited access can prevent both team members and audience members from fully participating, as noted by Kamat, (2022). This lack of connectivity can restrict the reach of digital performances and limit inclusivity, impacting the overall effectiveness of online theatre initiatives.

Furthermore, the unique, personal connection of live theatre is often lost in digital formats. The immediate interaction and vibrant energy of a live audience are difficult to replicate online. Allen and Seaman (2020) point out that this disconnect can lead to some audience members feeling that the online experience lacks the excitement and immediacy of a live show. This feedback underscores the importance of physical presence in theatre and highlights the ongoing challenge of translating the live theatre experience into a digital format while preserving its essence.

Another respondent opined,

I believe technology will remain a key player in the theatre world even after the pandemic. We're likely to see more hybrid performances that blend live and virtual elements, providing greater flexibility and a wider reach. For improvements, I hope to see advancements that make technology more accessible and reliable for everyone involved. Enhancing internet infrastructure and creating more user-friendly platforms would significantly improve how we use technology in theatre.

Technology is expected to continue to be a major force in the theatre industry, even beyond the pandemic. The development and adoption of hybrid performances where live and virtual elements are combined highlight this trend. Hybrid formats offer significant benefits by providing greater flexibility and extending the reach of theatrical productions. For instance, audiences who cannot attend live performances due to geographical limitations or other constraints can still engage with the content through virtual platforms. This broader reach aligns with the increasing trend towards digital integration in the arts, enabling theatre companies to connect with a more diverse and global audience (Goff & Szczech, 2019).

The benefits of hybrid performances extend beyond merely reaching a wider audience. They also allow for innovative staging and creative experimentation. By blending live elements with virtual components, theatre practitioners can explore new ways of storytelling and audience interaction. This adaptability not only enhances the creative possibilities but also addresses the logistical challenges of traditional theatre, such as space and scheduling constraints (Hollander & Carr, 2020).

However, to fully realize these benefits, there are critical areas where technology needs to improve. One major area is internet infrastructure. In regions with poor connectivity, such as many rural areas in Ghana, inconsistent or limited access to high-speed internet can significantly hinder the effectiveness of digital and hybrid theatre initiatives (Kamat, 2022). Reliable internet access is essential for streaming performances smoothly and for participants to engage fully in virtual rehearsals and events. Improved infrastructure would help bridge the digital divide and make these technological advancements more accessible to everyone involved. In addition to better internet infrastructure, there is a need for more user-friendly technology platforms. Current digital tools and platforms can sometimes be complex and challenging to use, especially for those who are not tech-savvy. Simplifying these platforms and making them more intuitive would facilitate their integration into theatre practices. This could include improvements in software for live streaming, virtual collaboration tools, and online ticketing systems, which would enhance the overall efficiency and effectiveness of digital and hybrid performances (Allen & Seaman, 2020).

Overall, the continued advancement of technology holds great promise for the theatre industry. By addressing the challenges and focusing on enhancements in accessibility and usability, theatre practitioners can leverage these tools to create innovative and engaging experiences that resonate with audiences both locally and globally.

6.3 Impact on Quality and Authenticity.

The use of technology has had a significant impact on the quality and authenticity of live performances in both positive and negative ways.

A respondent opined that:

Technology has significantly enhanced the quality of our productions. With advanced video editing tools, we can create high-resolution recordings and sophisticated visual effects that were previously out of reach. These tools allow us to refine the visual and auditory elements of our plays, resulting in a more polished and professional final product.

Technology has indeed played a crucial role in enhancing the quality of theatre productions. Advanced video editing tools have become instrumental in creating high-resolution recordings and sophisticated visual effects, which were previously unattainable (Goff & Szczech, 2019). These tools enable theatre practitioners to achieve a higher level of detail and refinement in both visual and auditory aspects of their productions, leading to a more polished and professional final product. Video editing software such as Adobe Premiere Pro and Final Cut Pro allows for precise manipulation of video footage, enhancing clarity, color accuracy, and overall visual appeal (Hollander & Carr, 2020). This capability is particularly valuable in producing high-quality recordings that can be shared widely, making performances accessible to a broader audience.

Furthermore, the use of digital effects and virtual sets has expanded the creative possibilities for theatre productions. Technologies like Computer-Generated Imagery (CGI) and motion graphics enable the creation of intricate and immersive environments that can enhance storytelling and engage audiences in new ways (Kamat, 2022). This integration of advanced technology not only improves the aesthetic quality of productions but also supports innovative storytelling techniques that were not feasible with traditional methods. These technological advancements contribute to a more refined and engaging theatrical experience, demonstrating how digital tools can complement and elevate art.

Another respondent asserted that,

While technology has improved the quality of our productions, it also comes with challenges. Technical issues like software glitches and compatibility problems can affect the final product, and maintaining consistent quality across different platforms can be tough. To keep technology from overshadowing our artistic vision, we carefully plan and integrate it. Regular reviews and feedback help us ensure that technology enhances rather than detracts from our performance. Technology has also enabled us to use complex visual effects and virtual environments that would be hard to create physically. This flexibility allows us to explore new creative possibilities and engage our audience in innovative ways.

Technology has indeed transformed the theatre industry by enhancing production quality and offering new creative possibilities. Advanced tools allow for high-resolution recordings and sophisticated visual effects, which significantly improve the final product (Goff & Szczech, 2019). For instance, video editing software enables the creation of polished, professional productions that were previously difficult to achieve.

However, integrating technology into theatre comes with its own set of challenges. Technical issues, such as software glitches and compatibility problems, can disrupt performance and affect the overall quality (Hollander & Carr, 2020). Furthermore, maintaining consistent quality across various digital platforms can be difficult, especially when adapting content for different formats.

To address these issues and ensure that technology does not overshadow the artistic vision, careful planning, and thoughtful integration are essential. Regular reviews and feedback sessions are crucial in balancing technological enhancements with the core artistic elements of a performance (Dixon, 2015). This approach helps to ensure that technology supports rather than detracts from the artistic integrity of the production.

On the positive side, technology has opened new creative avenues. The use of complex visual effects and virtual environments allows theatre practitioners to explore innovative storytelling techniques that would be challenging or impossible to achieve physically. This flexibility not only enhances the visual and auditory experience but also engages audiences in novel ways, providing fresh and immersive experiences (Goff & Szczech, 2019). While technology brings both benefits and challenges, its careful integration can lead to richer and more engaging theatrical experiences.

VII. Findings

The study set out to examine how Ghanaian theatre practitioners adapted to the challenges posed by the COVID-19 pandemic, with particular attention to the role of technology. The findings revealed that technology played a critical role in ensuring the continuity of live theatre during the pandemic. Theatre companies and

practitioners adopted digital tools such as Zoom, YouTube, and Facebook to conduct rehearsals, stream performances, and stay connected with their audiences. This shift to virtual platforms enabled many productions to proceed despite restrictions on public gatherings and the closure of performance venues.

In assessing the benefits and drawbacks of using technology during the pandemic, the study found that digital tools offered several advantages. These included the ability to reach geographically dispersed audiences, including individuals in rural areas and members of the Ghanaian diaspora. Technology also allowed for the use of advanced video editing, virtual sets, and digital effects, which enhanced the quality and creativity of productions. Additionally, the shift to online platforms opened possibilities for hybrid performance models that blended in-person and virtual elements, thereby increasing flexibility and potential audience reach.

However, the integration of technology also presented notable challenges. Poor internet connectivity, especially in rural areas, limited the effectiveness of virtual performances and hindered participation from both theatre practitioners and audiences. Technical issues such as software glitches and platform compatibility problems further complicated live streaming efforts. Moreover, while virtual performances helped maintain visibility, they often lacked the immediacy, emotional depth, and communal energy that are central to traditional live theatre experiences.

The study also explored how technology influenced the quality and authenticity of live performances. It was found that while digital tools enhanced production quality through improved visuals and sound, they sometimes risked overshadowing the core artistic values of theatre. The absence of a live audience, for instance, diminished the interactive and spontaneous nature of performances. Practitioners highlighted the importance of using technology to complement, rather than replace, the authenticity of live engagement.

In summary, the findings indicate that technology has become an indispensable tool for the theatre industry in Ghana. While it opened new opportunities for innovation and audience engagement during the pandemic, it also introduced new challenges related to accessibility, infrastructure, and the preservation of theatre's live essence. Moving forward, the integration of technology in theatre practice will require careful planning, capacity building, and investments in digital infrastructure to ensure that the benefits are maximized without compromising the integrity of the art form.

VIII. Conclusion

The COVID-19 pandemic has drastically changed live theatre, pushing the industry to embrace new technologies. Advances in video editing and live streaming have allowed for high-quality recordings and virtual performances, reaching a broader audience, including those who are geographically distant. However, this shift has not been without challenges. Technical issues, such as software glitches and maintaining consistent quality across platforms, can affect performance. In rural Ghana, poor internet connectivity limits access and inclusivity, while digital formats often fail to replicate the personal connection and energy of live theatre. Despite these hurdles, technology has introduced new creative possibilities, enabling innovative storytelling and engaging productions. Hybrid formats that combine live and virtual elements promise greater flexibility and reach. Future improvements in internet infrastructure and more user-friendly technology will be key to fully leveraging these advancements while maintaining the artistic integrity and immersive experience of live theatre.

IX. Recommendations

Firstly, there is a need for significant investment in digital infrastructure, particularly in rural areas where internet connectivity remains poor. The government, in partnership with private stakeholders, should work to expand broadband access and provide affordable data services. This would help bridge the digital divide, allowing both theatre practitioners and audiences across the country to participate in virtual performances and online rehearsals without the limitations of unreliable internet.

Secondly, capacity building is essential. Many theatre practitioners were unfamiliar with platforms like Zoom, YouTube, and various video editing tools before the pandemic. To address this, regular training workshops should be organized to equip theatre professionals with the digital skills required for content creation, streaming, and virtual collaboration. This would not only improve production quality but also enhance the ability of theatre companies to reach broader audiences, including those in the diaspora.

Finally, as technology becomes more embedded in theatre practice, it is crucial to maintain the artistic integrity of performances. While digital tools offer new creative possibilities such as virtual sets and special effects, they should be used to complement, not overshadow, the core elements of live theatre. Theatre directors and producers must ensure that storytelling, emotional connection, and cultural relevance remain at the heart of their work. Careful planning, regular feedback, and thoughtful integration of technology will help balance innovation with authenticity, preserving the unique energy of live performance while embracing the advantages of the digital age.

References

- [1]. Allen, I. E., & Seaman, J. (2020). Digital learning in the COVID-19 era. Babson Survey Research Group.
- [2]. Anderson, C. J., & Hanchey, T. (2016). Theater and entertainment industry: Current issues and future directions. Business Expert Press.
- [3]. Aranyossy, M. (2022, September). Technology adoption in the digital entertainment industry during the COVID-19 pandemic: An extended UTAUT2 model for online theater streaming. In *Informatics* (Vol. 9, No. 3, p. 71). MDPI.
- [4]. Asaad, R. R. (2021). Virtual reality and augmented reality technologies: A closer look. *International Research Journal of Science, Technology, Education, & Management (IRJSTEM)*, 1(2).
- [5]. Bartik, A. W., Bertrand, M., Cullen, Z. B., Glaeser, E. L., Luca, M., & Stanton, C. T. (2020). How are small businesses adjusting to COVID-19? Early evidence from a survey. National Bureau of Economic Research.
- [6]. Bial, H. (2014). Performing empathy: Live theatre and the building of identity. Routledge.
- [7]. Cao, W., Fang, Z., Hou, G., Han, M., Xu, X., Dong, J., & Zheng, J. (2020). The psychological impact of the COVID-19 epidemic on college students in China. *Psychiatry Research*, 287, 112934.
- [8]. Delgado, M. (2018). *Music, song, dance, and theatre: Broadway meets social justice youth community practice*. Oxford University Press.
- [9]. Dong, L. (2022). Mapping Social Differences in the Virtual Classroom: Inclusive Multimodal Texts and Learner-Centered Design. *A Socially Just Classroom: Transdisciplinary Approaches to Teaching Writing Across the Humanities*, 67.
- [10]. Dixon, S. (2015). *Digital performance: a history of new media in theater, dance, performance art, and installation*. MIT press.
- [11]. Faturoti, B. (2022). Online learning during COVID19 and beyond: A human right based approach to internet access in Africa. *International Review of Law, Computers & Technology*, 36(1), 68-90.
- [12]. Frimpon, M. F., & Adaku, E. (2018). A comparison of high-speed internet service in Ghana: an analytical hierarchy approach. *Information Technology & People*, 31(1), 181-198.
- [13]. Galvani, A. P., & Lewnard, J. A. (2020). Epidemic dynamics of coronavirus disease 2019 (COVID-19) in China. *Annals of Internal Medicine*, 172(1), 8-
- [14]. Gao, Q. (2019). Effects of live theatre on cognitive functioning in healthy older adults: A preliminary study. *Educational Gerontology*, 45(9), 537-545.
- [15]. Goff, K., & Szczech, P. (2019). Augmented and virtual reality in the entertainment industry. *Journal of Tourism Futures*, 5(1), 67-76.
- [16]. Hollander, J. E., & Carr, B. G. (2020). Virtually perfect? Telemedicine for COVID-19. *New England Journal of Medicine*, 382(18), 1679-1681.
- [17]. Jackson, J. K. (2021). *Global economic effects of COVID-19* (No. R46270).
- [18]. Kamat, S. (2022). Atmospheres of Change: Virtual Production (Doctoral dissertation, Massachusetts Institute of Technology).
- [19]. O'Neill, J. (2015). Empathy and the theatre of the oppressed. *Theatre Research International*, 40(1), 30-42.
- [20]. Penton, J. (2017). A creative approach to community building: Theatre making with culturally diverse young people.
- [21]. Robinson, D. (2016). *Theatre as social change: Advocacy on stage*. *Theatre Topics*, 26(2), 117-126.
- [22]. Timplalexi, E. (2020). Theatre and Performance Go Massively Online During the COVID-19 Pandemic: Implications and Side Effects. *Homo Virtualis*, 3(2), 43-54.
- [23]. Tomaino, S. C. (2024). PSYCHOLOGISTS AND CLIENTS IN ONLINE INTERVENTIONS: NEW TOOLS AND RESOURCES TO PROMOTE WELL-BEING.
- [24]. UNESCO. (2021). *Education: From disruption to recovery*. [UNESCO.org](https://www.unesco.org)