Executive Summary

This dissertation explores the transformative role of digital technologies, including virtual reality (VR), projection mapping, Building Information Modeling (BIM), and LED lighting in set design for theatre and cinematography. The study utilizes case studies, semi-structured interviews, visual analysis, and focus group discussions to analyze how these technologies enhance set design's aesthetic and functional aspects while introducing challenges, especially in low-budget productions. The findings suggest that while these innovations open up creative possibilities, they are accompanied by high costs, technical difficulties, and a shift in traditional craftsmanship.

The introduction highlights the historical evolution of set design from traditional, manually crafted environments to digitally enhanced designs facilitated by CAD, VR, projection mapping, and BIM. These tools allow for creating complex and flexible set designs, enabling designers to present ideas more convincingly to directors and production teams and fostering more collaborative environments (Barbour et al., 2020; Lv et al., 2011). However, integrating digital technologies also presents challenges, such as high costs and the need for technical expertise, which may not be feasible for all productions.

The literature review examines the theoretical frameworks underpinning the integration of digital technologies in set design, including media convergence theory and aesthetic theory. These frameworks suggest that blending digital and traditional artistic practices enriches the sensory experience for the audience and enhances creative capabilities (Bughin et al., 2021; Barbour et al., 2020). The review also highlights the benefits of VR, projection mapping, and BIM in improving collaboration, spatial modelling, and scene transitions. Still, it emphasizes challenges like cost and complexity, particularly for small-scale productions.

The methodology focuses on qualitative research, employing case studies of iconic productions like "The Lion King," visual analysis of production images, and semi-structured interviews with industry professionals. This approach allows for a detailed exploration of how digital technologies impact both the creative process and audience engagement. The study employs purposeful and stratified sampling methods to ensure diverse industry perspectives. It uses thematic analysis to identify key themes related to adopting digital tools in set design.

Results from the study indicate that technologies like VR and projection mapping significantly enhance set design, allowing for dynamic scene changes and immersive experiences. However, these technologies also introduce common challenges, such as high implementation costs and technical barriers, which hinder their widespread adoption, especially in smaller productions (Ma, 2020). Moreover, the study underscores the need for continuous professional development to keep up with rapidly evolving digital tools.

The discussion aligns the study's findings with current research, confirming that digital technologies improve set design's aesthetic and practical aspects, enhancing collaboration and design flexibility (Goud, 2023; Ma, 2021). However, the increasing reliance on digital tools also raises concerns about the potential loss of traditional craftsmanship, with the shift towards rapid technological changes sometimes compromising the depth and quality of designs.

The study concludes by recommending future research directions to address the gaps identified, particularly the need for more studies on audience engagement with digitally enhanced set designs and the long-term impact of these technologies on the field. It also calls for

a balanced approach that integrates traditional craftsmanship with modern technology to preserve the artistry of set design while embracing innovation. Ultimately, the research emphasizes the importance of sustainable practices and the need for continuous training to navigate the challenges posed by digital technology in set design.