



Exploring The Impact of Imax Technology: A Qualitative Study Through the Lens of Wole Soyinka's Fourth Stage

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Date of Submission: 10-03-2026

Date of Acceptance: 22-03-2026

ABSTRACT: IMAX is a specialized cinematography format that uses high-resolution cameras, advanced projectors, and uniquely designed theatres. Its standout features include massive screens, steep stadium seating, and a unique aspect ratio of about 1.43:1, which differs from the standard 1.85:1 used in most American and British widescreen films. However, only a few IMAX theatres use the 1.43:1 ratio, as the standard has shifted to 1.90:1, slightly wider than before through the lens of wole soyinka's fourth stage. IMAX is a potent narrative medium because, according to research, it improves emotional reactions and deepens the viewing experience. More research on digital cinema with an emphasis on screen size, sensory stimulation, and emotional connections is also recommended by the report.

KEYWORDS: Immersive theatre, visual media, cinematic experience, audience participation, emotional response, and IMAX technology.

I. INTRODUCTION

IMAX transforms films and captivates audiences with its massive screens and powerful sound systems, enhancing perception and emotional responses. In a spacious, dim theatre filled with stunning visuals and music, the experience goes beyond a typical movie night. This leads us to our topic: The 1960s: The Birth of IMAX. Expo 67, a global exposition in Montreal, Canada, marked the inception of IMAX. The theme, "Man and His World," was divided into five categories: Man the Creator, Man the Producer, Man the Community, Man the Explorer, and Man the Provider (Lambert, 2015). Canadian filmmakers Roman Kroitor and Graeme Ferguson each directed films aligned with this theme. Ferguson's *Polar Life*, shown at the Man the Explorer Pavilion, provided an immersive experience with Arctic and Antarctic footage, where viewers sat on a rotating turntable for eighteen minutes as the film was projected on eleven

surrounding screens. IMAX, which began in the 1970s with nature documentaries, is now set for major success. Only IMAX 70mm is used to shoot movies like *Dune: Part Two*, which produce visuals that are 26% larger and have a higher aspect ratio, revealing details that are lost on regular screens. Theater owners say it's a life-changing event, with patrons reporting shivers during quiet periods and elevated heart rates during dramatic sequences. It is believed that IMAX engages the body and mind more thoroughly.

The Power of Big Screens:

The format that makes different screens, it's not just their size. Psychologists define "presence" as the feeling that the gap between viewer and narrative disappears, intensifying emotions like fear, wonder, or compassion as events unfold. IMAX excels at this, offering an incredibly realistic visual experience that triggers physical reactions, sweaty palms, goose bumps due to its stunning clarity.

There is an additional layer of cognitive cinema theory. It has been shown that the emotional centers of the brain are more active when the visuals and sounds used are in accordance with the expectations of the genre i.e. the majestic scenes in a science fiction film or the tense music in a thriller. Strong emotions are processed by the amygdala that is especially activated in the course of thrilling scenes of action on the big screens and adds to the feeling of presence and emotional impact.

Cinema goers want to have emotional attachments in movies and want more than a storyline. This emotional involvement be it awe or fear or catharsis appeals to audiences. Studies have shown that the majority of movie audiences attend movies to experience such emotional peak and the bigger the format such as IMAX, the better it is. This is quantifiable; it is a heart rate rise in relation



to actual emotions, particularly when using immersive technology.

Emotional computing and immersive media are transforming the film experiences. VR, AR, and MR have exciting cinematic interactions. Technological innovation has made possible multisensory narration, which makes viewers engaged. Technologies of audience emotion recognition enable adjustments of the narrative in real-time by means of emotional feedback, and correlate viewer responses to adaptive narrative telling. The movies aim to achieve empathy,

suspense, happiness, and fear, which emphasizes the significance of emotional appeal in the narrative.

II. RELEVANT STUDIES

Tokaji (2003) discovered in his research that joy and sadness are the two primary emotions involved in the experience of being moved. The indication state the emotional state of a mixed emotional of audience.

Zickfeld et al., (2019) noted that only a few studies have a limited number of studies have undergone the emotional responses linked to the better experience which is synced with emotional responses. Some research explored the connection and bodily sensations through self-measurement report.

Campos et al. (2013) highlighted the animated show designs of eight emotional states: laughter, wonder, serenity, thankfulness, attention, happiness, adorable, and conceit. They found that

laughter, wonder, serenity, thankfulness, attention, happiness, adorable, and conceit that varied in concentration, while awe and interest did not lead to smiles. The results of this and other studies suggest that optimistic emotions are not always related to beams but may resemble to different designs of facemask muscle activity.

Meninghaus et al. (2013) stated that the emotional state of being moved has a positive and negative valence that is accompanied by joy and sadness as the two requisite factors of the moving emotion. Sadness has been seen to be associated with the heightened activity of corrugator muscle.

III. METHODOLOGY

Problem of the study

In this study, the authors examine the effects of the IMAX in the immersion and emotional experience of the viewers in cinemas. It looks at how the use of wide screens, high-resolution images, and excellent acoustic systems have impacted on the cinematic experiences of the viewers. The paper provides an evaluation of how the audience perceives the IMAX presentations based on the Fourth Stage of Wole Soyinka in terms of liminal entry, emotional confrontation, and catharsis.

Scope of the Study

This study investigates audience engagement and emotional involvement in IMAX theatres, focusing on how screen size and audio-visual intensity affect viewer experiences. Data is

collected from students who recently watched films in IMAX and insights from IMAX professionals about the format's technical features.

Research Objective:

RO1: To investigate the emotional reactions of the audience while watching in the IMAX theatre..

RO2: To regulate the concern aspects of IMAX technology.

RO3: To examine audience perceptions that shaped by IMAX theatre

Research Questions:

RQ1: What impact do IMAX films have on the emotions of their audience?

RQ2: In what ways do the visual and auditory components of IMAX enhance viewer engagement and immersion?

RQ3: When compared to conventional movie formats, how do the emotional experiences of audiences influence their preference for IMAX?



IV. RESEARCH DESIGN

The study presents views of professionals and viewers regarding IMAX movies based on the qualitative approach to comprehend the experiences of stakeholders and their perceptions and interactions with IMAX experience based on personal accounts and professional opinion. Analysis of the opinions of the participants regarding IMAX theatres was carried out through qualitative methods as the trends identified throughout the surveys and interviews helped to demonstrate how the audience understands the content and experts judge it. We evaluated the impact of such technological factors as big screens and superior sound systems on the emotions of the viewers, their sense of immersion, excitement, and anxiety in a movie.

Study Parameters:

Such research studies usually develop experiments through the choice of the films genre (act, play, fear) and analyzing the demographics of the audience (stage, knowledge), modifying the technology (screens more than 50 feet, HD images, surround sound). They measure behavioural predictors (facemask languages), physiological predictors (degree of heart, degree of sweat) and self-reported degree of emotion (wonder or fear rating). The most important ones are the viewing format (IMAX, standard, 3D). The same movie clips, lighting and seating are used and there is uniformity. Usually, urban theatres involve 20 to 100 people with emphasis on emotional responses, preferences, and experience.

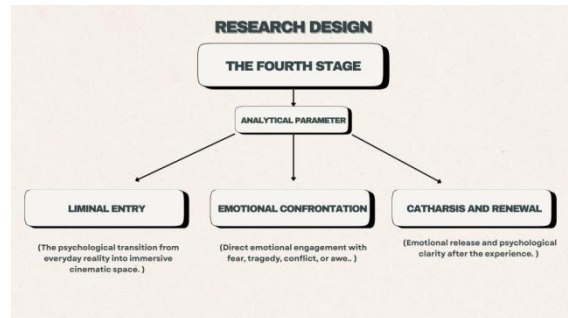


Figure 1. Research Framework

Content Analysis:

Ag electrodes were used in a standard lead II set up to record electrocardiograms (ECGs). After a band pass filter of 0.2-2000Hz, the waveforms were sampled at 1000 Hz. MATLAB peak detection tool was used to identify R-peaks and was analysed on artefacts and ectopic beats with required corrections. RR intervals (ms) were used to determine heart rate (bpm). The electrodes were two Ag/AgCl disposable electrodes with isotonic electrolyte paste attached on the index finger and middle finger of the left hand to record skin conductance responses (SCRs).

These electrodes were connected to a skin conductance unit (Vega Schemes, SA-4b) which used a constant current of 0.6 V (Fowles et al., 1981). Recording was done using a high-pass filter of 0.04 Hz. As in Shiota et al. (2011), we enumerated non-specific SCR during movie watching, with valid SCR being a minimum of 0.05 μ S increase in SCR during watching. SCR that happened within the first 5 seconds of the film were filtered out to prevent the artifact of the initial reactions. Four participants (2 men and 2 women) were dismissed because of too much artifacts.

V. DATA ANALYSIS

To evaluate if the film stimuli elicited the desired emotions, we conducted planned comparisons between the target and non-target emotions using two-tailed paired t-tests (Sato et al., 2007). We also performed one-way repeated-measures ANOVAs to analyze valence and arousal ratings across six film conditions: HA-MOV, LA-

MOV, AMUSE, AT, CAL, and NE films. The Greenhouse-Geisser epsilon (ϵ) correction was applied when sphericity was violated, and effect sizes were calculated using partial eta squared (η^2). Planned comparisons were executed with two-tailed paired t-tests, setting the significance level at 0.05.



Facial and Physiological Measures

Physiological data were analyzed using MATLAB-based biosignal analysis software. Average periods for each baseline and film phase were calculated (e.g., Kreibig et al., 2013). Change scores for corrugator and zygomaticus EMG activities were determined as a percentage of the mean EMG level during the preceding baseline (e.g., van Boxtel, 2010). Heart rate change scores were calculated by subtracting the baseline average from the film presentation average. For skin conductance responses (SCRs), we counted the valid SCRs during each film presentation (Shiota et al., 2011). Differences between scores and their baselines were assessed using two-tailed paired t-tests for each film condition. A one-way repeated-measures ANOVA was also conducted to examine score differences across six film conditions: HA-MOV, LA-MOV, AMUSE, AT, CAL, and NE, applying the Greenhouse-Geisser epsilon (ϵ) correction when necessary. Effect sizes were estimated using partial eta squared (η^2_p) values. Planned comparisons were made using two-tailed paired t-tests to compare (a) the NE condition with each positive emotion film condition and (b) the HA-MOV and LA-MOV conditions, with a significance level set at 0.05.

This study shows that IMAX raises an immersive storytelling situation, enhancing viewers' emotive associates. It provides a unique movielike practice that goes elsewhere out-of-date looking, reflecting theatre theory's intense elements. Audience advice and professional understandings climax the impression of immersive know-hows on appointment. By analysing viewer involvements and IMAX's practical topographies, investigators and filmmakers can understand how technology boosts emotional immersion and collective viewing. In conclusion, further exploration of immersive film formats will advance the development of complex narrative environments.

Result:

Mass movie environments greatly improve spectator's appointment, as highlighted by feedback from IMAX patrons and theatre staff. Recent surveys of students who observed films in IMAX presented that the larger screen, high-

Facial and Physiological Measures

Physiological signals were recorded using a Brain Products digital amplifier (BrainAmp ExG) and Brain Vision Recorder software. Facial EMG from the corrugator superciliosus and zygomaticus major muscles was measured with 4-mm Ag/AgCl electrodes placed on the left side of the face, approximately 12 mm apart. Electrode impedance was kept below 10 k Ω . Raw EMG signals were band-pass filtered at 10–1000 Hz and digitized at 1000 Hz, followed by 50-Hz notch filtering, 30–400-Hz digital band-pass filtering, rectification, and smoothing with a 200 ms time constant (cf. van Boxtel, 2010).



Figure 2. Imax

VI. CONCLUSION

definition graphics, and border sound meaningfully increased immersion. Many members felt a stronger emotional connection to the story and characters in IMAX likened to old-style formats. The scale of graphics and sound design were key issues that enriched the knowledge, increasing moods of awe, tautness, enthusiasm, and understanding throughout pivotal scenes. This exemplifies how IMAX technology improves storytelling by intensifying visual and aural elements.

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