

## Comparing the Impact of Screen Size on Student's Perception: A Study of Movie Theaters vs. Other Personal Screens

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## **Comparing the Impact of Screen Size on Student's Perception: A Study of Movie Theaters vs. Other Personal Screens**

**Abstract (EN):** The present study focuses on using films in education, exploring the potential differences in impact between watching films in a conventional movie theater and on personal screens such as PCs, tablets or smartphones. It is based on empirical data, involving field research with students (N = 324) aged between 12 and 18 years old. Online questionnaires, accessible via QR codes, were used to collect the data at the end of the film screenings. The results indicate that the traditional movie theater viewing experience leads to a higher level of impact and increases the predisposition to engage with the content translated into more extensive and in-depth comments within the field research. Furthermore, it is noted that students who watched films on personal screens attributed less importance to visual aspects, particularly screen size and resolution, being a potential indicator of less attention and focus on what is being presented. Above all, this study demonstrates the importance of creating movie theaters-like atmosphere in educational settings to provide students with a more intense and effective audiovisual experience.

*Keywords: audience reaction, screens, films, students, perception.*

## **Comparando o Impacto do Tamanho do Ecrã na Perceção dos Alunos: Um Estudo de Salas de Cinema vs. Outros Ecrãs Pessoais**

**Resumo (PT):** O presente estudo centra-se na utilização de filmes em âmbito educativo, explorando as potenciais diferenças de impacto entre ver filmes numa sala de cinema convencional e em ecrãs pessoais como PCs, tablets ou smartphones. Baseia-se em dados empíricos, envolvendo pesquisa de campo com alunos (N = 324) de idades compreendidas entre os 12 e os 18 anos. Foram utilizados questionários online, acessíveis através de códigos QR, para recolher os dados no final das sessões de visionamento dos filmes. Os resultados indicam que a experiência de visualização em sala de cinema provoca um nível de impacto mais elevado e aumenta a predisposição para o envolvimento com os conteúdos traduzido em comentários mais extensos e aprofundados no âmbito da pesquisa de campo. Além disso, constata-se que os alunos que assistiram aos filmes através de ecrãs pessoais atribuíram menor importância aos aspetos visuais, designadamente ao tamanho e resolução do ecrã, sendo um possível indicador de menor

atenção e foco no que está a ser apresentado. Acima de tudo, este estudo demonstra a importância de criar um ambiente semelhante ao das salas de cinema em contextos educativos para proporcionar aos alunos uma experiência audiovisual mais intensa e eficaz.

*Palavras-chave: reacção do público, ecrãs, filmes, alunos, percepção.*

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## Introduction

In today's media landscape, audiovisual content can be seen on very different types of screens, including traditional cinema screens, televisions, computers, tablets, or smartphones. The size of the screen can have a significant impact on the way viewers perceive and engage with the content being presented (Appel, & Mengelkamp, 2022; Baranowski, & Hecht, 2014; Beugnet, 2014; Bracken, & Pettey, 2007; Reeves, Lang, Kim, & Tatar, 2009; Troscianko, Meese, & Hinde, 2012; Van Der Sluis, Van Der Broek, Van Drunen, & Beerends, 2018).

This topic is in line with the opening of the dialogue published by Martine Beugnet and Annie van den Oever (2018, p. 247) highlighting how audiences have grown accustomed to viewing films on a diverse range of screen sizes, spanning from large-format IMAX and traditional cinema screens to mid-size HDTVs or PCs from the post-1990s era, and even smaller devices such as tablets and smartphones. Numerous studies have argued that larger screens may offer a more immersive and engaging viewing experience (Baranowski, & Hecht, 2014; Kim, & Sundar, 2016; Rao, & Hartmann, 2015; Reeves et al., 2009), while smaller screens may be less effective in capturing and maintaining viewer attention (Dunaway, & Soroka, 2019; Szita, 2019a, 2019b; Szita, & Rooney, 2021). However, is it currently possible to empirically verify the validity of this assumption regarding the perception skills of today's students, especially considering they live surrounded by various types of screens in their daily lives.

Following this path, the present study aims to improve our understanding of the potential disparity in the impact of viewing films in a traditional movie theater as opposed to mobile media formats, commonly found in educational contexts. Findings in this area are expected to be particularly relevant when films are used in a school setting, regardless of their specific purpose. The use of films in education can be a powerful way to enhance student engagement and learning. Teachers, educators, trainers, school psychologists and other professionals in the education field are constantly looking for effective strategies to incorporate films into their teaching experiences, appealing to the intrinsic power of audiovisual communication (Martinelli, 2020). The effectiveness of audiovisual communication depends on the proper use of sound and visual elements to capture attention, convey emotions, and retain people's memory more effectively (Chion, 1994). Films can provide a visual and audio representation of the material being studied, which

can help to make the material more engaging and memorable (Petkari, 2017, p. 724). Films can also be used to teach students how to evaluate and interpret media messages and how to use media as a form of communication (Couldry, 2019), which is becoming increasingly important in today's society, as media plays an increasingly prominent role in shaping people's perceptions and beliefs. By analyzing the narrative, cinematography, and other elements of the film, students can develop critical thinking skills (Brown, 2011; Park, & Cho, 2021). Additionally, films can expose students to different cultures, historical events, and points of view which can promote cultural awareness and understanding and can also help students develop empathy and perspective-taking skills. In addition, films can engage emotions and spark imagination, serving as a powerful tool for inspiring creativity and problem-solving. Also, the entire pedagogical process is enhanced by using video, as it encourages the student to engage in self-discovery (Kim, & Sundar, 2016, p. 63). After all, the use of film in education is an acquired fact. Currently, the paradigm is to identify the most effective way to promote their viewing.

This led us to the research question of this study: Does watching films on personal screens, such as a PC, tablet, or smartphone, result in a less significant impact level? The impact level refers to the influence of a media content on an audience, characterized by changes in attitude, behavior, or cognition. It is often measured on a numerical scale and allows one to evaluate the impact of the content viewed, under the influence of the medium used for that viewing (Gunter, 2000). To provide a comprehensive understanding of the claims made in this study, a brief review of the literature will be conducted to examine the key findings and conclusions of previous research on the topic of impact levels of different screen sizes and film perception. The main intention of this article is to support the decision to provide the best possible experiences for students today, considering that it is always necessary to take into account the preexisting conditions in schools and the need for a rigorous technical evaluation of the available audiovisual resources (Szita, 2019a).

### **Literature review**

In pursuit of a redefinition of the concept of cinema, the French scholar and writer Raymond Bellour (Bellour, Radner, & Fox, 2018, p. 52), argues that only specific types of experience merit the designation of cinema. To achieve such recognition, some requirements have to be satisfied. A dark room must be provided for the screening, the

viewing must occur within a prescribed period of time, and the viewer must be seated among other audience members during the screening. These requirements constitute the foundational elements of the traditional cinema experience. The same view is reinforced by Martine Beugnet, a French film theorist and professor of Visual Studies at Diderot University in Paris. According to her, cinema can only be identified as the merging of a film and its exhibition on a big screen in front of an audience. Watching the same film on the small screens of smartphones alters its appearance and effect compared to viewing it on larger screens (Beugnet, & Oever, 2018, p. 249). Roger Odin, professor of communication at Sorbonne-Nouvelle University, introduces the term: *other screens*. The author's perspective is that the relocation of movies from cinema screens, their intended medium, to different screens is an evolving idea, which presently includes computer displays, tablets, and mobile devices (Odin, 2018, p. 176). In her thesis titled 'Smartphone Cinematics: A Cognitive Study of Smartphone Spectatorship', Szita (2019b) has contributed significantly to this field by demonstrating that the experience of seeing a film on a small screen affects the understanding and immersion. To demonstrate these findings, the author promoted an experiment comparing participants who watched movie clips under four conditions: smartphone viewing with and without distractors, and a projector with big screen in traditional cinema spaces with and without distractors, while physiological responses, subjective ratings, and comprehension tests were recorded. Directly related, Szita and Rooney (2021, p. 15) demonstrated that smartphone viewing works best without distractions and that increasing screen size promotes viewer engagement with a film, ultimately leading to a stronger response to narrative events. In their carefully designed study, the authors demonstrated the effectiveness of this type of comparative experiment opposing mobile screens to a stationary projector screen. When discussing the limitations of mobile screen size, it is crucial to address the idea of intelligibility, since screen size substantially affects comprehensibility (Van Der Sluis et al., 2018, p. 4) and the subsequent impact coming from the correct interpretation of the content. According to Troscianko et al. (2012) the subjective ratings of presence, or involvement with a movie, increased with screen size, and real-time measures of presence may help assess audience experiences for different types of displays and different types of content. The experiment was carried out by more than 40 participants divided into 2 groups. In a very pragmatic way, Reeves, Lang, Kim, & Tatar (2009) established an experiment in which attention level was measured by heart rate. The study results

revealed higher levels of arousal when viewing content on larger screens than on medium and small screens, in line with previous investigations. On the other hand, the study by Appel, & Mengelkamp (2022) about watching videos on a smartphone's small screen reveals that a smaller screen size does not impair on narrative transportation. It should be taken into account that this comparative study was conducted between people who watched videos on a smartphone or computer screen, which could affect the results, as the traditional cinema setting was not included in the comparison. In a similar kind of experiment, Rigby, Gould, Brumby, & Cox (2016) conclude that viewing on very small screens results in decreased engagement, but once a certain screen size is reached, the impact is less significant. This reveals the uselessness of differentiating between different types of small screen. Thus, a study was conducted that examined the impact of screen size on viewer immersion while watching movies on Netflix, comparing various screen types such as smartphones, laptops, and PC monitors. It is essential to note the methodology used in this experiment, including the reporting of immersion levels through questionnaires and the direct and insightful way in which the results were presented. Finally, a study conducted by Bracken, & Pettey (2007) performed a comparative experiment between an Apple iPod and a standard television (now considered old). The main achievements indicate that users experience a sense of presence when interacting with very small screens, and perceive these mobile media as being very absorbing. This draws our attention to the relevance of time lapses in the literature review, especially regarding the evolution of technological media, in the era when many productions (such as Netflix's) are being adapted for small screens, paying attention to the scale of footage while shooting to enhance the viewing experience on mobile personal devices.

## **Methods**

### **Design and Procedure**

The current study aims to examine the potential variation in impact between watching films in a conventional movie theater compared to other personal screens such as PCs, tablets, or smartphones. Due to the diminishing presence of televisions in modern classrooms, they were not incorporated into this experiment. The study was carried out on São Miguel Island, Azores, Portugal. Data collection occurred between November 15

and December 17, 2021, immediately after restrictions related to COVID-19 were lifted in Portugal. The global pandemic crisis facilitated the execution of this comparative study, with a considerable number of teachers and schools choosing to carry out this cinema session within the protected confines of their classrooms. The ICT classrooms, equipped with PCs (or laptops) and tablets, were the preferred locations in schools, requiring physical distancing of students due to the risk of COVID-19 contagion.

The research design was carried out through a comparative study between two groups of participants. Both groups were exposed to the same session of 12 animated short films. The selection of films for this study was made specifically for a teenage audience. The selected films dealt with subjects that are relevant to the lives of young people in society. The subjects covered in the films included: Environment, Love and Sexuality, Bullying, Social Dilemmas, Drugs, Emotions, Family, Gender, Racism, Interpersonal Relationships, Religion and Culture, and Violence. Among the 12 films, 8 had no dialogue, which gives central importance to both image and sound, reaching students of different ages. The entire session had a total duration of 60 minutes.

The first group of participants viewed the films in a conventional movie theater, specifically at the Teatro Micaelense (Ponta Delgada, São Miguel Island, Azores). This group had the opportunity to experience the films on a large screen, with a high-quality sound system, and in a dark room atmosphere, allowing for optimal viewing conditions. The sound system featured a sophisticated audio system that included multiple speakers, amplifiers, and sound processors. This setup helps to create a clear and immersive sound output which allows a well-balanced acoustic level throughout the entire space. Furthermore, each session had a high level of attendance, which naturally triggered a dynamic group reaction.

The second group of participants viewed the same films on personal devices, such as PCs, tablets, or smartphones. This occurred in numerous classrooms in several schools on the island, always under the supervision of a teacher. The second group had the convenience of viewing films on personal devices, but the viewing experience may have been affected by factors such as screen size, sound quality, and classroom lighting conditions.

To measure the impact of screen size on student perception, a combination of quantitative and qualitative research methods was applied. Participants in both groups were asked to



complete an online questionnaire. The questionnaire was made available through a QR code, immediately at the end of the film sessions. Participation in the study was voluntary and each student was free to choose whether or not to participate. The questionnaire was intended to rate participants' overall satisfaction with the viewing experience, as well as their perception of various elements such as visual and sound quality, immersion and engagement, and other factors that may impact on their experience. Microsoft Power BI was used as the primary data visualization tool, while Jamovi was used for the statistical calculations presented below. Furthermore, a subset of participants in both groups chose to submit a facultative text comment in the final section of the questionnaire. The total number of opinions was taken into account and their content was categorized and properly analyzed due to its qualitative nature using MAXQDA. This approach was particularly relevant for measuring impact through enthusiasm and predisposition to provide feedback (Martinelli, 2020, p. 82; Tan, 2013, p. 16). Through this form of written communication, it was possible to identify patterns, themes, and categories in the students' texts (their own personal opinions) and then use them to confirm or refute the numerical results related to the level of impact. In the design of this study, ethical considerations were taken into account to ensure the protection of the participant's privacy and confidentiality. All data collected from the online questionnaire were anonymized, and any identifying information such as IP addresses was deleted. All participants gave their informed consent by agreeing to answer the questionnaire.

### **Sample**

Out of over 1,200 students who attended the film sessions, a total of 324 valid questionnaires were obtained for this study. On average, each questionnaire was completed in 7 minutes and 7 seconds. Selected based on availability and willingness, this convenience sample effectively represents the target student population aged between 12 and 18 years old, all of them residents on São Miguel Island, Azores, Portugal. These ages match the third cycle and secondary school in the Portuguese educational system. All schools established on the island, including public and private institutions, were invited to participate. A total of 29 institutions were involved in the study, including public and private schools, professional schools, educational centers, and other establishments primarily engaged in teaching activities. In the 2021-2022 school year, the general population of students on the island consisted of 7,587 students (Governo dos

Açores, 2021, p. 62) within the defined spectrum. The sample was segmented according to gender identity.

Table 1 – Gender identity as a percentage. Source: Own elaboration

<i>%</i>	<i>Gender Identity</i>
50.16	Male students
49.21	Female students
0.32	Transgender, non-binary or non-conforming students
0.32	Students who preferred not to answer

The division into groups was carried out by preanalyzing the sample ( $N = 324$ ) and collecting the number of respondents. The first group, consisting of 183 students ( $N = 183$ ), viewed the films in a conventional movie theater, Teatro Micaelense. The second group, which contained 141 students ( $N = 141$ ), viewed the same films on other personal screens such as PCs, tablets or smartphones. This distribution of the sample allows for a direct comparison of the impact of the viewing situation on the student's perception of the films. This distribution of the sample allows for a direct comparison of the results obtained in the next section by comparing the responses of the two groups of participants. The number of answers obtained from the first group was higher. We chose not to randomly eliminate the answers since they also contained qualitative content. It is important to note that although the number of participants were higher in the first group, the percentages of responses were equalized to account for any potential bias.

Table 2 – Division by groups under analysis. Source: Own elaboration

<i>Group</i>	<i>Participants</i>	<i>%</i>	<i>Medium</i>	<i>Location</i>
1 <sup>st</sup>	183	56.48	Movie Theater	Teatro Micaelense
2 <sup>nd</sup>	141	43.52	PC, Tablet or Smartphone	Schools Classrooms

### **Margin of error**

The margin of error is 5.33% with a confidence level of 95%. This indicates that there is a 95% probability that the results obtained from the sample of 324 students, selected from a population of 7587 students, will not differ by more than 5.33% from the results that would be obtained if the entire population were surveyed. The response distribution is 50%, representing the verified heterogeneity on the island. It is important to note that this calculation is based on the assumption of a simple random sample and that the population is normal or at least close to normal. With such a large sample size, the margin of error for this study is relatively low, indicating that the results are likely to be representative of the larger population.

### **Instrument**

During data collection, a questionnaire was applied as the main instrument to collect data. The questionnaire was designed and distributed using Microsoft Forms, a university-owned platform, to ensure the security and privacy of the participant's responses. This platform also allowed real-time statistical visualization and analysis of the collected data during the sessions. The questionnaire was made accessible to the participants using a QR code, a feature available on that platform, which was projected onto the screen at the end of each session. The questionnaire consisted of 15 questions in total, which were designed to gather information about the participants' perception of the film viewing experience. The questionnaire included a combination of different types of questions, such as multiple-choice questions with single answers, multiple choice questions with one or more answers, and questions that used a scale ranging from 0 to 6. Additionally, there was a final optative question that allowed participants to provide elaborate comments in a scalable text box. This method has been tested, providing a reliable and up-to-date collection method for this study. The questionnaire was open for a limited period of time, typically one hour after the end of each screening session.



Figure 1. Exterior and interior perspectives of Teatro Micaelense on São Miguel Island, Azores, captured during the documented experience.  
Source: Own elaboration

## Results

The main outcome of the study was the impact level of the viewing experience, which was measured on a scale from 0 to 6. The mean impact score for the first group (viewing in a movie theater) was 4.40 ( $SD = 1.17$ ), and for the second group (viewing on other personal screens such as PCs, tablets, or smartphones) was 4.03 ( $SD = 1.29$ ). A t-test was conducted to compare the mean impact scores between the two groups, and the results showed that there was a statistical difference between the two groups, with the first group scoring higher on average.

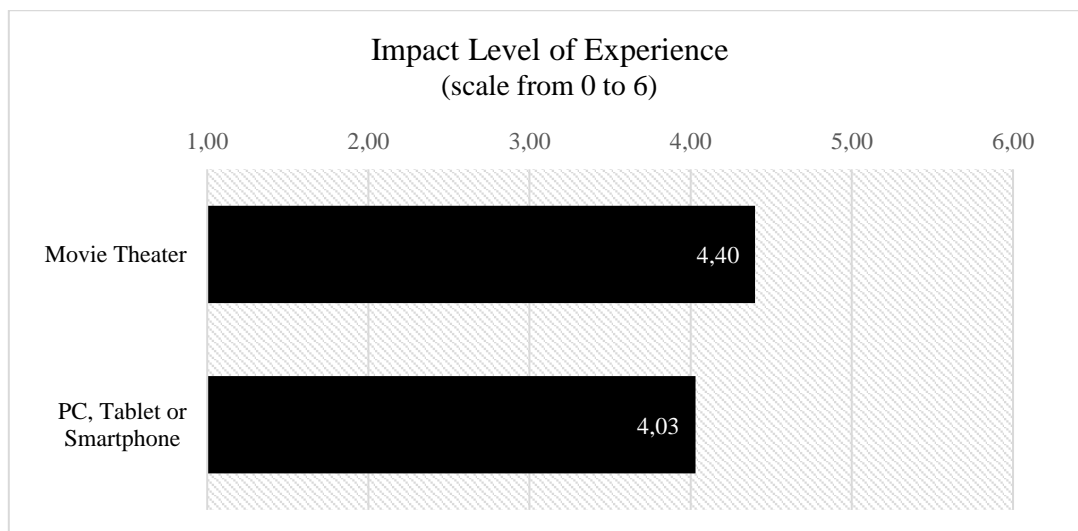


Figure 2. Impact level comparison between two groups. Source: Own elaboration

The word count in the optional comments section was analyzed. The first group (N = 183) had an average of 9.9 words per participant, with a total of 1817 words written. The second group (N = 141) had an average of 8.0 words per participant, with a total of 1122 words written. A new t-test was conducted to compare the average number of words written per participant between the two groups, and the results showed that there was a statistically significant difference between the two groups, with the first group writing more words on average. Thus, it is evident that the first group, who watched the films in the movie theater, wrote more in the optional comments box than the second group, who watched the film on personal devices. This clearly reveals a behavioral trend.

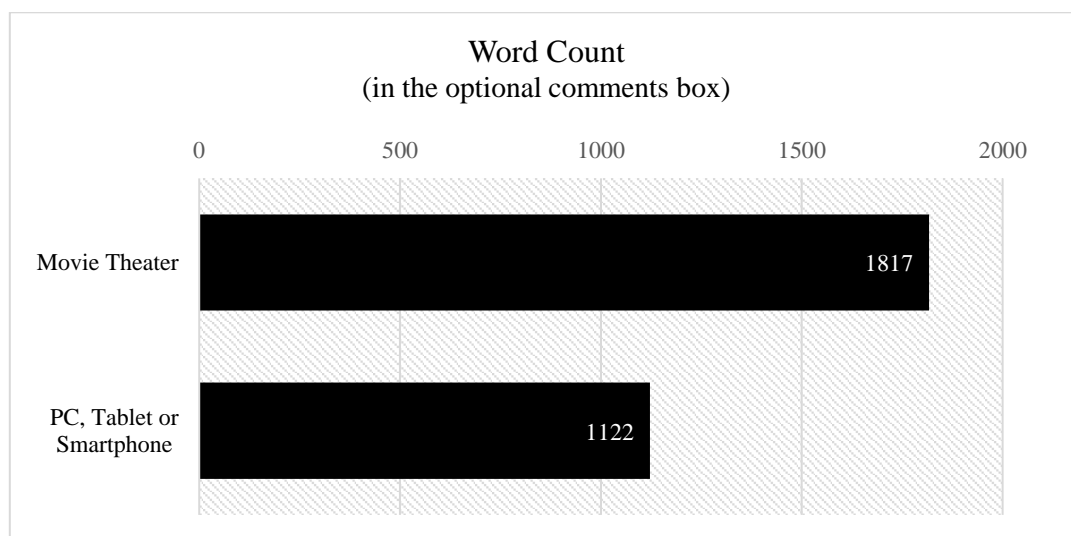


Figure 3. Comparison of word count between two groups. Source: Own elaboration

The word cloud visualization was also generated using the optional comments provided by the participants. The responses were grouped into different categories: opinions on specific films, comments on themes, suggestions for improvement, and general impressions. Some participants expressed their preference for certain films, while others provided insights into the themes discussed and proposed additional topics. In general, the feedback was diverse and reflective of individual experiences. It is worth mentioning that some additional complexity was observed in the answers provided by the first group.



Table 4 – Importance given to images and sound. Source: Own elaboration

<i>Group</i>	<i>While watching the films, I gave more importance to:</i>			
	<i>Images</i>	<i>Sound</i>	<i>Both (Image + Sound)</i>	<i>Not Sure</i>
	<i>%</i>	<i>%</i>	<i>%</i>	<i>%</i>
Movie Theater	13.27	4.01	36.11	3.09
PC, Tablet or Smartphone	14.81	1.85	24.69	2.17

In comparison, participants who watched films in a theater were more likely to consider both (images + sound) important, while those who used personal devices tended to prioritize image rather than sound. This suggests that sound on mobile devices is quite often left in the background.

### Discussion

The initial finding of the study confirms that the group who viewed films in a movie theater reported a higher impact level (mean = 4.40) compared to the second group, who viewed films on other personal screens such as PCs, tablets, or smartphones (mean = 4.03). The difference in the mean of 0.37, on a scale of 0 to 6, shows a remarkable impact, highlighting the significance of the outcome in comparing the two types of experience under discussion. It is also necessary to consider that the method of exhibition (medium) can considerably shape the audience's experience.

The second finding is revealed through word count analysis, which provided additional information. The first group, who viewed the films in a movie theater, reported a slightly higher tendency to elaborate their feedback, writing on average two more words per comment (9.9 words versus 8.0 words). While this difference is not sharply substantial, it hints at the potential implications of the viewing context on students' engagement and elaboration of their written responses. One possibility is that the viewing experience was more immersive or engaging for the students who saw the films in a traditional movie theater setting. A larger screen, better sound quality, and a more traditional cinema environment may have enhanced the overall viewing experience and led to more emotional and focused responses to the narrative elements by these students. It is

important to note that the content of the comments was equivalent in its categorization, differing only in its complexity/quantity.

The third finding is related to the audiovisual technical aspects perceived during the sessions. This finding indicates that participants in the second group (other personal screens, such as PCs, tablets, or smartphones) placed less importance on screen size and quality compared to those in the first group (movie theaters). This is supported by the scores, which show the second group with slightly lower scores, particularly in the screen size/quality category.

Lastly, the fourth finding of the study emphasizes the importance attributed to image and sound. Participants who watched films in a movie theater were more likely to consider both (images + sound) importance (36.11%). This demonstrates a more immersive audiovisual experience, employing both vision and hearing simultaneously. In contrast, those who used personal screens prioritized images (14.81%) over sound (1.85%). This finding suggests that sound on mobile devices is often left in the background and not given as much importance as visual elements. This trend may reflect the intrinsic characteristics of personal devices, where smaller screens and variable audio quality may diminish the overall impact of sound. Also, in the context of a media-rich environment where students are often surrounded by multiple screens, the tendency to focus more on visual elements may also be indicative of adaptation to contemporary media consumption habits.

### **Limitations**

It is important to highlight some limitations of the study related to the second group of participants who viewed the films on other personal screens such as PCs, tablets, or smartphones. In some cases, the students used the existing resources in the ICT classrooms, and in other cases they used their own personal devices. In this group, it was not possible to obtain concrete information about the equipment used by each student to perceive the sound. As a consequence, the potential influence of external devices, such as headphones or earphones, on the sound quality and immersion of the viewing experience on smaller screens was not controlled. Furthermore, other factors such as resolution, screen brightness, and viewing environment can play a role in the overall viewing experience of films. Unfortunately, it has also not been possible to collect this



information. It can be claimed that the use of headphones inevitably diminishes the overall impact, as students are limited by technical issues and are exposed to external distractions in both visual and auditory aspects, whereas movie theaters provide a more immersive, controlled and targeted viewing experience. These limitations should be considered when interpreting the results. However, despite these limitations, the contribution made is entirely valid given the sample size and the genuineness of the experiment conducted.

### **Conclusion**

The objective of this study, always keeping in mind the educational domain, was to gain a deeper understanding of the impact of screen size on students' perception by addressing the initial research question: Does watching films on personal screens, such as a PC, tablet, or smartphone, result in a less significant impact level?

A major focus of this study was to determine the impact that the environment and the medium in which films are viewed can have on the results obtained for educational purposes, particularly among students aged between 12 and 18. Based on the results achieved (N =324), it can be established that watching films on personal screens may result in a less significant level of impact compared to watching films in a traditional movie theater setting. PCs, tablets or smartphones cannot provide the same level of immersive experience as movie theaters and may lack the social aspect of the traditional cinema space. The disparity between the two groups under analysis was noticeable, as already hypothesized in the literature review. This difference, quantified by a mean of 0.37 on a scale of 0 to 6, underscores the importance of the medium of exhibition in shaping the viewer's experience and its subsequent influence on learning outcomes, particularly for students in an educational context. Additionally, students who experienced the films in a movie theater provided more comprehensive feedback, hinting that the immersive film-watching environment could enhance students' engagement in related post-viewing activities, a crucial aspect in the educational process. This reflects a higher capacity for critical thinking and analysis, since using more words to explain something means a better understanding and the desire to express with more precision and detail the conclusions they have reached. Because they have been able to observe

details more closely and in a more concentrated way, they can better describe their thoughts in words, thus increasing their critical and analytical sense, which is beneficial in pedagogical grounds.

Theater viewers emphasized the combined importance of both image and sound (36.11%), compared to personal screen users who prioritized image (14.81%) over sound (1.85%). This suggests that personal screen characteristics and modern media consumption habits may favor visual over audio elements, which may be valuable insight for educational specialists. While personal screens (PCs, tablets or smartphones) offer convenience and widespread accessibility, they may not engage students to the same extent as a more immersive cinema experience, leading to reduced impact and less elaborate written feedback. Of course, even with its obstacles, the use of personal screens constitutes a viable option when there are no better alternatives or for later views. Particularly in educational settings where access to audiovisual resources might be constrained or limited. When students “see something” they feel interpellated and it is another way for them to think and reflect on what is being presented.

From a pedagogical point of view, the findings of this study emphasize the importance of teachers, educators, trainers, school psychologists, and other educational professionals attempting, whenever possible, to create a movie theater-like atmosphere in a school environment during activities involving film viewing. Adopting this approach can effectively evoke emotions and provide a more impactful experience, while maintaining students' optimal focus on the visual aspects, the auditory aspects, and their combined effects.

Far from being a terminus, this study was conducted with the purpose of promoting future academic research in the extensive interdisciplinary sphere that encompasses the communication and education and sciences.

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