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# Impact of media space design on audience engagement in the digital age: A scoping review

## Impacto del diseño del espacio mediático en la participación de la audiencia en la era digital: estudio de alcance

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**Abstract**

In the digital era, media space is critical for disseminating information and communication. Accordingly, audience interaction largely depends on media design, which affects users' attention and emotional reactions. The study aims to determine how various components of media space (visual elements, interactive features and content adaptability) affect audience interaction with media and to describe how these features can enhance audience engagement. The type of this study is a scoping review. For this purpose, the PRISMA approach was used to collect relevant data, classify it (screening) and further analyse it. The results indicate that effective design can attract attention and retain the audience, stimulating them to interact actively. The impact of interactive design elements

**Resumen**

En la era digital, el espacio mediático es fundamental para la difusión de información y comunicación. En consecuencia, la interacción de la audiencia depende en gran medida del diseño de los medios, que afecta a la atención y las reacciones emocionales de los usuarios. El estudio tiene como objetivo determinar cómo los diversos componentes del espacio mediático (elementos visuales, funciones interactivas y adaptabilidad del contenido) afectan a la interacción de la audiencia con los medios y describir cómo estas funciones pueden mejorar la participación de la audiencia. El tipo de estudio es una revisión de alcance. Para ello, se utilizó el enfoque PRISMA para recopilar datos relevantes, clasificarlos (filtración) y analizarlos en profundidad. Los resultados indican que un diseño eficaz puede atraer la atención y retener a la

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on audience engagement and their interest in participating in content creation is also studied. The study demonstrated that the design of the media space plays a key role in shaping audience engagement, as it allows for the combination of visual hierarchy, intuitive navigation and branding integrity. The integration of adaptive and interactive technologies is important for promoting a dynamic and user-centered experience, which is especially important in today's digital era. The conclusions emphasise the importance of using adaptive and interactive design technologies, which generally increase audience engagement and positively impact the user experience.

**Keywords:** digital age, media, communication, design, interactivity, engagement, information architecture.

audiencia, estimulándola a interactuar activamente. También se estudia el impacto de los elementos de diseño interactivos en la participación de la audiencia y su interés en participar en la creación de contenido. El estudio demostró que el diseño del espacio mediático desempeña un papel clave en la configuración de la participación de la audiencia, ya que permite la combinación de jerarquía visual, navegación intuitiva e integridad de marca. La integración de tecnologías adaptativas e interactivas es importante para promover una experiencia dinámica y centrada en el usuario, lo que es especialmente importante en la era digital actual. Las conclusiones destacan la importancia de utilizar tecnologías de diseño adaptativo e interactivo, que generalmente aumentan la participación de la audiencia e inciden positivamente en la experiencia del usuario.

**Palabras clave:** era digital, medios, comunicación, diseño, interactividad, engagement, arquitectura de la información.

## Introduction

### Importance of media space design

The media space's design, consisting of visual and interactive components, significantly affects the interaction and shapes its perception and engagement. Human interaction with the new phenomenon of information space - media visuals - is usually presented as interaction and communication between a person and the media. It is an essential research object in various sciences: technical, humanitarian, social, etc. In the modern space, which is often oversaturated with media and visual information, it has become essential to study the potential of media communications actively, their impact on humans, as well as the idea of the need for "visual literacy" or media literacy based on a system of adequate media perception and understanding of media visual images (Jiang et al., 2022). The process of human interaction with the media-visual information space is ensured by visual reception as the primary form of this new internal communication.

### Research problem

The research of contemporary scholars indicates that the transformation and development of each culture influence the emergence of a new type of visual perception and evolving vision. Initially, the artistic vision changes, which systematically determines changes in the perception of certain groups and society as a whole (Al-Rahmi et al., 2023). However, the current evolution of perception-seeing is determined by changes in art and by transformation in all subsystems of visual culture - technology, tool design, etc. Accordingly, the post-industrial digital era has influenced the formation of specific, mediated media and the latest technologies (Mills & Brown, 2021). The latter serve as prerequisites for forming a new visual perception of artificial images and visual media texts - visual media perception. Thus, the research problem is how the design of the modern media space, as well as its primary visual and interactive elements, affects the process of audience perception and interaction with information. Therefore, thoughtful design is paramount in the information overload age, where users face vast amounts of content daily. The current media space is not just about transmitting or broadcasting certain information but also shapes the environment in which interaction occurs between the media and the audience. Accordingly, in the context of the rapid development of digital technologies, virtual and augmented reality, the study of media space design is relevant and essential, as it will demonstrate the role of modern technologies and tools in improving user experience and interaction with the audience.

### Objective of the study

Therefore, the study's purpose is to determine the impact of various components of the media space (visual elements, interactive features, and content adaptability) on audience interaction with the media. Thus, this

paper will demonstrate how modern digital tools affect user engagement and their ability to participate actively in the media environment.

The main objectives of the study are as follows:

1. To determine the impact of modern digital technologies on the formation of effective media space design.
2. Describe the main trends in the study of the peculiarities of media space formation.
3. Identify effective technologies that influence audience engagement.

**The structure of the article**

The structure of this study consists of an introduction, which outlines the main research problem and purpose, and a theoretical framework, which describes the theoretical foundations of the study. The study's results consist of an analysis of modern scientific research, which describes the main trends in forming media space design. The discussion compares the data obtained with the results presented in other scientific studies. The conclusions summarise the findings and state the importance of using various digital tools in the media to engage the audience. The conclusions also describe future directions for research.

**Theoretical Framework or Literature Review**

**The impact of trust in the media**

The digital media space plays a crucial role in shaping communication processes and requires interdisciplinary understanding. According to Devterov et al. (2024), digital transformation requires a comprehensive worldview from the standpoint of science, philosophy and culture, including epistemological, axiological, ethical and anthropological justifications, which allows us to assess the impact of interactive design on audience engagement. The transformation of the culture of the media space is greatly influenced by factors such as consumer confidence in the source of information. Traditionally, it was believed that columnists, writers, artists, and journalists performed critical social functions, such as mediating between society and individuals, government and individuals, etc. This delegation gave rise to the notion of the “fourth estate”, which quickly depreciated as the media space developed technologically (Chellig et al., 2024; Granic et al., 2020). The emergence and development of Internet technologies and communication channels have made it possible to create and disseminate digital content, present it on various digital platforms, interact quickly with the interested audience, and make real-time changes and adjustments. Researchers note that a characteristic feature of the former traditional information resources was the presentation of concentrated extracts according to specific unofficially approved stencils. However, this approach has become a thing of the past (Pichkur et al., 2023). In digital media, built-in search algorithms create a new look for information material and its “presentation”. In addition, as presented in several works, many sources of information are being digitised due to global digital changes. Moriuchi (2021) described modern tools for forming innovative social media as essential communication channels. The authors also described the role of social media in intercultural marketing to overcome cultural differences

**Visual elements and interactivity**

The current scientific literature indicates that visual elements are important for the formation of modern interactive media discourse. However, there is a certain debate in modern academic circles. In particular, some authors point out that visualisation is important in the modern digital space because the audience pays attention to this content. Other scholars point out that it is important not to oversaturate information with visuals, as this affects the quality of the information presented (Moore, 2022; Zhang et al., 2022). Contemporary scholars have also described immersive virtual technologies for news delivery. Wu et al., (2021) also analysed users' experiences in using different media effects. Yang (2021) identified vital innovations to enable visual communication based on the potential of digital media. Ye and Li (2022) described the features of digital media art based on augmented and virtual reality. Liu et al. (2024) investigated the user interface transformation based on the introduction of artificial intelligence in interactive media design. Zhang et al. (2022) described visual communication design in the environment of the modern media space. At the same time, Zheng and Yan (2022) analysed the key features of the use of visual technologies and digital images in contemporary media discourse. The digital transformation has

reached a significant scale and requires a comprehensive worldview from the standpoint of science, philosophy and culture, including epistemological, axiological, ethical and anthropological justifications (Devterov et al., 2024, p. 16). Wu et al. (2021) described immersive virtual technologies for news delivery. The authors also analysed the user experience in using different media effects. Although these studies focus on using various modern technologies, their approaches to studying the problem and attitudes towards modern technological innovations differ. While most studies highlight the positive impact of technology, some studies show researchers' concerns about over-analysing personal data for content creation (Ye & Li, 2022; Moriuchi, 2021). In addition, current research needs to explore the role of visual aspects in modern digital media discourse.

**Adaptability and automation**

Modern scientific literature presents various digital tools used to develop media space design. Parker and Grote (2020) identified the importance of implementing algorithms and automation for practical design. These authors proved that automation and the use of algorithms are essential strategies in the modern media space. Algorithms allow media platforms to optimise the way content looks on different devices. New directions based on the use of AI and adaptive design technologies have significantly influenced approaches to the design of media space, and their active use has changed the understanding of the interaction between the user and media content. Prieto et al. (2022) identified the importance of using a simple interface in modern media. In addition, these authors also described the importance of implementing mixed reality interfaces on youth media platforms. However, there is also a debate in academic circles about the introduction of automation. Some scholars consider this tool to be important, while others point out that it has a negative impact on the quality of information. Accordingly, this aspect should be studied more.

Thus, modern scholars have characterised various technologies to ensure effective visualisation of media resources, but there are not many systematic reviews to date. Despite significant progress in studying the impact of media space design on audience interaction, significant issues still need to be solved or further research. In particular, based on the analysis of current works, the problem of using visual hierarchy and its impact on the perception of information in the digital media environment needs to be sufficiently studied. Another important aspect is the study of the role of algorithmic recommendations. Even though the personalisation of content using algorithms has been used for a long time, this problem still needs to be fully covered in the scientific literature and requires a deeper analysis. It is essential to determine the impact of algorithmic recommendations on user engagement. This study will address these gaps. Therefore, this paper will conduct a comprehensive systematic analysis of current scientific works and analyse the impact of visualisation and algorithmic recommendations on the formation of active interaction.

**Methodology**

**Research Design**

This paper is a qualitative study. This study is based on selecting modern scientific sources and their systematic analysis. The approach to the selection of sources was based on several important aspects. Scientific credibility (peer-reviewed works were prioritised), relevance (studies published within the last 4 years), thematic relevance (sources were selected based on content analysis), and geographical diversity (works by the authors were used for the analysis) were taken into account. This approach made it possible to form a professional, balanced sample of scientific materials that are representative and relevant to the research topic.

**Materials and Equipment**

The sample of this study included different types of scientific materials: monographs, book chapters, scientific articles, and conference materials. The study has no geographical focus, i.e., articles by authors from different regions were included. However, the main focus is on analysing exclusively English-language professional literature. This is done from the point of view that English is the primary language used in scientific publications in many international journals. Accordingly, this makes it an essential source of the most relevant works. A date range has been outlined for selecting sources: from 2020 to 2024. This was done to include relevant and up-to-date scientific literature on the selected topic. The criteria for including the literature were based on the analysis of such aspects as the language of writing (English),

content relevance to the topic, and the presence of a clearly stated research methodology. Both theoretical and empirical works were analysed.

**Procedures**

Data collection was carried out in stages using the Prisma approach. This scientific approach was chosen to screen the sources for this scoping review because it ensures a structured and transparent literature selection process. By adapting the Prisma method to the scoping review, the approach was used without a detailed assessment of the risk of bias, which is a necessary part of systematic reviews. Instead, the focus is on the stages of searching, selecting and analysing the selected materials.

Hence, the PRISMA is particularly suitable for a scoping review as it ensures a rigorous and transparent process in identifying and selecting literature.

First, the scientometric databases were selected to search the scientific literature. Google Scholar, Web of Science, and Open Alex were chosen for this study. The keywords used were media space, design, technology, interaction, audience, impact, results, ICT technologies, and visual communication, and they were entered into the above search databases. A total of 1100 results were obtained. The first stage of screening and identification involved the rejection of all duplicates (-159). After that, we analysed the titles and rejected those articles that did not correspond to the chosen research topic (-389). In this way, 552 results were obtained. Next, we analysed the keywords and abstracts and rejected those not responding to the study (-311).

This resulted in 241 sources that were subjected to the next stage of screening and included based on the following criteria:

1. The study focuses on the peculiarities of forming the modern media space with the involvement of various innovative technologies.
2. The study describes the collection tools (questionnaires, surveys, interviews, PRISMA) and data analysis methods (systematic review, comparative analysis, coding, transcription, etc.).
3. The paper includes research written in any language, provided it was valuable to the study and accompanied by an English-language summary.

Figure 1 shows the main stages of collection, identification and screening of found materials.

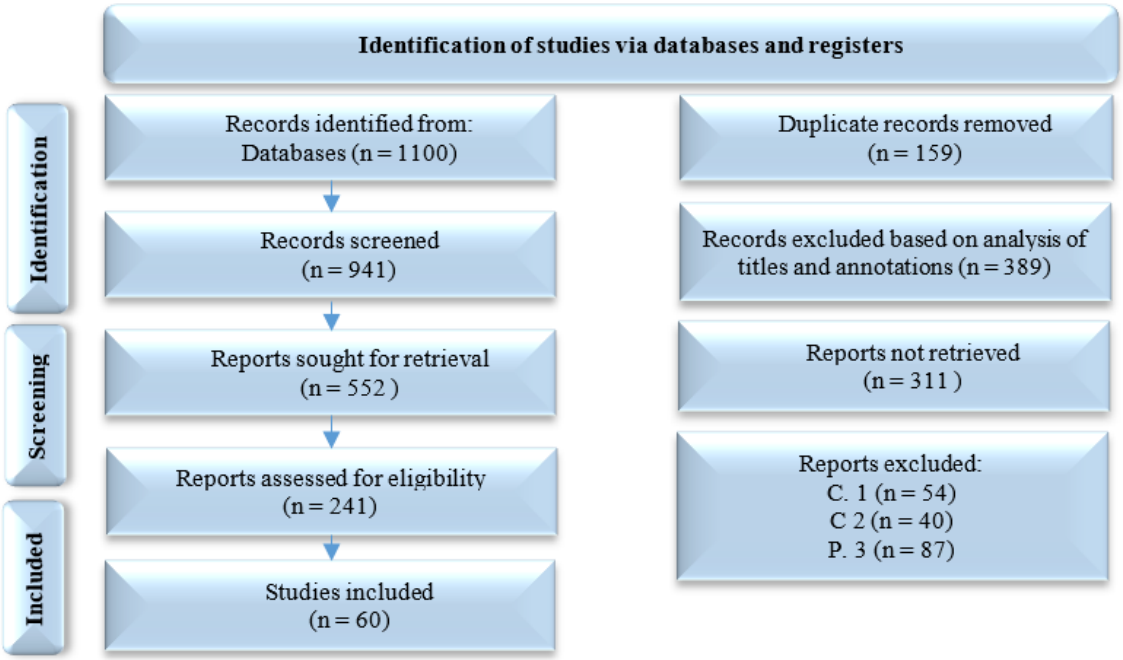


***Figure 1.*** Identifying materials using the PRISMA approach.
Source: compiled by the authors

In this way, 60 items of scientific literature were selected for further systematic analysis.

**Data Analysis**

Qualitative analysis was used to process the data. In particular, Excel software was used for this purpose. Data such as the author, year of publication, technologies of media space formation, and conclusions were entered into specially created tables. This made it possible to codify the data in the necessary areas. This was done with the help of software. Excel was used for the primary codification and organisation of data. Excel made it possible to systematically record the key parameters of each source by such indicators as title, author, year of publication, and source type. The work's subject matter was also considered in the following categories: aspects of media design, trends, and impact on engagement. As a result, using Excel has become convenient for sorting and filtering sources.

VOSviewer was also used to analyse the data, as this tool provides visual diagrams that facilitate data interpretation. Thus, VosViewer was important for identifying the main categories and trends found in the selected scientific literature. This software was used to count the number of scientific papers on media design in 2014-2024 (according to the OpenAlex system). This made it possible to understand which design aspects have remained at the forefront of scientific research over the past 10 years and how they relate to other aspects of the media space (Appendix 1-2). Based on a comparative analysis, the results are compared with the works of other contemporary scholars. The results were compared by topic: conclusions on the effectiveness of using appropriate visualisation, algorithmic solutions, virtual reality or adaptive design were compared.

**Results and Discussion**

The emergence and spread of Internet technologies and communication channels (social networks, websites, various media resources) made it possible to create and distribute content of our production, to present it on various digital platforms, to interact quickly with the interested audience, and to make changes and corrections in real time. A feature of the former traditional information resources was the presentation of concentrated extracts according to certain unofficially approved stencils. This approach is gradually becoming a thing of the past, as the use of viral content in combination with built-in search algorithms on Internet sites creates a new type of information material and its "presentation". In addition, due to global transformations and the pervasive impact of digitalisation, many sources of information are being transformed into digital form, which implies its laws of interaction. In recent years, scholars' interest in studying the problem of forming an effective media space has increased significantly. As a result, new directions have influenced approaches to media space design, albeit in terms of personalisation, interface and usability. Their introduction and subsequent active use transformed the understanding of the interaction between the user and media content and the approach to design development and testing. In particular, based on the analysis of the OpenAlex platform, over the past 10 years, there has been a noticeable trend towards an increase in the number of scientific papers devoted to creating an effective media space (see Table 1).

**Table 1.**
*Number of scientific papers on the formation of effective media space design*

| Publication Year | N |
|---|---|
| 2024 | 2522 |
| 2023 | 6936 |
| 2022 | 4774 |
| 2021 | 3849 |
| 2020 | 2999 |
| 2019 | 3169 |
| 2018 | 3008 |
| 2017 | 2644 |
| 2016 | 2445 |
| 2015 | 2090 |
| 2014 | 1823 |

Source: compiled by the authors

The most popular topics are the impact of digital media on public opinion (1889 results), the impact of social media, media framing and agenda in communication, the impact of creative industries, user experience and design research, the spread of disinformation online, innovations in design and visual communication technologies, the impact of social media on well-being and behaviour, virtual presence and embodiment in VR research, crisis communication and the use of social media, and others (see Figure 1).

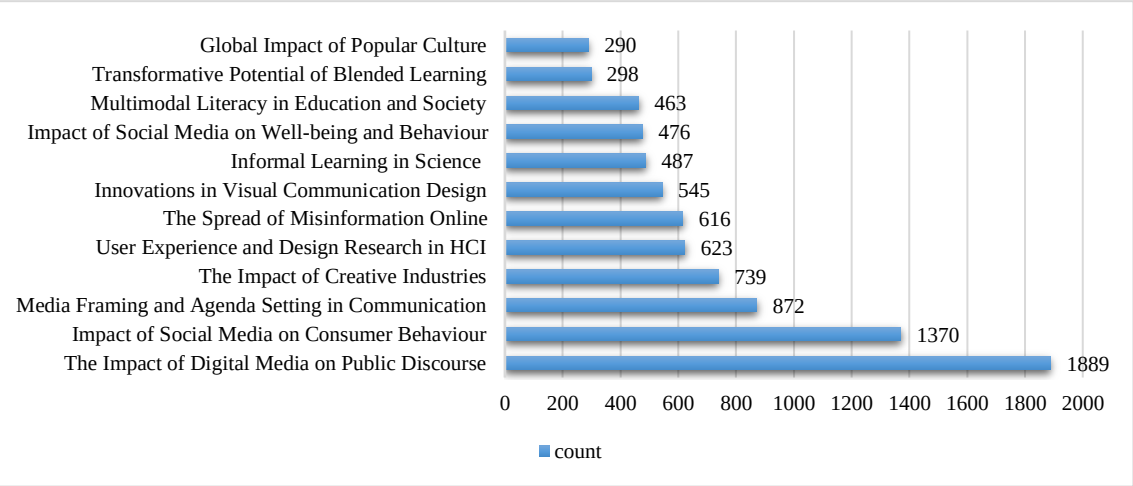


***Figure 1.*** Key topics in the media design research.
Source: compiled by the authors

Figure 1 does not include research areas with less than 250 papers. Researchers have noted various aspects of the impact of media space design on audience interaction in the digital age in the 2018-2020 timeframe. The focus was on computer science, artificial intelligence, programming, engineering, computer security, etc. Another block has a distinct public focus: political sciences, law, public administration, politics, diplomacy. The third block is less popular: physics, bubbles (as a social phenomenon), human-computer relations, art and its various branches. The fourth block covers business, mathematics, geometry, marketing, and other management and calculation categories. Establishing such relationships indicates the paradigms in which the problem of design's influence on audience activity in the digital space was understood (see Figure 1).

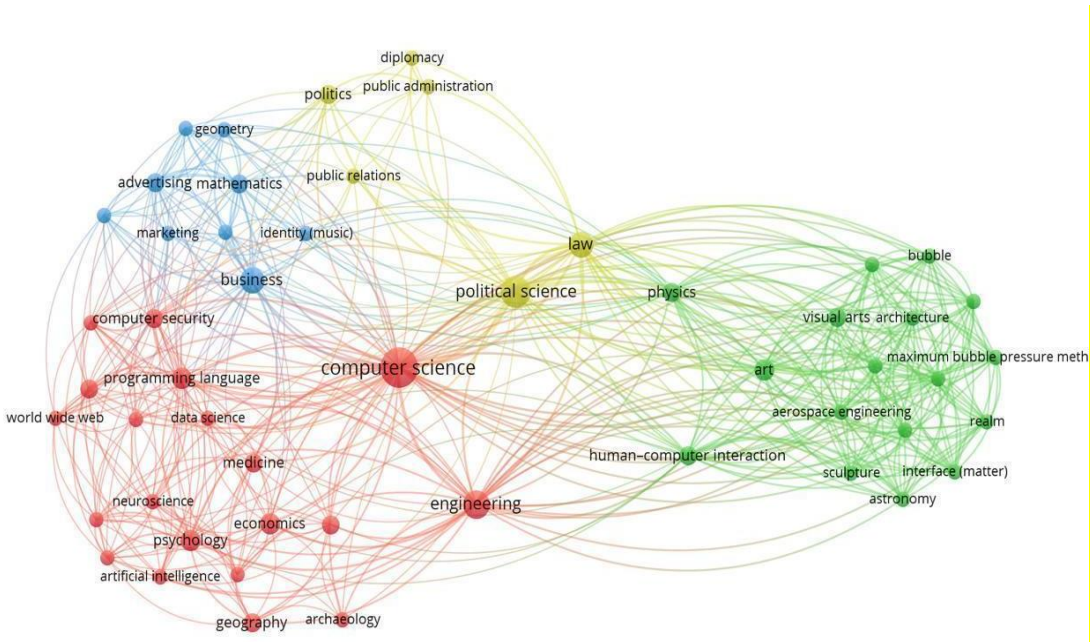


***Figure 1.*** Areas of media research in 2018-2020 (according to the OpenAlex system)
Source: author's development.

This makes it possible to further identify changes in perceptions of the role of design. At the same time, the COVID-19 pandemic has impacted the use of digital technologies, which have become much more accessible and adaptable. The rapid digitalisation caused by the global pandemic has also affected how information is presented, as the number of platforms has increased significantly and they have begun competing. In modern media practice, there is a constant search for new formats of interaction with the audience and its interest, as well as updating content platforms. Such actions aim to retain the target audience of consumers on all possible digital platforms. Given that the sources of content have expanded significantly, researchers note the active development of visual support, which is aimed at creating a new integrated resource for the media culture of the future. The modern experience of using media is associated with screen culture, allowing new audiovisual images to form. As a result, today we are already talking about the integration of screen images into everyday life, which even indicates its dominance in real life, compared to the information that comes to us from other sources. In such circumstances, the design of media space impacts interaction with the audience, given the development of the digital age. The most recent data on the analysis of research interests indicate that media space design and its impact on audience interaction have undergone certain transformations. In particular, the four blocks established earlier have changed. Researchers still associate the field of media space design with computer science. However, this vector has become more clearly combined with the categories of mathematics and management, geometry, marketing, computer training and security, programming languages, etc. This evolution can be explained by further developing digitalisation provision, including computer knowledge (Kichurchak, 2023). Research ties with the fields of physics, computer-human relations, art, architecture, social bubbles, etc. have strengthened. At the same time, ties with the classical sciences (medicine, economics, geography, etc.), law, politics, and diplomacy have weakened significantly (see Figure 2).

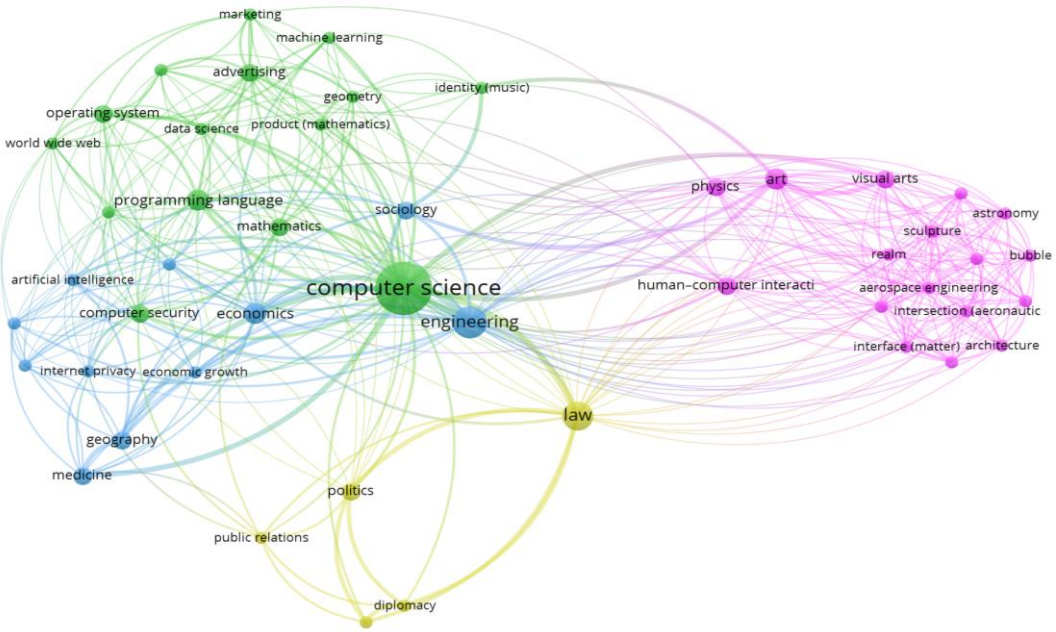


***Figure 2.*** Areas of media research in 2021-2024 (according to the OpenAlex system)
Source: author's development

This suggests that the evolution of media design analysis will continue to be driven by engineering, computer science, and the interaction between humans and digital technologies.

If we consider only the area of media space design and the use of innovative technologies for the media space in 2020-2024, we see a smaller number of works (488 items). In addition, there is a noticeable trend towards an increase in the popularity of this topic in recent years (see Figure 2).

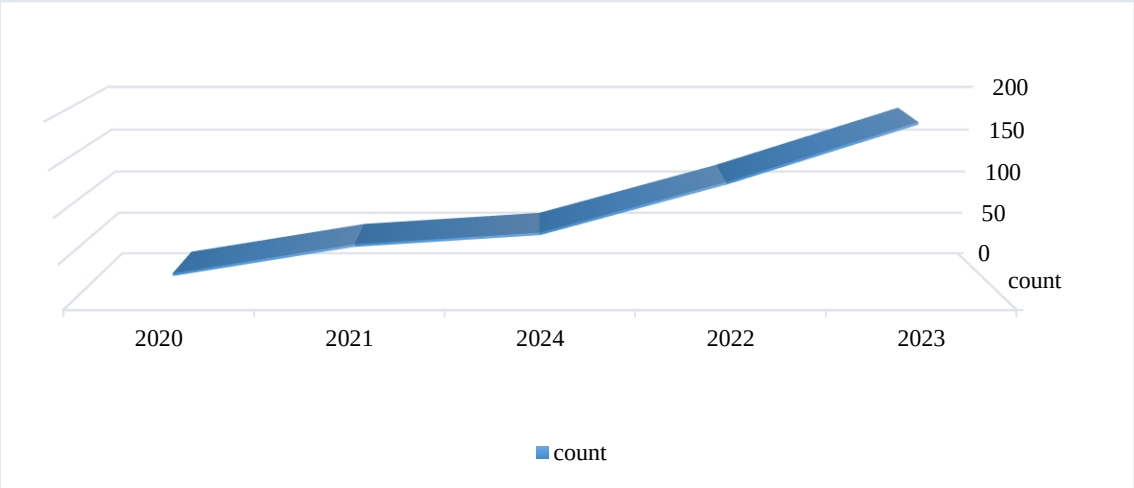


***Figure 2.*** The dynamics of the appearance of scientific works on media design over the past 4 years. Source: compiled by the authors.

Researchers note the interactivity of the modern media space as an important tool for working with information, which has a positive impact on attracting a new audience of users, perceiving content and interacting with the source of information. Design, as part of interactivity, affects behaviour and social communication with users. One of the most important elements of design influence is external aesthetics, which is especially valuable when combined with usability. First of all, such visual elements as the choice of colours and fonts and the arrangement of elements on the monitor or display screen form a positive appeal that creates the appropriate mood (emotional state). In such circumstances, simple, modern interfaces that are intuitive and easy to understand significantly increase the time users spend on the platform and create the preconditions for further frequent interaction with media content. This approach is actively used in the social media sphere: X (formerly Twitter) or TikTok was created to distribute visual content that is aesthetically pleasing and easy to navigate. Interactivity tools also play a role (Wagner, 2022). Meta's products (Facebook or Instagram) allow you to comment, like, conduct polls, interact with the audience, and shoot and share short videos. In fact, it's not just about consuming information but also about actively creating it. Additionally, interactive design creates opportunities to turn a passive consumer into an active user who knows that he or she belongs to a community of other users.

Personalisation of the media space also implies the development of specific design requirements. Algorithms that select content based on preferences and general user behaviour create the effect of deeper immersion of the target audience in the established thematic niches. Responsive design allows media platforms to optimise the way content looks on different devices. The use of this technology allows for continuous and convenient access to information. New trends (AI and responsive design) have had a significant impact on approaches to media space design. Their active use has changed the understanding of the interaction between the user and media content. For example, accessibility has increased as responsive design has made content available on different devices with a focus on mobility. At the same time, the impact of artificial intelligence is based on content personalisation, which allows modern platforms to track and analyse user behaviour. This approach not only makes the user experience more convenient but also contributes to a greater audience reach, as modern studios have proven that responsive design makes users feel comfortable and accessible. However, it is also worth considering the technology of simple and logical UX. For this reason, easy navigation, clear content, and easy access to the necessary content contribute to creating a positive experience. Table 2 summarises the main technologies used in the digital age that can improve the interaction between media and audiences.

**Table 2.**
*The main technologies used in media in the digital age*

| Technology | Brief description | Authors |
|---|---|---|
| External aesthetics Relevant and appropriate visualisation | High-quality visuals complement the text. Information becomes more understandable and visual. | Alonso Dos Santos et al. (2017)<br>Khan et al. (2022)<br>Kumar et al. (2020)<br>Rodríguez-Vázquez et al. (2022)<br>Sunarso et al. (2023) |
| Algorithmic technologies | Algorithms help to create individualised recommendations that increase the relevance of content | Ausat (2023)<br>Rodríguez-Vázquez et al. (2022)<br>Satterfield, & Abel (2020)<br>Shirokova et al. (2023) |
| The current colour scheme | It plays an important role for a pleasant visual impression | Alonso Dos Santos et al. (2017)<br>Kumar et al. (2020)<br>Ma et al. (2021)<br>Recker et al. (2020)<br>Rodríguez-Vázquez et al. (2022) |
| Responsive design | Media platforms can optimise the way content looks on different devices | Bartschat et al. (2022)<br>Jiang et al. (2022)<br>Kumar et al. (2020)<br>Li & Huang (2022)<br>Mao & Jiang (2021)<br>Rodríguez-Vázquez et al. (2022)<br>Satterfield, & Abel (2020) |
| Interactive forms of interaction | Stimulate user engagement and increase audience loyalty. | Bartschat et al. (2022)<br>Borysov et al. (2022)<br>Byrko et al. (2021)<br>(Corrales Compagnucci et al., 2021)<br>García-Perdomo (2021)<br>Hassan et al. (2024)<br>Jiang et al. (2022)<br>Leow & Ch'ng (2021) |
| Simple and logical UX | Easy navigation and easy access to the right content contribute to a positive experience | Greenhow & Chapman (2020)<br>Hassan et al. (2024)<br>Kumar et al. (2020)<br>Macdonald (2021)<br>Rodríguez-Vázquez et al. (2022) |
| Virtual reality | It allows you to analyse different objects, view them from different angles and interact with them. | Arrighi et al. (2021)<br>Bangsa et al. (2022)<br>Behl et al. (2023)<br>Devadze & Gechbaia (2024)<br>Kumar et al. (2020)<br>Li & Huang (2022)<br>Li et al. (2020) |
| Use of modern artificial intelligence technologies | It improves both visual and functional interaction. It creates personalised recommendations and allows you to analyse user reactions. Virtual assistants can support interaction | Bag et al. (2021)<br>Greenhow & Chapman (2020)<br>González-Mena et al. (2022)<br>(Hedrick et al., 2022)<br>Kumar et al. (2020)<br>Li & Huang (2022)<br>Li et al. (2024)<br>Mao & Jiang (2021)<br>Rodríguez-Vázquez et al. (2022)<br>Satterfield, & Abel (2020) |

Source: compiled by the authors

In addition, some researchers have emphasised the relevance of challenges in the ethical design of media platforms. The ethical aspect is essential because certain aspects of this phenomenon in the media space are the responsibility of designers, which directly affects the audience. The use of interfaces with notification elements that encourage users to interact with content and be present online continuously is dangerous due

to the potential for addiction. Thus, ethical digital design requires considering several requirements, including maintaining a balance between active interaction and ensuring that users have healthy contact with the content that does not lead to psychological discomfort or disorders.

Given the research problem, namely, determining the impact of media space design on audience interaction in the digital era, it is indicated that digital technologies, algorithmic recommendations, artificial intelligence, etc., have significantly influenced the functioning and development of media space. It is indicated that the transformation of the culture of the media space is greatly influenced by such a factor as consumer confidence in the source of information, and, accordingly, in modern media discourse, the source should have both visual appeal and high-quality textual material. These opinions correlate with the results of other scholars who have substantiated the importance of the external side (appropriate aesthetic environment, algorithmic recommendations, interactive forms of interaction) (Jin & Liu, 2022; Mariani & Fosso Wamba, 2020; Levin & Mamlok, 2021).

The study also quantifies the importance of this topic in the works of the last 10 years. The results demonstrate that scholars' interest in studying the problem of creating an effective media space has increased significantly in recent years. There is a noticeable trend towards an increase in the number of scientific papers devoted to creating an effective media space. The relevance of this topic is also indicated by the results of other scholars who discuss general trends in forming an effective media space (Vasudevan, 2020; Steenkamp, 2020). The article finds that popular topics include the impact of digital media on public opinion, the role of social media, media framing and agenda in communication, the impact of creative industries, user experience and design research, the spread of disinformation on the Internet, innovations in design and visual communication technologies, the impact of social media on well-being and behaviour, virtual presence and implementation in VR research, crisis communication and the use of social media, and others. These topics are popular in scientific research, as evidenced by the works of contemporary authors (Ye & Li, 2022; Larson & DeChurch, 2020; Sunarso et al., 2023).

An essential task of this study was to identify the leading effective technologies that help improve the interaction between the media and the audience. It was found that such means are visual aesthetics, which should be of high quality and visually appropriate. These thoughts are confirmed in other contemporary studies. According to Vasudevan (2020) and Wu et al. (2021), an important aspect that affects user interaction with the digital media space is visual hierarchy, which allows you to arrange elements on the screen in such a way as to draw attention to the most critical content. This helps the audience find the information they need quickly. Using techniques such as size, contrast, positioning, and colour, designers can create hierarchical relationships that guide the user through the content. Large headlines or bold accents can grab attention in the first place, after which the eye naturally follows the structure of the text and images (Turner et al., 2019). However, appropriate visualisation is also essential, as evidenced by many scientific studies. High-quality visualisation represented by graphs, images, videos and other materials complements the text. However, it should be relevant to the content to avoid creating misinformation. In this aspect, an important role is played by the relevant colour scheme, which contributes to the creation of a pleasant visual impression on the formation of the media platform's brand (Ye & Li, 2022; Larson & DeChurch, 2020).

The latter affects the emotional perception, engagement, and duration of interaction with the content. Other critical technologies are algorithmic recommendations, algorithmic technologies, and simple and logical UX. These opinions are also correlated with other works. According to Satterfield and Abel (2020), algorithmic recommendations are also influential in shaping media space design. Comparing the data obtained with the results of other researchers, there is a tendency to identify artificial intelligence, adaptive design, algorithms, and visuals as essential technologies for the formation of effective media space design (Larson & DeChurch, 2020; Jiang et al., 2022; Satterfield & Abel, 2020). Although this technology is recognised as relevant, its use has some challenges. First, personalised algorithms can lead to information bubbles, in which users interact almost exclusively with the thematic blocks limited by the algorithms.

Current research discusses that, in the long run, this may distort the perception of the world around us, as consumers may not receive alternative information (Jiang et al., 2022). However, this study also indicates that using these technologies (adaptive design, artificial intelligence, virtual reality, interactive and adaptive design) leads to certain changes in approaches to media space design. This aspect was emphasised more by other authors who pointed to the emergence of a massive integration of the data-driven approach. The design process has become more focused on data analysis (Ausat, 2023; Li et al., 2020). As a result, modern designers work much more closely with specialists in other fields (analysts) to study and understand those

interface components that effectively promote user engagement. This, in turn, allows interaction to be optimised based on real data. The study identifies the impact of the above technologies on user experience (UX) and real-time testing. The findings also correlate with other studies that have shown that the impact of AI on UX has led to the increased use of A/B testing to characterise the optimal arrangement of elements and their sequence based on the analysis of modern user behaviour (Granic et al., 2020). This allows you to customise the design according to changing preferences and quickly test which elements contribute most to user engagement. The article also points out the importance of using virtual reality and artificial intelligence technologies. The potential of these technologies is also pointed out by many modern scholars who identify both their strengths and weaknesses (Wu et al., 2021; Vainola, 2024). Thus, the theoretical value of this study is to prove that the design of media space is an important factor in shaping interaction with target audiences in social contact formation, which is especially important in the new digital era. This is due to the tools of external attractiveness, the ability to interact with information sources, personalisation and consideration of the ethical dimensions of interaction between people and the digital environment. These key factors create the preconditions for the success of various media platforms. The practical value of the work is that it can serve as an important basis for further research, in particular, conducting an empirical study to determine the most potential integrated and adaptive design for the digital media space. The main limitation of this study is the selection of only contemporary literature. In this way, the authors may have missed other important studies from previous years. Focusing on contemporary literature also limits this work to the context of the latest methods of media space design. Although this allows for an informative picture of current trends in media design, the paper may be limited in considering the evolution of approaches to creating effective design environments. At the same time, this limitation also makes it difficult to analyse the long-term results of introducing new technologies. Another important limitation is the choice of English-language literature. Accordingly, the study does not include works by authors of foreign languages. Digital technologies are used to form high-quality media discourse. This limitation contributes to the objectification of data analysis in the context of various cultural and regional peculiarities of perception of media design, which can be studied in scientific literature written in other languages. All of these limitations affect the results obtained, however, they do not diminish the value of this study.

## Conclusions

Thus, scholars' interest in analysing the problem of creating an adequate media space using modern digital technologies has increased significantly in recent years. In particular, based on the analysis of the last 10 years, the dynamics of increasing the number of scientific works devoted to creating an effective media space system is noticeable. It is established that in modern media practice, there is a systematic process of searching for and developing new interaction formats with the audience and its interests. The use of digital elements has led to the expansion of the audience, for whom the visual design of the material has become as important as the content itself. The continued growth of the audience has raised the issue of competition, which affects more than the quantity of information messages as the quality, including the quality of design. As a result, more attractive visualisation helps to expand the range of users.

The contemporary experience of using media is associated with the so-called screen culture, which influences the creation of new audiovisual images. The formation of screen culture - the culture of consuming visual images from the screen of mobile gadgets - plays a unique role in this process. First, it is about creating an interactive environment that allows you to interact with visual content. Virtual and augmented reality tools are also necessary to attract users with new forms of interactivity. Thus, the design of the media space has an impact on audience interaction. The study identifies the main tools used in design that affect audience engagement: external aesthetics, appropriate and relevant visualisation, hierarchical visualisation, algorithmic technologies, relevant colour scheme, adaptive design, interactive forms of interaction, simple and logical UX, virtual reality and artificial intelligence. Their integrated use is aimed at an important goal - optimising user engagement. The study underscores the novel and transformative role of screen culture, characterized by the increasing dominance of visual consumption through mobile gadgets, in redefining media space design. It highlights the unique contribution of interactive environments, including virtual and augmented reality, in elevating audience engagement.

The study identified an important gap in the current body of literature: the lack of comparative assessments of the impact of different design approaches on audience engagement. This study provides an important foundation to fill this gap and is the basis for further empirical research that assesses the impact of technologies (such as artificial intelligence and interactive visualization) in a variety of media environments.

This study also opens up new areas for analysis. In the following studies, the authors will select one or more technologies and conduct a comparative analysis in the context of the effectiveness of audience engagement. The aim is to form an empirical basis for the study, allowing us to determine the importance of some aspects of user engagement using specific examples. Interactive interaction and artificial intelligence are effective when working on social media, which involves communication that automatic artificial intelligence algorithms can control. At the same time, working with other digital information sources will require an emphasis on simple and functional design, appropriate visualisation, and simple and logical UX, as user experience indicates a need to reduce visual noise.

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