

## Exploring Media and Communication Students' Perception of Egyptian Universities' Use of Augmented Reality in Learning

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Received: March 29, 2023

Accepted: May 5, 2023

Online Published: May 8, 2023

doi:10.11114/smc.v11i4.6121

URL: <https://doi.org/10.11114/smc.v11i4.6121>

### Abstract

The aim of this study was to investigate the perceptions of media students in Egypt universities about using augmented reality (AR) technology in learning. To achieve this, the study adopted Technology Acceptance Model (TAM) and utilized a survey questionnaire to collect data from students in seven universities across Egypt. The findings revealed that (i) the students had a positive perception about using AR in media and communication learning; (ii) many media students in Egypt were not fully aware of the various AR technology applications in media and communication education; (iii) the students identified several negative factors that may hinder their acceptance of AR technology as an instructional tool, such as poor connectivity, lack of free AR programs, and lack of training programs. Addressing these barriers could help promote the adoption of AR technology in media and communication learning among students in Egypt. The significance of the study lies in that it sheds light on the need for increased awareness and education of the potential benefits of using AR technology in media and communication learning.

**Key words:** augmented reality, higher education, students' perception, Egypt, TAM model

### 1. Introduction

Over the past decade, augmented reality (AR) has gained significant attention as a promising field for technological advancement, with various innovative applications that have elevated its importance in everyday life (Godoy Jr., 2020). Its growth has also impacted the higher education sector, introducing novel means of disseminating information and creating new structures for learning and knowledge acquisition (Karakus, 2019). Recently, digital initiatives focusing on the use of new technologies, such as AR and virtual reality (VR), have emerged in Egyptian universities, which is seen as a response to the conditions of the labor market, preparing students for self-paced and enduring learning while refining the cost-effectiveness of higher education (Alsayyar & Almakki, 2021; Kamel, 2021).

Despite these developments, Heikal (2021) argues that the implementation of AR applications in educational curriculums in Egyptian universities, especially in media and communication programs, is still limited. Most social science departments continue to use traditional ways of presenting courses to their students. Therefore, there is a need for further research to explore the benefits of using AR applications in media education (Fazari, 2020; Kamel, 2021). This will pave the way for developing media and communication programs in the near future by promoting AR applications as a powerful learning method.

AR is the process of integrating digital information elements that contain video images of a real-time environment of a user (Xiong et al., 2021). According to Mulbar et al. (2021), the integration of visual elements in a digital environment involves the identification of an object that is replicated from physical world features and captured in any format of visual moving picture. To achieve this, AR requires a medium such as a smartphone camera or a smart device of the user's choice to display the digital information, which can take diverse forms (Toledo-Morales & Sanchez-Garcia, 2018). AR technology employs 3D virtual elements to overlay objects in real environments and generate a mixed reality

that enhances users' experiences by coexisting in a meaningful way with real objects.

### **Problem Statement**

Despite AR technology being recognized as an area with promising potential, there is a research gap in understanding how AR applications can benefit media education, specifically in the context of Egyptian universities. Although digital initiatives have emerged in higher education in Egypt, including AR and VR technologies, these technologies have not been integrated into educational curriculums, and most social science departments still rely on traditional teaching methods. Therefore, it is necessary to conduct further research to understand the factors that affect the acceptance of AR technology in media programs and to explore students' perceptions of AR in media courses. This study seeks to address this research gap by utilizing the Technology Acceptance Model (TAM) to investigate how students perceive the adoption of AR applications for learning purposes in their media and communication courses.

To the best of our knowledge, no previous research has been conducted on this specific topic. As a result, the findings of this paper could prove useful to educators and education policymakers who are interested in incorporating augmented reality into media programs. They could utilize this information to increase the adoption of this method in media departments across Egypt or to explore ways to encourage educators and students to use augmented reality and its applications in their university activities. To achieve this goal, the current study employed Davis's (1989) Technology Acceptance Model (TAM) as a foundational framework to investigate students' intentions and willingness to use AR. Notwithstanding, Al-Rasheedy and Elqot (2022) and Mogheith et al. (2019) contend that there is a dearth of research exploring students' perceptions of AR technology usage in higher education across the Arab region.

### **Research Purpose and Questions**

This study seeks to explore how students in media programs perceive the use of AR technology in their learning. To achieve this goal, the authors employ the Technology Acceptance Model (TAM) to determine how students are using AR applications as a learning tool in their media classes. Additionally, the paper aims to identify the factors that influence students' acceptance of using AR technology in media at universities in Egypt.

This study seeks to address the following five research questions:

1. What are the technical factors that motivate media students in Egyptian universities to adopt AR in learning?
2. To what extent do media students in Egyptian universities currently use AR in their coursework?
3. What are the key factors that influence media students' acceptance of AR as an educational tool?
4. How do media students in Egyptian universities perceive the role of AR in the field of media?
5. What are the perceptions of media students in Egyptian universities regarding the use of AR technology in their coursework?

## **2. Literature Review**

### ***Augmented reality in higher education***

Numerous studies (Akçayır & Akçayır, 2017; Alsayyar & Almakki, 2021; Babkin et al., 2021; Bicen & Demir, 2020; Godoy Jr., 2020; Gurevych et al., 2021; Jumani et al., 2022; Mulbar et al., 2021; Videnov et al., 2018; Yuniarto et al., 2018) have delved into the use of augmented reality (AR) in higher education. These studies aimed to explore how AR can provide a more intuitive approach to learning. In their efforts to integrate AR applications in the classroom, these studies have combined AR with other interactive digital methods, recognizing the unique learning experience that AR applications offer and considering them an effective teaching and learning method.

Numerous studies (Akçayır & Akçayır, 2017; Ardhani et al., 2022; Garzón, 2021; Ghobadi et al., 2022; Godoy Jr., 2020; Jumani et al., 2022; Khowaja et al., 2019; Marín Díaz, 2017; Mulbar et al., 2021; Palmarini et al., 2018; Sáez-López et al., 2020) have examined the incorporation of AR applications in university classrooms, spanning across various disciplines. These studies found that AR technology can enhance the learning outcomes of higher education students through interaction, information acquisition, and visualization. By allowing virtual elements to coexist in the same space, AR enables real-time interaction with these elements. This enables students to perceive information in an accessible and immediate manner by displaying multimedia or text that corresponds to objects or locations. Furthermore, according to Akçayır & Akçayır (2017), AR applications in classrooms facilitate students' participation in semi-realistic world explorations.

Some researchers (Alsayyar & Almakki, 2021; Aqel & Azzam, 2018; Fazari, 2020; Mogheith et al., 2019; Mousa et al., 2020; Ragheb et al., 2022) have observed that educators in Arab universities are actively exploring novel digital techniques for teaching with the goal of maximizing student engagement in the learning process. Several researchers (Alam et al., 2021; Babkin et al., 2021; Haleem et al., 2022; Garzón, 2021; Ragheb et al., 2022) have discussed various

factors that can impact the adoption and use of AR technology in higher education. Haleem et al. (2022) indicate that usage of smart devices or internet-connected gadgets such as smartphones, laptops, and tablets “has been a significant element in the ease of access and faster uptake of digital learning” (p. 277). Meanwhile, Garzón (2021) highlights the importance of user experience with AR technology, as difficult-to-use or poorly designed AR systems may discourage people from using them. Babkin et al. (2021) further argue that perceived usefulness of AR technology is a critical factor in its acceptance and adoption, as users are more likely to engage with technology that helps them achieve their goals and is easy to use. While user acceptance is crucial for successfully integrating new technologies like AR in higher education, Cabero-Almenara et al. (2019) and Babkin et al. (2021) stress that it is particularly important in educational settings.

Different barriers or challenges have been found to affect the acceptance and implementation of AR in educational settings. One of the most significant barriers is technical problems such as poor Internet connection (Akçayır & Akçayır, 2017; Alzahrani, 2020). Other challenges include lack of training for using or dealing with this kind of advanced technology (Akçayır & Akçayır, 2017; Alkhatabi, 2017; Mitchell, 2011; Toledo-Morales & Sanchez-Garcia, 2018), lack of AR programs to use in teaching-learning (Tobar-Muñoz et al., 2017) and lack of practical opportunities in education (Lu & Liu, 2015). Despite these challenges, Jumani et al. (2022), Mogheith et al. (2019), and Dalim et al. (2017) suggest that educational organizations can increase the likelihood of successful adoption and use of AR technology by considering these factors.

### ***AR in the higher education sector in Egypt***

The higher education sector in Egypt has undergone significant transformations in recent years (Karakus, 2020), with a rapid increase in the number of institutions that exhibit substantial variation in their regulations, missions, and practices. One of the most notable developments in higher education institutions (HEIs) throughout Egypt presently is their intention to embrace new technologies (Kamel, 2021; Mogheith et al., 2019). Additionally, Azmy (2017) suggests that incorporating AR technology into classrooms will have a significant impact on preparing students for the local and global job markets.

According to Al-Rasheedy and Elqot (2022) and Mosad (2019), the adoption of new technologies in universities provides students with a diverse range of resources and information that can aid in their transition through the learning process. Moreover, Fazari (2020) asserts that these new technological educational methods represent an obligation for Egyptian higher education to shape the future. Education policymakers, educators, and business investors in Egypt acknowledge the significance of digital learning and its vital role in achieving the desired socioeconomic progress.

According to Al-Rasheedy and Elqot (2022) and Jumani et al. (2022), some higher education institutions (HEIs) in Egypt have adopted new technologies like AR and VR, resulting in changes to teaching and learning methods. Mogheith et al. (2019) add that AR has the potential to transform higher education by providing a more interactive and engaging learning experience. The use of AR applications in classrooms offers benefits such as the ability for students to experiment with different effects and techniques in an immersive environment, as well as increased interactivity. Fazari (2020) notes that the use of AR in higher education presents low-cost and promising solutions that can be applied in a range of educational settings.

Meanwhile, Roziq et al. (2020) add that students and faculty members in Egypt may resist the adoption of AR due to lack of understanding or a perception that the technology is not useful. Egyptian higher education institutions face challenges with limited infrastructure, including insufficient internet connectivity and smart device resources. Ragheb et al. (2022) also highlighted other factors affecting the adoption of AR technology, including the availability of augmented-content textbooks and insufficient hardware or software support in universities in Egypt.

### ***AR in Media and Communication Education***

Aitamurto et al. (2022) and Budiman (2016) argue that AR is particularly relevant for social science fields like media and communication as it can assist media and communication students in enhancing their visualization skills and cultivating their interest in mastering the journalistic skills that are essential for both their education and future careers in the industry. Suryanto et al. (2018) and Kan (2021) suggest that utilizing AR to deliver media and communication course content through visual language, auditory language, 3D elements, and visual aids is the most effective way to enhance the learning experience.

According to Calvo et al. (2020), news outlets across the globe are actively seeking ways to effectively inform and engage with their audience. AR news applications have been identified as a potential solution to enhance audience engagement. Consequently, Stamm et al., (2019) believe that traditional media courses can be modified to include interactive digital content, using AR. Ikonen and Uskali (2020) and Zhang (2022) also emphasize that the increasing use of AR in media and communication necessitates ongoing development in this area to keep up with advancements in the digital world. In

today's media industry, continual digital knowledge and technological skill development are essential to ensure the use of current applications in daily work.

Other researchers (Aitamurto et al., 2022; Al-Rasheedy & Elqot, 2022; Garzón, 2021; Zhang, 2022) have highlighted the benefits of incorporating AR in media and communication education. This can enhance news reporting courses by enabling students to create interactive and immersive news content that engages audiences in a novel and captivating way. AR can also offer additional context and background information, helping students to grasp media and communication content more effectively. For instance, students can use AR to provide historical context for current events, creating immersive experiences. In addition, AR can be used for hands-on training and simulations in media and communication courses, allowing students to practice and apply their skills in a virtual environment.

### ***Technology Acceptance Model (TAM)***

According to previous researchers (Alam et al., 2021; Amiruddin et al., 2021; Roziq et al., 2020; Su & Li, 2021), the perception of students is a critical factor in the adoption of augmented reality (AR) applications in higher education. Davis (1986) suggests that the acceptance of a new technology is a significant determinant of its success or failure. Davis's model includes four components: behavioral intention to use the new technology, willingness to try new technologies, perceived usefulness of the new technology, and perceived ease of use of the new technology.

As per Deslonde and Becerra (2018), the central concept of the TAM model is that the adoption of technology by users depends on their behavioral intention, which is determined by their perceived usefulness (PU) and perceived ease of use (PEU). Behavioral intention (BI) refers to the degree of an individual's willingness to consciously plan and adopt a new technology. Furthermore, TAM suggests that users are more likely to have a favorable attitude towards a new technology if they perceive it to be useful and easy to use for their own needs.

Various studies on technology integration in education (Akçayır & Akçayır, 2017; Alam et al., 2021; Fathema et al., 2015; Harryanto et al., 2018; Mogheith et al., 2019; Roziq et al., 2020; Xiong et al., 2021) suggest that student perception plays a critical role in the adoption and use of technology. The Technology Acceptance Model (TAM) proposes that user acceptance of new technology is influenced by their perceived ease and usefulness. As argued by Ikhsan (2020), if students perceive AR technology as beneficial in helping them achieve their learning goals and enhancing their class activities and perceive it as easy to use, they are more likely to adopt and use it. Conversely, if students find AR technology difficult to use or not useful, they are less likely to adopt and use it (Cabero-Almenara et al., 2019; Godoy Jr., 2020).

According to Su and Li (2021) and Harryanto et al. (2018), there are several other factors that could impact how students perceive AR technology, such as their prior experience with similar technologies, the availability of relevant content, and the technological limitations of the AR system. Ultimately, the TAM model suggests that whether or not students adopt and use AR technology depends on their perceptions of its usefulness and ease of use. By understanding these perceptions, researchers and developers can design AR technologies that are more likely to be embraced by the public. Therefore, it is crucial for universities to assess students' readiness and openness to adopting new technologies like AR before integrating them into their learning systems (Aqel & Azzam, 2018; Mogheith et al., 2019).

## **3. Methodology**

### ***Research Instrument***

The present study utilized an online questionnaire created using Google Forms as its methodology. The questionnaire was distributed to participants electronically through a provided link, accompanied by a clear description of the study's objectives and an invitation for voluntary participation. The questionnaire consisted of three sections: the first section requested personal information from the participants, the second section contained a single question with multiple-choice answers addressing the technical factors driving students to use AR in learning (four sentences), and the third section consisted of questions about AR usage in classrooms (six sentences), negative factors affecting AR acceptance (four sentences), AR's role in the media (five sentences), and students' perceptions (six sentences). A five-point Likert scale was used as the measurement scale, with response options ranging from "strongly disagree" to "strongly agree."

### ***Questionnaire Validity and Reliability***

To ensure the content validity of the questionnaire, a panel of experts reviewed its clarity, wording, and comprehensibility. The panel consisted of instructional technology professor, computer scientist, and AR/VR engineer, who have experience in teaching AR/VR courses or developing AR/VR softwares. Based on their feedback, necessary modifications were made, such as rephrasing, deleting, or rearranging certain sentences. To assess the questionnaire's reliability, Cronbach's Alpha value was used, which measures the internal consistency of the responses on a scale from 0 to 1. A value of 0 indicates a lack of internal consistency, while a value of 1 indicates perfect internal consistency (Skaik,

2016). In this study, the questionnaire had an excellent internal consistency, with a Cronbach's Alpha value of 0.934, indicating that it was suitable for use in the study.

#### **Data Collection and Analysis**

The researchers employed email communication to distribute the questionnaire link to the participants, accompanied by a detailed explanation of the study's objectives. The data collection phase lasted two weeks, during which the participants provided their responses. The data were entered into a spreadsheet and subsequently transferred to SPSS software for reliability testing and statistical analysis. To address the research questions, descriptive statistics were applied, including frequencies, percentages, mean scores, standard deviations, and ranks, to compute the demographic information of the sample and the contents of the questionnaire's additional sections.

#### **4. Results**

After the data were collected and tabulated in SPSS, relevant analysis tests were performed to examine the participants' characteristics and to obtain results for the research questions. The demographic characteristics of the respondents are presented in Table 1. It can be observed that the majority of respondents were females, in their final year of study, with over eight years of experience using smart gadgets, and who use the internet and various mobile applications for more than eight hours per day.

Table 1. Participants' Demographics

Category		Frequency	Percentage
Gender	Male	63	27.4
	Female	167	72.6
Academic Year	One	13	5.7
	Two	32	13.9
	Three	23	10
	Four	162	70.4
Years of experience using smart gadgets	1-3 yrs	6	2.6
	4-6 yrs	10	4.3
	7-8 yrs	50	21.7
	Above 8 yrs	164	71.3
Time spent using the Internet & mobile apps	One hour	5	2.2
	2-4 hours	41	17.8
	5-7 hours	75	32.6
	Above 8 hrs	109	47.4

In order to address the first question, which explores the technical factors that motivate media students in Egyptian universities to adopt AR in learning, the participants were presented with four statements describing common technical reasons, and were asked to select those that applied to them. The results, presented in Table 2, indicate the number and percentage of participants who selected each reason. The data reveals that owning a smart gadget is the most commonly cited reason, with over 200 responses. The third and fourth reasons garnered similar percentages, while the second reason had the lowest number of responses, with just 100 participants selecting it. Overall, the data suggests that owning a smart gadget is the most important factor driving the use of AR in learning among media students in Egypt.

Table 2. Technical Reasons

#	Reason	Frequency	Percentage	Rank
1	I own a smart gadget (phone, computer, etc.)	202	31.5	1
2	Availability of Internet at university or educational institution	100	15.6	4
3	Availability of Internet at home	178	27.8	2
4	Personal Internet subscription (3G-4G)	161	25.1	3

In order to address the second question, which focuses on the use of AR by media students in Egyptian universities, participants were asked to evaluate six statements. Descriptive statistics were applied to determine the frequencies,

mean scores, and standard deviation scores, which are presented in Table 3. According to the data, the participants showed moderate agreement with all of the statements, with mean scores ranging from 2.88 for the fourth statement to 3.49 for the second statement. These results suggest that students are not yet fully familiar with the many possible applications of AR in media.

Table 3. AR Usage in Media Classes

Item	SA	A	N	D	SD	Mean	St.D.
I use AR technology to locate roads on Google Maps, different road maps, apps, and sites	87	36	47	20	40	3.48	1.494
I use AR technology to translate texts on Google Translate	97	33	31	23	46	3.49	1.582
I use AR technology through games	80	41	38	31	40	3.39	1.502
I use AR technology through textbooks	51	37	46	25	71	2.88	1.545
I use AR technology through interactive stories	64	30	53	35	48	3.12	1.492
I use AR technology from Snapchat Filter	84	41	37	22	46	3.41	1.541

In addressing the third question, which pertains to factors that may affect the acceptance of AR as an educational tool among Egyptian students, participants were presented with four statements to evaluate. Descriptive statistics were utilized to determine the frequencies, mean scores, and standard deviation scores, which are presented in Table 4. The data indicates that the participants exhibited moderate to high agreement with all statements, with mean scores ranging from 3.34 for the last statement to 3.63 for the second statement. These findings suggest that negative factors could potentially impact the acceptance of AR as an educational tool among media students in Egyptian universities.

Table 4. Factors influencing acceptance

Item	SA	A	N	D	SD	Mean	St.D.
Poor Internet connectivity at the university impedes using AR apps in education	100	32	35	21	42	3.55	1.551
Lack of free AR programs is an obstacle to its usage in education	94	39	46	19	32	3.63	1.435
Lack of training programs in use of AR impedes its usage in education	93	37	48	19	33	3.60	1.444
Using AR results in a lot of problems in media work	67	37	63	34	29	3.34	1.367

To address the fourth question, which examines the perceptions of Egyptian university students regarding AR role in media, the participants were requested to express their agreement with five statements. Descriptive statistics, such as frequencies and mean and standard deviation scores, were utilized to analyze the responses. The outcomes, as shown in Table 5, revealed that the mean scores ranged from 3.53 for the first statement to 3.59 for the second statement. The findings suggest that the participants moderately agreed with all of the statements, implying that they consider AR to be beneficial in the media field.

Table 5. AR Role in Media

Item	SA	A	N	D	SD	Mean	St.D.
AR techniques increase my practical and technical skills in my specialist field of media	83	48	41	25	33	3.53	1.434
AR increases my future professional competence in my specialist field of media	89	41	47	23	30	3.59	1.417
Use of AR apps is very relevant to my future career in media	80	49	52	22	27	3.58	1.358
The result of using AR in studying media is excellent	79	44	56	26	25	3.55	1.349
I will use AR techniques in my study and in my career development	79	56	41	28	26	3.58	1.364

To address the fifth question, regarding the perceptions of AR usage in media courses among students in Egyptian universities, participants were asked to rate their agreement with six statements, and descriptive statistics were used to calculate frequencies, mean scores, and standard deviation scores. The results, shown in Table 6, indicate that the mean scores ranged from 3.40 for the fourth statement to 3.57 for the fifth statement, with moderate agreement observed for all statements. These findings suggest that participants hold generally positive perceptions of AR.

Table 6. Students' Perceptions of AR

Item	SA	A	N	D	SD	Mean	St.D.
I think AR techniques are easy to use	78	42	57	25	28	3.51	1.373
I am confident that I can manage AR apps	62	43	77	25	23	3.42	1.268
I feel creative when using the computer and phone in AR apps	75	57	45	19	34	3.52	1.401
My colleagues think I should use AR apps	60	52	63	30	25	3.40	1.297
I use AR programs to accomplish a lot of practical and life tasks	78	56	39	34	23	3.57	1.351
I feel content when using AR programs	75	48	59	27	21	3.56	1.299

## 5. Discussion

The current study explored the perspectives of media students in Egyptian universities towards the utilization of AR in academic settings. The results showed that the students have positive perceptions of using AR technology in learning media. This result is also reflected in the students' positive perceptions of AR role in media. These results correspond with Ikhsan's (2020) argument that if students perceive AR as beneficial in their learning process and perceive it as easy to use, they are more likely to adopt and use it.

One significant finding of the study was that having a smart device was the primary motivation for media students to use AR in learning. This result is not surprising given the widespread availability of smartphones and tablets among students worldwide, and at the same time the result is conforms Haleem et al.'s opinion (2022) that smart gadgets are significant element in the digital learning. Additionally, the students held a moderately positive view of AR benefits in the field of media, indicating that it increases their professional competence as well as practical and technical skills in media. These results are consistent with what Aitamurto et al. (2022) have highlighted on the benefits of incorporating AR in media and communication education and emphasizing its important role in enhancing students' occupational skills.

However, the study also revealed that media students were not well-versed in the various applications of AR in media and communication learning such as using AR in Google maps and translate, or in games, textbooks, stories, and snapchat. This result is compatible with Heikal's (2021) who indicated that AR apps implementation in educational curriculums especially in media and communication programs is still limited in Egyptian universities. This result highlights the need for educational institutions to incorporate AR technology into their curricula and provide students with adequate training and resources to effectively utilize AR as an instructional tool. For instance, Google Translate app currently supports Word Lens-based AR translations for 30 languages (Yildiz, 2021). Further, Sudarmilah et al. (2019) found that using AR in educational games can be a quality learning media application gaining students and teachers' high ease of use evaluation. Also, when combined with printed textbooks, AR can turn classes into interactive and updated learning centers, and students who are still confused after reading the lesson may view videos or 3D images to gain a deeper understanding of the subject (McMahon, 2020). Moreover, the study identified several negative factors that may impede students' acceptance of AR as an instructional tool. These factors included poor Internet connectivity, lack of training and free AR programs. The result is consistent with previous research findings that found poor Internet connection, and lack of both training and AR programs in education are barriers to acceptance of AR in the educational setting (Alkhatabi, 2017; Alzahrani, 2020; Toledo-Morales & Sanchez-Garcia, 2018). These challenges suggest that there is a need for further development of technical infrastructure and individual capacity to address these issues and make it more accessible and user-friendly.

## 6. Further Research

It is expected that by 2030, the global VR and AR market will grow to \$1.3 trillion (Maryville University, 2023) calling for further research on their potential uses. For example, since AR can display virtual objects embedded in the real physical world, future researchers may explore how AR can provide excellent opportunities for businesses working in media and communication, and how the properties of AR can contribute in engaging the audience (Makarov, 2022). With AR, the audience can be drawn deeper into the news content, which may help media experts to create techniques enabling the audience experience the news story as a first-person, and feel like they are directly participating in the event (Goodwork Labs, 2018). Moreover, AR can be used for content delivery in the media and entertainment world (Makarov, 2022), where AR capabilities can augment the relevant aspects of the environment to create engaging and convincing content for those who like to explore the world to intensify their real-life experiences (Goodwork Labs, 2018).

VR and AR have grown arm in arm quickly, the former recreates environments and the latter enhances physical images,

and the two have gained emphasis in recent years. Future research may address virtual influencers (VI) as interesting counterparts that could leverage the benefits of human influencers by exerting extra control over content and expression (Kim et al., 2023). Media agents such as VI with more perceived human-like embodiment are believed to invoke more effective cognitive treatment, which increases the probability of social interaction (Gambino et al., 2020). Thus, virtual influencers with characteristics similar to human are expected to serve as human-like heuristics, which will make it possible for people to perceive them as human (Kim et al., 2023). Furthermore, the rise of VR, AR, and mobile video will all influence the future of digital media (Maryville University, 2023). These technologies can help print and digital media integrate and use instantaneous data to provide robust, customized experiences for customers.

## 7. Conclusion

The research aimed to explore students' perception of the usage of AR technology in their in media and communication learning, the potential benefits and barriers of using AR as an instructional tool, and the different uses of AR in media classes. The findings suggests that there is a need for more educational initiatives that can promote AR as an effective instructional tool for media students in Egypt. Furthermore, addressing the identified limitations and barriers could help promote the effective use of AR technology as an instructional tool for media students in Egypt. Overall, this study provides valuable insights into media students' perspectives on AR technology and its potential uses in media education. The study also highlights the need for ongoing research and development of AR technology to address technical and personal challenges that may impede its widespread adoption.

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