Augmented Reality in Psychology education: A phenomenological study on the views of university students

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Abstract: *This research used a qualitative (phenomenological) design to examine university pupils' views on augmented reality (AR) applications in psychology courses. The participants in the study were 110 pupils studying at Near East University. The group was determined using criterion sampling technique, which is a purposive sampling method. The data were collected through semi-structured interviews and examined using descriptive analysis. The obtained findings show that the students generally view the integration of AR applications into psychology courses positively. The participants emphasized that AR especially concretizes abstract concepts, individualizes learning, and offers an interactive environment by increasing motivation. On the other hand, technical deficiencies, hardware constraints, usage difficulties, lack of direction, and time management issues were indicated. According to these results, it is recommended that teaching design should be reinforced and user-friendly applications should be developed so that AR technology can be more effectively used in psychology education. In addition, further research has to be conducted with mixed methods so as to improve the generalizibility of data*.

Keywords: Augmented Reality (AR), Psychology education, University students, Phenomenology, Abstract concepts.

1. Introduction

Psychology courses play a crucial role in improving the personal development, communication skills, conflict resolution abilities and problem-solving skills of students by helping them to understand the behaviors, thinking processes, and emotional reactions of individuals (Başarer, 2019). In addition, psychology education makes positive contribution to students living healthier and more satisfactory lives by offering them career opportunities (King, 2016). Literature review shows that usage of technology applications in psychology courses introduces students with important opportunities. At this point, it is emphasized that usage of augmented reality applications in psychology courses enriches the learning experiences of students and serves to concretize abstract psychological concepts (Riva, 2019). In this context, augmented reality applications increase the learning motivation of individuals, support experimental

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learning, transcend the limitations of time and space, develop scientific thinking, and ensures suitability for different learning styles. In addition, augmented reality applications add strong contributions to conventional learning methods by making psychological education more meaningful, interactive and permanent (Bacca et al., 2014).

1.1 Literature review

A review of the relevant literature reveals that Boz (2019) found that augmented reality applications make a substantial contribution to attracting students' interest in lessons in the field of education. When the research was examined, it was seen that the researchers particularly addressed the possibilities offered by these applications in terms of transferring movable and difficult-to-transfer objects into the classroom environment in three dimensions. Furthermore, the research indicated that these applications were effective in the teaching and learning process, especially in concretizing abstract concepts and visualizing concepts and spatial relationships. Similarly, in the research prepared by Karakaş & Özerbaş (2020), it was observed that students found the use of AR applications in the learning-teaching environment effective and motivating. Lampropoulos' (2023) research stated that the combined use of artificial intelligence and augmented reality applications increased interaction related to the lesson and led to immersive, engaging, and personalized learning experiences. The research concluded that these learning experiences can be applied at all levels of education. Similarly, Taşkın et al. (2023) emphasized the positive aspects of three-dimensional modeling on education. They emphasize the need for further widespread adoption of this technology in the future. Hakim & Hammad (2022) discussed how virtual reality technology can be used as an effective tool in therapy and rehabilitation processes within the field of psychology.They also note that this technology offers significant opportunities in areas such as assessment, diagnosis, treatment, research, and trainee education. It was explored that different studies underlined developments in certain areas of psychology such as assessment, diagnosis, treatment, research and the training of interns. In terms of the related research, it was found out that augmented reality applications in psychology courses offered important opportunities to students for concretzing abstract concepts, creating interactive learning environments, and increasing motivation. Especially in predominantly theoretical courses such as psychology, AR applications help students understand the topics better and turns learning into an experiment-based process (Chen et al., 2020). However, in order to benefit from this technology in education in an effective and sustainable manner, student experiences, expectations and views should be taken into consideration (Mendes et al., 2020). The feedback of students regarding augmented reality applications plays a critical role in improving the content design and developing teaching methods (Li et al., 2020). In addition, these opinions provide essential data on the accessibility of technology as well as its user-friendliness and real impact on learning. Therefore, evaluation of the perceptions of students as regards AR applications

bears huge importance in terms of successful integration of technological innovations (Akçayır & Akçayır, 2017). In this context, the literature review showed that there is no research evaluating the AR applications in psychology courses from the perspective of university students. This study is expected to address the existing gap in the literature. In addition, it is thought that this research will shed light on the university students adopting, accepting and popularizing technology.

1.2 Significance of the research

The findings of this study are anticipated to offer initial awareness into learning processes and the field of educational technologies. It is believed that the findings obtained from the research will offer a data-based and reliable framework for evaluating performance and efficiency of the self-learning processes of university students and make crucial contribution to their self-regulated learning. In addition, this study is expected to allow students for comparing their experiences with conventional learning methods and make AR's relative effectiveness level more comprehensible.

2. Objectives of the study

The present research seeks to explore university students' views regarding augmented reality applications within psychology courses.Answers were sought to the following questions so as to realize the general purpose of the study.

1. How do students perceive the use of augmented reality applications in psychology classes?
2. How do students perceive the challenges of using augmented reality applications in psychology courses?

3. Method

3.1 Research model

A qualitative phenomenological approach was employed in this study to explore the subject matter in depth. The basic purpose of this design is to display the experiences, views and practices of individuals as regards a given topic (Teherani, 2015). Within this study, the experiences of pupils on augmented reality are related to the fact that they have taken this course before.

3.2 Sample group

The research population consists of pupils at the faculty of education (n=110). The sample was selected based on predetermined criteria. The criterion of the sample was identified as choosing the students who have previously used AR applications at the university.

3.3 Data collection and data collection tool

Within the scope of this study, research on the experiences and opinions of university students on the usage of AR applications in psychology education are examined. In this context, literature review has been conducted in national and international indexes. This examination revealed that phenomenological studies on student experiences as regards AR applications in psychology education are limited. Accordingly, a semi-structured interview form was designed by the researchers to gather the research data.

3.3.1 Semi-structured interview form

In order to gather data for this study, the researchers developed a structured interview form consisting of two sections: one for demographic information and another containing two open-ended questions related to the purpose of the research. Expert opinions were taken to ensure content validity of the interview questions. In this process, the assessments of thirteen exerts (n=13) were obtained, including augmented reality and education technologies specialists (n=5), curriculum and its development experts (n=4) and measuring and evaluation specialists (n=4). Lawshe (1975) technique was used for the analysis of expert opinions. Categories such as restricted understanding and no understanding of the content were formed to evaluate the comprehensibility of the items, and spaces were provided to allow for expert advice on revising items that are difficult to understand. Each item was analyzed independently thorough these determined categories. To determine the content effectiveness of the items in the interview form, Lawshe's (1975) Content Validity Ratio (CVR) was applied. Performed calculations showed that the Content Validity Ratio of the form was +1 [10] as a result of which it was approved that the form had satisfactory level of validity. After receiving input from the specialist, we revised the regulations and completed the final version of the interview form.

3.4. Analysis of the collected data

This research employed content analysis to examine the qualitative data collected. In the analysis, the obtained data are examined in depth and coded, and themes are created (Braun & Clarke, 2022). To ensure the reliability (consistency) of the study, the collected data were coded and analyzed individually by multiple researchers (researcher triangulation). Following the coding process, the resulting codes and themes were presented to expert opinion and a joint decision was made. In addition, to strengthen the validity (and reliability) of the research, the data obtained from the study were interpreted and presented as direct quotations without making any changes thereto. This application ensures that the reader reaches the comments of the participants by viewing the original form of the data.

4. Findings

4.1 Students' perspectives on the use of augmented reality applications in the psychology course

With respect to the study's first sub-purpose, pupils' opinions on the use of AR applications in the psychology course were explored. Table 1 presents their views, which were grouped under two main themes.

Table 1. Students' opinions on the usage of AR applications in the psychology course

Theme	Views	Frequency Distribution(f)
Effective Teaching	Concretization of abstract concepts	65
	Increase in motivation	30
	Interactive environment	15
Individuality in Learning	Contribution to individual learning	68
	Increase in the level of attention	42

Analysis of the obtained data reveals that the "Effective Teaching Practices" theme is characterized by the majority of students believe that using AR applications in psychology courses plays a crucial role especially in making abstract content perceptible. This finding is substantiated with the following quote from the views of the participants:

"*My engagement in the classroom advanced through the use of augmented reality (AR) tools. The interactive and visually appealing appearance effectively drew my attention, contributing to higher levels of interest, participation, and motivation."* (Ö 40)

Another essential finding is that the majority of the university students stated that using AR in psychology courses especially increases motivation significantly. The views show that AR applications makes the classes more engaging and that the interest and willingness to participate in the class increases through visual/ interactive contents. An example expression is provided below.

"*Implementing augmented reality (AR) in the classroom uncompensated to greater student engagement by capturing attention through interactive and visual elements. This increased willingness to participate and had a noticeable positive impact on motivation."* (S 94)

The findings of this study display that a segment of the university students emphasize that AR adaptation in psychology classes lays the ground for the creation of an interactive learning environment. This view indicates that students exhibit active participation in the learning process and that AR applications make the classroom environment more dynamic and vivid. The expression of a participant which illustrates this finding is provided below:

"*Thanks to the technology of AR applications, I wasn't just a listener. I actively participated in the lesson. The applications made the classroom environment more interactive and vibrant."* (S 83)

In addition, it can be said that the increase in motivation and attention levels resulting from the opinions expressed by students aligns with the nature of psychology education, which requires learning through experience and active participation, thanks to AR applications, and that interactive learning takes place with this application. Creating interactive learning environments in psychology courses indicates that students actively participate in meaning-making processes, which is particularly important for psychology courses that aim at critical thinking and concept concretization. Overall, these findings show that AR applications offer a field-specific teaching value by meeting the abstract, process-oriented, and experience-based learning needs of psychology.

4.2 Students' perspectives on the challenges of AR applications in the psychology course

In line with the study's second sub-objective, students' perspectives on the challenges of using AR applications in psychology courses were explored. As presented in Table 2, their responses were categorized into two themes corresponding to this sub-objective.

Table 2. Students' opinions on the challenges of AR applications in the psychology course

Theme	Views	Frequency Distribution (f)
Limitations of Augmented Reality Applications	Technical difficulties	65
	Hardware limitations	45
Usage problems	Lack of directives	43
	Lack of knowledge	38
	Time management	29

As illustrated in Table 2, the majority of students highlighted technical problems as a key obstacle to using augmented reality (AR) applications in psychology courses. This finding reveals that using AR applications in the teaching of psychology classes may not always be compatible with the technical infrastructure and hardware facilities of institutions. In addition, these technical difficulties restrain the effective employment of applications by making AR's contribution to the learning process more difficult. An example view is given below.

"*Augmented reality (AR) tools were generally effective in enhancing engagement; however, technical challenges, including connectivity issues and limited equipment availability, were noted as factors that impeded students' focus and learning outcomes.*" (S23)

On the other hand, some students claimed that using AR in psychology classes leads to hardware limitations, which can create inequality of opportunity among students and reduce the efficiency of AR-assisted learning experience. The

conclusion drawn from this finding shows that hardware is of great importance in the use of augmented reality (AR) applications, and that its accessibility to every student plays a critical role. An example opinion is given below:

"*I think that using AR applications in the psychology class has increased the effectiveness of the course. However, from the feedback of my friends, I can say that the barriers to accessing the hardware have limited the participation of some students and led to unequal learning experiences*." (S 44)

In the second theme, the vast majority of students indicated that the guidelines in the psychology courses regarding the application's usage problems contained some shortcomings. Failure to provide adequate instructions regarding the usage of AR applications in psychology classes made it difficult for the students to understand the application. This situation led students to focus on using the application, making it difficult for them to concentrate on the course content and ultimately negatively impacting their learning process. An example student view is offered below.

"*Limited instruction on the operation of augmented reality (AR) tools contributed to some difficulties in participation, which in turn affected my ability to concentrate on the lesson content.*" (Ö 87)

Likewise, some students stated that they suffered from lack of information as regards the usage of AR applications in psychology classes. The obtained finding implicates that university students do not have the preliminary knowledge required for effective usage of AR applications in psychology classes. For this reason, and due to lack of knowledge, the students were not able to use these applications properly and efficiently. It is safe to claim that this situation affected the learning process negatively. A sample opinion is provided below.

"*While AR applications contributed positively to student learning, the presence of technical issues and insufficient guidance on their use created obstacles that hindered smooth engagement with the lesson."* (Ö31)

Another segment of the students stated that delays were experienced in the installation and usage of AR applications in psychology classes, which led to problems in the effective usage of class hour. This finding indicates that AR applications can be time-consuming in both installation and usage processes. In addition, these problems affect time management during the class hour negatively and leads to interruptions in the flow of the lecture, which restrains the learning duration of the students. An example view is given below.

"*Installing and configuring the AR application in the psychology class required a considerable amount of time. As a result, the limited time available for learning made it challenging to fully engage with key aspects of the course content.*" (Ö 67)

In conclusion, the findings of the research have revealed that augmented reality applications are supportive of learning in psychology education and have a suitable structure for the field. The results obtained have revealed that the use of this application in psychology courses has some limitations. Psychology courses are conceptually complex. Technical problems, hardware limitations, and

insufficient instruction can create difficulties for students in focusing on the content of the psychology course. Furthermore, this can be considered a primary problem for psychology courses where sustained attention and cognitive engagement are critical for learning. Moreover, the lack of prior knowledge and guidance regarding augmented reality (AR) applications may limit the pedagogical potential of this technology in psychology courses. Time losses during setup and usage processes can negatively impact the flow of the course and the continuity necessary for learning psychological concepts. These findings suggest that for the effective use of AR applications in psychology education, it is important to develop field-specific planning, strengthen the technical infrastructure, and provide structured guidance to students.

5. Discussions & conclusions

The study found that augmented reality (AR) applications concretize abstract concepts in psychology courses and lead to lasting learning. In the relevant literature, the research by Chen et al. (2025) showed that the use of AR applications was parallel to the concretization of abstract concepts. This finding is consistent with the research findings. Furthermore, this research concluded that AR applications have a positive effect on students' motivation and interest in the course. It was also investigated that these applications create interactive learning environments and make students more active in the learning process. Sarıyıldız et al. (2024) and İzgi Onbaşılı (2018) also emphasized the importance of AR technology in increasing students' interest in courses and positively influencing their motivation levels.

The second finding from the research revealed that augmented reality (AR) applications are fundamental supporting tools for psychology courses, but their use is limited by factors such as technical deficiencies, hardware limitations, and a lack of instructions and information. In this regard, the study conducted by Şimşek et al. (2025) examined the effects of AR content duration on reading comprehension performance and cognitive load, and revealed that design and usage limitations of AR applications can affect the learning process in different ways. The findings necessitate a combined consideration of pedagogical and technical dimensions for the effective use of augmented reality applications in psychology courses.In addition, it is also important that AR contents which concretize abstract concepts are designed according to the cognitive skills of relevant students and that their content duration are structured based on the learning targets. In-service training activities on the usage of AR applications in classes could also be effective. It is believed that such practices will increase the positive impact of AR applications in learning processes and result in more permanent learning.

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