

Generative AI in Occupational Therapy Education: The Impact on Students' Perceptions and Learning Processes

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Introduction / Rationale:

The concept of artificial intelligence (AI) was first introduced at the Dartmouth Conference held in 1956, and John McCarthy is regarded as the pioneer and inventor of this concept (Alpaydın, 2013). Artificial intelligence is defined as the ability of computers to perform tasks such as problem solving, understanding, and learning by imitating human-like cognitive processes (Nabiyev, 2012). Today, artificial intelligence is considered a multidimensional system that supports cognitive processes such as learning, decision-making, problem solving, and language processing through technologies including machine learning, expert systems, and computer vision. In this respect, artificial intelligence has become a fundamental technology in many areas of life, particularly in the field of healthcare (Öztemel, 2020).

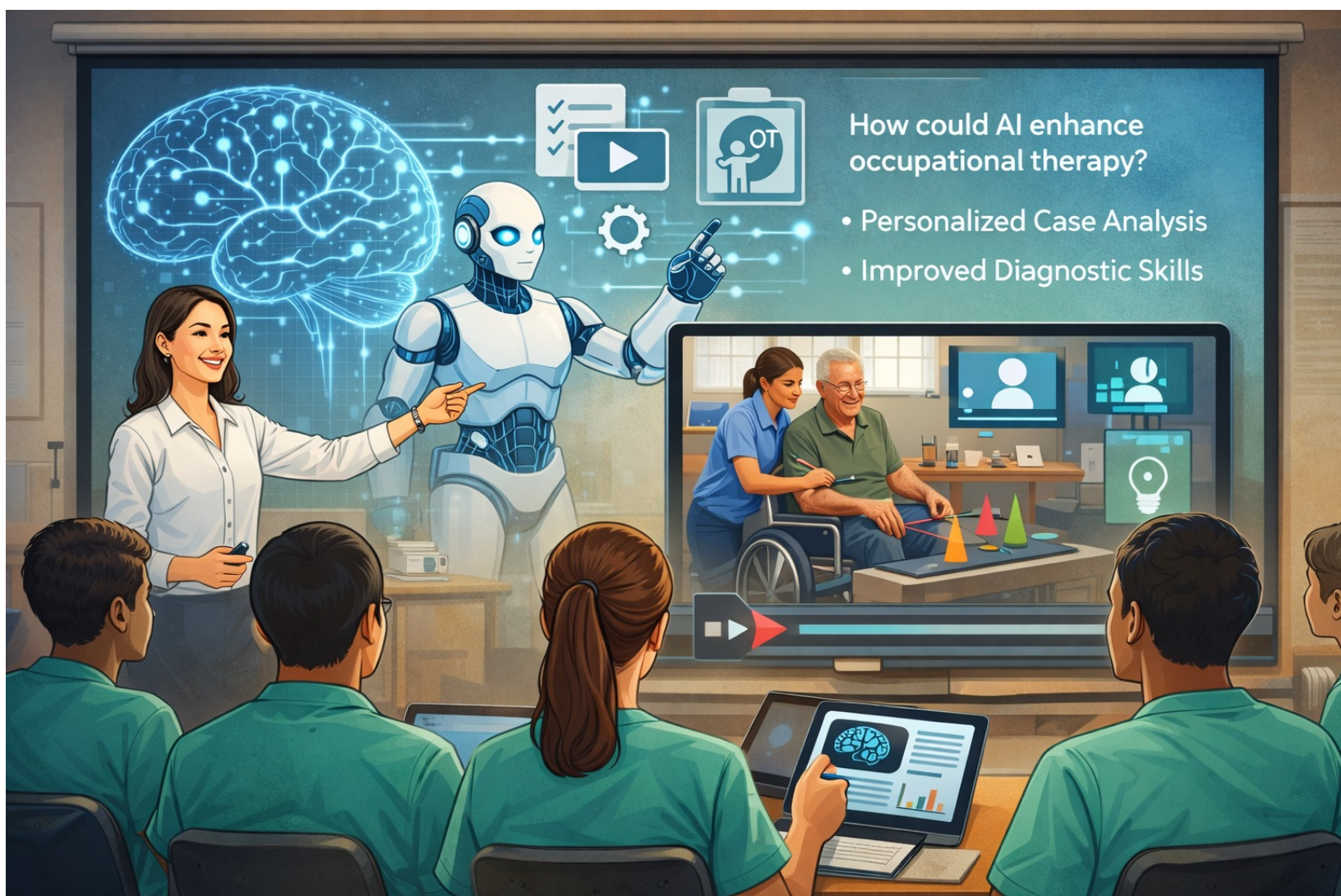
In healthcare services, artificial intelligence contributes to the restructuring of work processes by reducing both administrative and clinical burdens, aiming to enhance the quality of service delivery by enabling faster and more efficient diagnostic, assessment, and treatment processes (Akalin & Veranyurt, 2020).

In the field of education, the use of artificial intelligence supports the monitoring of students' learning processes and ensures continuous access to education, while facilitating student management, assessment, and feedback processes for teachers (Osetskiy et al., 2020). In addition, artificial intelligence enables the personalization of learning materials, offering learning experiences tailored to students' individual needs and strengths (Vincent-Lancrin & Van der Vlies, 2020).



Objectives:

This study examines the impact of generative AI tools on case analysis in occupational therapy education.



No financial disclosure.

Methods

Study Design

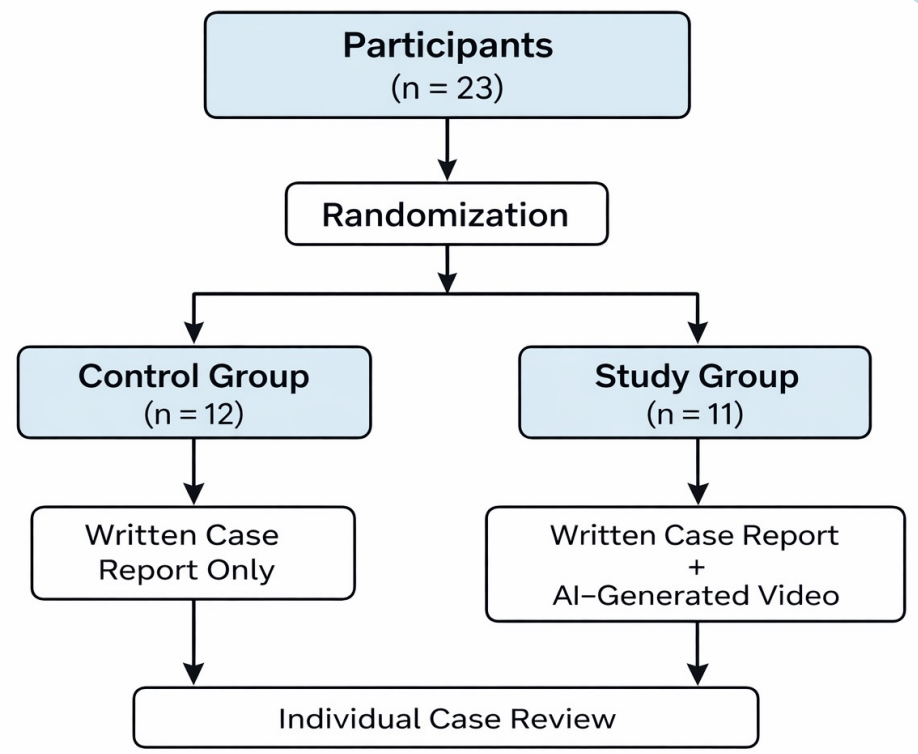
This study was conducted using a qualitative research approach with a descriptive design. Content analysis based on open-ended questions was employed to explore occupational therapy students' perspectives on AI-supported case analysis.

Participants

The study sample consisted of third-year undergraduate occupational therapy students enrolled at Istanbul Atlas University. A total of 23 students participated in the study.

Procedure

Participants were randomly assigned to one of two groups. The control group was provided with a written case report only. The study group reviewed the same written case report and additionally viewed an AI-generated video related to the case. Both groups individually reviewed the case materials.



Data Analysis

Qualitative data were analyzed using **conventional content analysis**, consistent with the approach described by Hsieh and Shannon (2005). This inductive method was selected to allow categories and themes to emerge directly from the data rather than being imposed a priori.

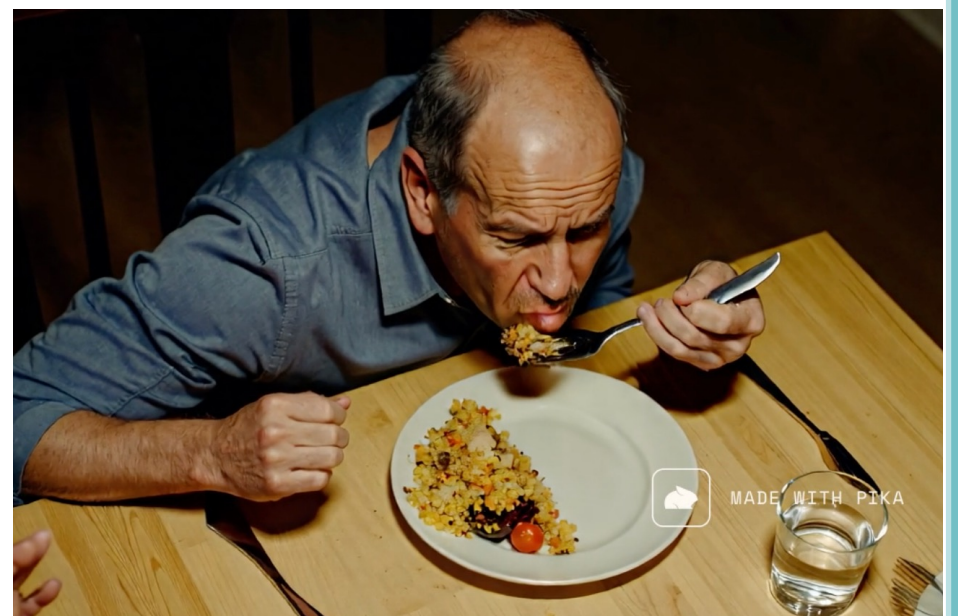
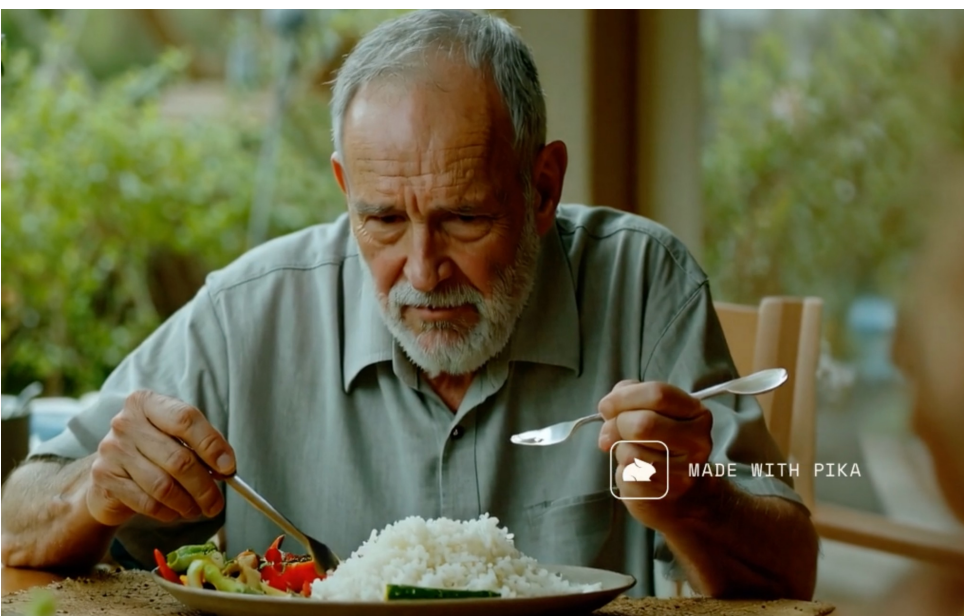
During the analysis process, participants' responses were read repeatedly to achieve immersion in the data. Meaningful units were identified and systematically coded. Similar codes were then compared and grouped into broader categories, which were subsequently organized into overarching themes.

As a result of the analysis, three main themes were identified:

1. Learning Resources and Information Processing
2. Learning Process
3. AI-Assisted Learning

Interview Questions

1. What are your thoughts on the difficulties M.K. experiences during the eating activity?
2. Did you find the information provided about M.K. sufficient?
3. How would you evaluate your own learning process while analyzing this case? (Was it easy to understand? Challenging? Did you need additional information or visual materials?)
4. In your opinion, how did the inclusion of artificial intelligence in the case presentation affect learning?
5. In what ways do you think this case offered a different learning experience compared to traditional case analyses?



Ethical Considerations

The study was conducted in accordance with the principle of voluntary participation, and informed consent was obtained from all participants. Participants' identities were kept confidential, and the data were used solely for scientific purposes.

Results:

Students realized the cases were AI-generated upon reading the questions. The study group reported better comprehension and interpretation of the case. However, opinions on AI's role in learning varied, with some finding it facilitative, complex, mechanical, or similar to traditional methods.

THEME 1 – LEARNING RESOURCES AND INFORMATION PROCESSING

Positive Categories	Negative Categories
Learning through Video (A)	Need for Additional Personal Information (E)
Learning through Reading (B)	Need for Additional Anamnesis Information (F)
Inference from Video (C)	Need for Additional General Information (G)
Inference from Reading (D)	Need for Additional Visual Information (I)
	Sufficient Information (perceived as insufficient context) (H)

Study group: Learning was predominantly video-based, with participants reporting active inference from video content and perceiving the provided information as sufficient.

Control group: Learning relied mainly on text-based materials, accompanied by a frequent need for additional information and visual support.

THEME 2 – LEARNING PROCESS

Positive Categories	Negative Categories
Positive Contribution / Comprehensibility (J)	Need for Additional General Information (L)
	Need for Additional Visual Information (K)
	Unnecessary Detailed Information (M)

Study group: The learning process was described as clear and comprehensible, with minimal need for additional information or clarification.

Control group: Participants more frequently reported a need for extra information or visual clarification, indicating a more fragmented learning process.

THEME 3 – AI-SUPPORTED LEARNING

Positive Categories	Negative Categories
Ease of Access (P)	Difficulty Focusing on Details / Main Issue (N)
Positive Contribution / Facilitative (R)	Concern about Lack of Realism / Mechanical Nature (O)
Facilitating / Inclusive (T)	Shortcomings (S)
	No Difference (U)
	Insufficient (W)
	Complex (X)

Study group: AI-supported case presentation was perceived as facilitative, accessible, and inclusive, contributing positively to the overall learning experience.

Control group: Participants more often reported no perceived difference, concerns about complexity or insufficiency, and limited added value compared to traditional case analysis.

Conclusion / Contribution to the Occupational Therapy Profession

The findings indicate that structured AI-supported content can enhance learning in occupational therapy education by supporting information processing, improving comprehension, and facilitating engagement with case-based materials. Compared to traditional text-based case analysis, AI-supported case presentations offered a more accessible and supportive learning experience. However, students' perceptions of AI varied, highlighting the need for further research to better understand how AI can be effectively integrated into occupational therapy education and optimized to support meaningful learning outcomes.

References:

- Akalın, B., & Veranyurt, Ü. (2020). Sağlıkta dijitalleşme ve yapay zekâ. *SDÜ Sağlık Yönetimi Dergisi*, 2(2), 128-137.
- Alpaydın, E. (2013). *Yapay öğrenme* (4. baskı). İstanbul: Boğaziçi Üniversitesi Yayınevi.
- Nabiyev, V. V. (2012). *Yapay zeka: insan-bilgisayar etkileşimi*. Seçkin Yayıncılık.
- Osetskyi, V., Vitrenko, A., Tatomyr, I., Bilan, S., & Hirnyk, Y. (2020). Artificial intelligence application in education: Financial implications and prospects. *Financial and credit activity problems of theory and practice*, 2(33), 574-584.
- Öztemel, E. (2020). Yapay zekâ ve insanlığın geleceği. *Bilişim teknolojileri ve iletişim: Birey ve toplum güvenliği*, 95-112.
- Vincent-Lancrin, S., & Van der Vlies, R. (2020). Trustworthy artificial intelligence (AI) in education: Promises and challenges. *OECD education working papers*(218), 0_1-17.
- Hsieh, H. F., & Shannon, S. E. (2005). *Three approaches to qualitative content analysis*. *Qualitative Health Research*, 15(9), 1277-1288.