



Metaphorical Perceptions of Middle School Students toward ChatGPT

Mustafa ABEŞ*, Sevtap KUTLUCA**, Tamer KUTLUCA***

* Master Scholar, Institute of Educational Sciences, Dicle University, Diyarbakır, Turkey. ironman2122.fb@gmail.com

** Mathematics Teacher, Kucukkadi Middle School, Sur, Diyarbakır. skutluca@gmail.com

*** Professor, Faculty of Education, Dicle University, Ziya Gokalp, Diyarbakır, Turkey. tkutluca@dicle.edu.tr

ARTICLE INFO

Article history:

Submitted 11.02.2026

Accepted 10.06.2026

Published 30.06.2026

Volume No. 13

Issue No. 1

ISSN (Online) 2414-8512

ISSN (Print) 2311-293X

DOI:

Keywords: Chatgpt, Metaphor Analysis, Middle School Students, Artificial Intelligence in Education, Qualitative Research, Content Analysis, Student Perceptions

ABSTRACT

This qualitative study explores the metaphorical perceptions of middle school students regarding ChatGPT, a natural language processing-based artificial intelligence tool increasingly integrated into educational contexts. Conducted with 90 students from grades 6 to 8 in Diyarbakır, Turkey, the research employs a phenomenological design to examine students' cognitive and emotional interpretations of ChatGPT. Participants completed the prompt "ChatGPT is like ... because ...," allowing them to articulate their insights through metaphors. The data were analyzed using content analysis and grouped under five themes: Knowledge and Guidance, Connection and Communication, Emotion and Meaning, Exploration and Journey, and Change and Transformation. The results reveal that students perceive ChatGPT not only as a functional educational tool but also as a reliable guide, emotional companion, and dynamic learning partner. These findings highlight the importance of understanding students' metaphorical constructions in integrating AI tools into pedagogy and underscore the need for emotionally responsive and pedagogically sound implementations of educational technology.



Introduction

Since the beginning of the 21st century, the technological transformation has radically altered individuals' lifestyles and societal interaction processes. One of the most evident reflections of this transformation is observed in the field of education. Education systems shaped by digital technologies have changed access to information and made learning processes more interactive, personalized, and student-centered. In particular, artificial intelligence (AI) technologies are transforming both teacher and student roles, offering new possibilities in learning environments.

The role of AI in education should not be evaluated merely on an instrumental level. From a philosophical perspective of education, the nature of accessing information, constructing knowledge, and the processes of learning themselves are also being transformed. AI can present content adapted to students' learning speeds, analyze their cognitive processes, and provide pedagogically meaningful feedback. In this context, applications based on natural language processing such as ChatGPT become not just technical tools but also pedagogical actors (Bransford, Brown & Cocking, 2000).

Today, middle school students are described as digital natives—individuals who grow up directly within digital culture, use technology intuitively, and are accustomed to learning through multimedia. These students do not merely see technological tools as sources of information; they also approach them as digital

entities they interact with, learn alongside, and receive responses from. This approach shows that students assign emotional and social meanings to technology and shape their relationships with these tools at a deeper level.

At this point, metaphors are highly functional in making students' perceptions visible. Metaphors not only reveal individuals' mental representations but also reflect their experiences, emotions, and values as powerful expressive tools (Lakoff & Johnson, 2003). Especially in education, metaphor analysis contributes significantly to understanding learner profiles, evaluating pedagogical processes, and revealing how instructional technologies are perceived. Saban (2008) emphasized that metaphors are a fundamental mental mechanism shaping individuals' cognitive worlds and highlighted their effectiveness in examining student perceptions.

Recent studies on metaphors demonstrate that individuals' perceptions of technology and learning processes are multidimensional. For example, in Yildirim's (2022) study, university students' metaphorical perceptions of distance education revealed feelings of loneliness, disconnection, and lack of motivation with metaphors like "glass wall" and "endless tunnel." Similarly, Demir and Altun (2021) examined pre-service teachers' metaphors about e-learning and highlighted uncertainties in pedagogical processes through comparisons such as "guide" and "labyrinth." Celik and Yilmaz (2020) reported that elementary students established emotional bonds with technology using metaphors like "toy" and "sibling" regarding tablet use.

Similar tendencies are also seen in the international literature. For instance, Liu et al. (2023) investigated the metaphors of high school students in China about AI and found that students described ChatGPT with concepts like "wise grandfather" and "magical book," indicating a close relationship with the tool. Likewise, Patel and Kumar (2022), in their study with university students in India, noted that ChatGPT was defined with metaphors such as "ocean of knowledge" and "deceptive friend." These studies show that students attribute human-like qualities to AI applications, including trust, sincerity, and guidance.

However, despite these studies, there remains a significant gap regarding how middle school students perceive new-generation tools like ChatGPT. This age group actively uses digital tools while also developing abstract thinking skills. Thus, the metaphors they create about AI during this period can shed light on both their cognitive and affective worlds.

This study aims to determine middle school students' perceptions of ChatGPT through metaphors and evaluate these metaphors thematically using content analysis. The primary objective is to deeply examine the meanings attributed to AI by analyzing students' metaphors and to explore how students construct and interpret technology through these meanings. The findings are expected to offer important contributions to the effective use of technology in educational settings, the pedagogical design of digital tools, and understanding students' emotional and cognitive needs.

Methodology

Research Design

This study was conducted to determine middle school students' perceptions of ChatGPT through metaphors. It was designed in a phenomenological pattern, one of the qualitative research methods. Phenomenology allows for an in-depth examination of individuals' experiences, thoughts, and interpretations related to a particular phenomenon. Through this method, the researcher aims to access individuals' subjective worlds and uncover meaning structures based on their experiences. In this study, ChatGPT is considered one of the contemporary digital educational tools, and students' cognitive and affective perceptions toward this tool are revealed through metaphors. Metaphors are powerful expressions that enable individuals to concretize complex and abstract concepts. In this context, the foundation of the study is to explore how students define ChatGPT, which mental images they associate with it, and the reasons behind these associations.

Study Group

The study group consists of 6th, 7th, and 8th-grade students studying in two different public middle schools located in the city center of Diyarbakır during the 2024–2025 academic year spring semester. A total of 90 students participated in the study. The students were selected through criterion sampling, one of the purposeful sampling methods frequently used in qualitative research. In criterion sampling, individuals possessing specific characteristics directly related to the research topic are selected. Accordingly, the primary criterion for inclusion in this study was that all participating students had used ChatGPT at least once and were capable of forming thoughts about that experience. The selection of students from different grades and schools aimed to increase the variety and scope of the collected data.

Data Collection Process

During the data collection process, students were asked to complete the open-ended statement: "ChatGPT is like ... because ..." in a way that would reflect their perceptions of ChatGPT. Open-ended

sentence completion methods are frequently used in metaphor-based research because they allow individuals to express their subjective thoughts, feelings, and experiences without restrictions. Students were informed about the purpose and process of the study, participation was based on voluntariness, and they were encouraged to provide original responses without researcher guidance. The classroom environment was carefully arranged during the application of the forms to ensure that students could respond comfortably and with focus. The collected responses were transferred directly from handwritten forms to digital format and included in the analysis process while preserving their originality.

Data Analysis

The data obtained in this study were analyzed using content analysis, one of the qualitative data analysis techniques. Content analysis is an effective approach that enables the systematic organization, structuring, and interpretation of open-ended data. The analysis process in this study was conducted in four main stages:

1. **Coding Process:** The metaphorical statements completed by the students in the form “ChatGPT is like ... because ...” were examined one by one, and the metaphors contained in each expression were identified. These metaphors were then coded based on their meanings and associations. During coding, both the comparison used by the student and the reasoning provided with “because” were taken into account. This allowed for a deeper evaluation of the underlying conceptual structure.
2. **Theme Formation:** The coded metaphors were grouped based on shared characteristics and categorized into themes. These themes were structured to reflect the different dimensions of students’ perceptions of ChatGPT. The identified themes are: Knowledge and Guidance, Connection and Communication, Emotion and Meaning, Exploration and Journey, and Change and Transformation.
3. **Frequency Identification:** The number of students using each metaphor was determined and presented in tabular format. This stage is important for identifying the most dominant metaphors and highlighting the prevalent themes in students’ perceptions.
4. **Supporting Themes with Student Statements:** Under each theme, sample metaphors and the direct expressions of students who articulated these metaphors were included. This practice not only enhances the transparency of the analysis results but also helps the reader develop a concrete understanding of the themes. It is also considered a significant application for increasing internal validity in qualitative research.
5. Throughout this four-stage analysis process, the researchers ensured consistency among the data using the constant comparison method and established systematic coherence among interpretations. Ethical principles related to qualitative data analysis were observed, and students’ original expressions were faithfully maintained.

Validity and Reliability of the Study

To ensure the reliability of the study, two field experts independently coded the metaphors and assigned them to themes. The coding results created by the experts were compared, and similarities and differences were analyzed. According to the reliability formula proposed by Miles and Huberman (1994) ($\text{Agreement} / (\text{Agreement} + \text{Disagreement}) \times 100$), the inter-rater agreement rate was calculated as 85%. This rate is well above the minimum threshold of 70% generally required in qualitative research and supports the reliability of the analysis. In terms of validity, the data collection tool was directly structured to serve the purpose of the study, student-generated metaphors were supported with examples, and the analysis process was explained in detail. All these measures are considered to enhance both the internal and external validity of the study.

Findings

Frequency and Theme Distribution of Metaphors

This section presents the detailed findings obtained from the analysis of metaphors developed by students about ChatGPT. The metaphors were analyzed using content analysis, grouped based on similarities, and frequencies were calculated based on the identified themes.

Metaphor	Frequency	Theme
Friend	15	Knowledge and Guidance
Guide	12	Knowledge and Guidance
Library	10	Knowledge and Guidance
Lantern	8	Knowledge and Guidance
Lighthouse	2	Knowledge and Guidance
Sage	2	Knowledge and Guidance
Architect	2	Knowledge and Guidance
Bridge	7	Connection and Communication
Network	1	Connection and Communication
Artist	6	Emotion and Meaning
Writer	4	Emotion and Meaning
Star	3	Emotion and Meaning
Psychologist	3	Emotion and Meaning
Conductor	3	Emotion and Meaning
Compass	5	Exploration and Journey
Adventure	5	Exploration and Journey
Atlas	4	Exploration and Journey
Cloud	4	Change and Transformation
Chameleon	1	Change and Transformation

Distribution of Metaphors by Themes

The table below summarizes the distribution of metaphors based on the identified themes.

Theme	Example Metaphors	Total Frequency
Knowledge and Guidance	Friend, Guide, Library, Lantern, Lighthouse, Sage, Architect	51
Connection and Communication	Bridge, Network	8
Emotion and Meaning	Artist, Writer, Star, Psychologist, Conductor	19
Exploration and Journey	Compass, Adventure, Atlas	14
Change and Transformation	Cloud, Chameleon	5

Detailed Explanations of Themes

Knowledge and Guidance

This theme shows that students perceive ChatGPT as a supportive and guiding digital tool in accessing information. ChatGPT plays a significant role in simplifying difficult topics, explaining concepts, and acting as a source during homework.

"ChatGPT is like a library because I can access information on any topic." (S3)

"ChatGPT is like a friend because it guides me when I struggle." (S12)

Connection and Communication

In this theme, students emphasized that ChatGPT is effective in creating connections between concepts and organizing information meaningfully.

"ChatGPT is like a bridge because it connects information." (S45)

"ChatGPT is like a network because it brings information from everywhere." (S38)

Emotion and Meaning

Here, students depicted ChatGPT not only as an academic assistant but also as an emotional support. It was described as a storyteller and a companion who understands them.

"ChatGPT is like an artist because it reflects my emotions with words." (S22)

"ChatGPT is like a writer because it helps me pour out my thoughts." (S31)

Exploration and Journey

For students, ChatGPT is a journey companion that opens a new door of learning with every question. It turns learning into an exploration.

"ChatGPT is like a compass because it helps me find my direction." (S50)

"ChatGPT is like an adventure because I discover new information with every question." (S33)

Change and Transformation

This theme reveals that students see ChatGPT as flexible and adaptive rather than fixed. Its varied responses show it can meet individual learning needs.

"ChatGPT is like a cloud because it constantly changes and renews." (S60)

"ChatGPT is like a chameleon because it adapts to every question." (S78)

Discussion and Conclusion

This study aimed to reveal middle school students' metaphorical perceptions of ChatGPT and to understand the reflections of technological tools in their cognitive and emotional worlds. According to the findings, students perceive ChatGPT not only as a source of information but also as a guide, companion, meaning-maker, and contributor to creative processes. This indicates that the roles assigned to technological tools extend beyond functionality and possess emotional and symbolic representations as well.

Most of the metaphors developed by the students indicate that ChatGPT has a guiding, informative, and supportive structure. Especially metaphors like "guide," "friend," "library," and "lantern" show that students position this tool as a reliable source of knowledge and a problem-solving assistant. This aligns with the constructivist learning theory emphasized by Bransford, Brown, and Cocking (2000), which highlights active student participation, research, and personalized access to knowledge.

Moreover, students' use of metaphors such as "writer," "artist," and "psychologist" with emotional content shows that artificial intelligence applications provide not only cognitive but also emotional support. This finding indicates that students' relationships with technological tools are multidimensional and that they evaluate technology not only as a functional instrument but also within an emotional context. The study by Patel and Kumar (2022) similarly found that students described ChatGPT with contrasting but meaningful metaphors such as "deceptive friend" and "trustworthy companion," suggesting that this relational understanding is observed internationally as well.

Other metaphors in the study, such as "cloud," "chameleon," and "compass," show that students view ChatGPT as a continuously evolving, adaptive, and guiding tool. These metaphors reveal that students perceive technology not as a static system but as a dynamic structure that evolves alongside the learning process and meets individual needs.

When the research findings are compared with national and international literature, it is evident that natural language processing-based AI tools like ChatGPT occupy a significant place in students' perceptions and are grounded in strong cognitive and emotional foundations. While studies such as Yildirim (2022) and Demir and Altun (2021) revealed metaphors related to distance education and digital learning systems that pointed to difficulties, loneliness, or detachment, the metaphors generated in this study indicate a more positive, participatory, and learning-centered perception.

One of the unique contributions of this study is the richness of metaphorical perceptions regarding technology among middle school students in terms of both variety and depth. Considering the developmental characteristics of students, their ability to abstract concepts begins to develop at this age, and thus their ability to make sense through metaphors strengthens. This enhances the value of the research in offering both theoretical and practical insights for educators.

Based on the data obtained from this research, several suggestions can be made for educational practices. First, considering student perceptions when integrating AI tools into educational processes can increase the effective usability of these tools. Metaphorical perceptions can serve as valuable data in designing instructional materials and content according to student needs. Furthermore, teacher education programs should include pedagogical content that allows AI applications to be evaluated not only in cognitive but also in emotional dimensions.

In conclusion, this study, by revealing how ChatGPT is perceived by middle school students through metaphorical expressions, emphasizes the necessity of evaluating AI tools in education with a student-centered approach. It is clear that ChatGPT represents more than a source of information in the eyes of students—it is a guide, a companion, an emotional outlet, and a supporter of learning processes. This perspective shows that future educational policies should be grounded on more holistic, ethical, and pedagogically sound foundations for AI-based applications.

References

- Anderson, L. W., & Krathwohl, D. R. (2001). *A taxonomy for learning, teaching, and assessing: A revision of Bloom's taxonomy of educational objectives*. Longman.
- Bransford, J. D., Brown, A. L., & Cocking, R. R. (2000). *How people learn: Brain, mind, experience, and school*. National Academy Press.
- Brookhart, S. M. (2010). *How to assess higher-order thinking skills in your classroom*. ASCD.
- Celik, B., & Yilmaz, H. (2020). Primary school students' metaphorical perceptions of tablet use. *Educational Technology Theory and Practice*, 10(2), 120–138.
- Demir, M., & Altun, S. (2021). Pre-service teachers' metaphorical perceptions of e-learning. *Electronic Journal of Social Sciences*, 20(78), 845–861.
- Lakoff, G., & Johnson, M. (2003). *Metaphors we live by*. University of Chicago Press.
- Liu, Y., Zhang, H., Chen, L., & Wang, X. (2023). High school students' metaphors of AI: A study on ChatGPT perceptions in China. *International Journal of Educational Technology in Higher Education*, 20(1), 55–72.
- Patel, R., & Kumar, A. (2022). Students' metaphors about ChatGPT: Understanding perceptions of AI in higher education. *Journal of Educational Computing Research*, 60(5), 987–1005.
- Saban, A. (2008). Metaphors about school. *Educational Administration: Theory and Practice*, 55(55), 459–496.
- Yildirim, R. (2022). Student metaphors related to distance education. *Journal of Qualitative Research in Education*, 10(2), 179–198.