Social studies teacher candidates' metaphors towards e-books and printed books

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Abstract

The integration of technology in educational settings has brought electronic books or e-books to the forefront alongside traditional printed texts. This study examines the metaphorical perceptions of social studies teacher candidates towards printed books and e-books. This study employs a qualitative model to investigate the metaphorical perceptions of social studies teacher candidates. Phenomenology design was used to determine the perceptions of prospective teachers towards printed books and e-books. The study sample comprises 73 students, 48 female and 25 male, enrolled in the 1st through 4th grades at a state university. Initially, the prospective teachers were provided with a succinct overview of the concept of metaphor, including its definition and the process of its formulation. Subsequently, each participant received a worksheet designed to facilitate the creation of their own metaphors. Following the collection of data, any invalid metaphors were systematically removed, and the remaining data were subsequently transferred into a digital format for analysis. This expert evaluation enabled the calculation of the research's reliability by assessing consensus and disagreement rates, following the methodology proposed by Miles and Huberman (1994). Specifically, reliability was quantified using the formula: [Consensus/(Consensus + Disagreement)] × 100. The findings indicate that social studies teacher candidates exhibit a pronounced preference for printed books, a tendency likely rooted in their extensive use of printed materials throughout their educational journeys.

Keywords: E-books, printed books, social studies teacher candidates, metaphors.

Introduction

Technology represents a vital development that shapes the era in which humans exist. This development either introduces innovations pertinent to its time or enhances existing functionalities (Avcı, 2020). People today are progressively replacing every product and service in their living spaces with digital alternatives (Odabaş, Odabaş, & Binici, 2019, p. 91). Technological innovations have also provided users with numerous options (Kır, 2019). As a result of these innovations, technology has become an integral part of our lives (Uyar, 2021). One of the most significant advancements in technology is digital technology. Digital technologies are functionally employed in education through the interactive and non-interactive multimedia they provide to users (Çoban, 2021; Gökçe, 2023). Integrating education with technology makes a significant contribution to the learning and teaching process (Ertem, 2016). The learning and teaching process must be well-planned (Demirbaş, Eranıl, 2023). Consequently, the learning-teaching process can achieve greater success in attaining target behaviours. The expression form of the digital environment is primarily grounded in visualization techniques (Oğur, 2024, p.234).

Utilising a digital environment in the learning-teaching process helps capture students' attention more effectively. Simultaneously, technology empowers students to progress at their own pace (Yıldırım, 2023). Moreover, digital technologies offer numerous advantages for evaluating education (Solak, Ütebay, Yalçın, 2020). According to research conducted by TÜİK (Turkish Statistical Institute) (2024), the percentage of learning activities conducted online is 13.9%. The integration of technology into all aspects of our lives, including education, has highlighted the necessity of raising students' awareness of digitalisation and protecting them from digital risks (Gökçe & Bayındır, 2023). The statement "The aim is to utilise information technologies effectively in learning and research processes while fostering awareness of security and privacy in digital environments" is included in the basic approach and specific objectives section of the MEB (The Ministry of National Education) (2024) program.

Digital technologies have necessitated the acquisition of a diverse range of skills and behaviours (Odabaş & Sevmez, 2018). Among the critical competencies identified for the 21st century, literacy skills such as media literacy and technology literacy play a pivotal role (Uzun, 2017). Social studies is a curriculum that aims to provide citizenship skills based on social science disciplines. An analysis of the 2024 social studies curriculum reveals that digital literacy is explicitly integrated as a foundational literacy skill across various learning domains, targeting students in grades 4 through 7. Moreover, the curriculum incorporates a variety of innovative learning and teaching practices, including 3D art projects, virtual museum tours, the creation of digital narratives, digital poster design, the use of virtual boards, and the development of various interactive activities within online environments. Additionally, a comprehensive content framework addressing security protocols in digital contexts has been established to ensure student safety and responsible usage of technology.

The integration of technology in educational settings has brought electronic books, or e-books, to the forefront alongside traditional printed texts. The advent of the printing press facilitated widespread access to printed materials; however, the rapid evolution of technology has significantly enhanced the accessibility of e-books, allowing users to access content regardless of time or location. According to Soydan (2012), a digital copy of a book or content written directly for an electronic environment is called an e-book (p. 391). Both printed and electronic books have gained considerable popularity within educational environments. While printed books have a tangible physical form, e-books offer the distinct advantage of being available at any time and from virtually anywhere. Furthermore, e-books often present a more cost-effective option compared to their printed counterparts. In the digital world, it is essential to consider the technology aspects that social studies teacher candidates utilise in their daily lives. This study examines the metaphorical perceptions of social studies teacher candidates towards printed books and e-books.

Research questions sought to be answered in this study are as follows:

1. What are the perceptions of social studies teacher candidates towards e-books?
2. What are the perceptions of social studies teacher candidates towards printed books?

Method

Design and participants

This study employs qualitative model to investigate the metaphorical perceptions of social

studies teacher candidates regarding printed books and e-books. The qualitative model is particularly effective in exploring and understanding social phenomena within their contextual environments, drawing insights to inform theoretical frameworks (Yıldırım & Şimşek, 2013, p. 45). Specifically, a phenomenological design is utilised to uncover the lived experiences of teacher candidates in relation to both printed and electronic texts. The phenomenological approach aims to elucidate the subjective experiences of individuals regarding a particular phenomenon (Ceylan Çapar, 2022, p. 297). The study sample comprises 73 students—48 female and 25 male—who are enrolled in the 1st through 4th grades at a state university. The study group comprises participants of different genders, ages, socio-economic statuses, and class levels. Participants were selected using maximum variation sampling, a method that involves the inclusion of individuals from diverse socioeconomic backgrounds and varied demographic characteristics, such as age and gender (Baltaci, 2018).

Table 1 Number of social studies teacher candidates by grade level

	1	24
	2	18
Grade	3	15
	4	15
	Total	73

Data collection tool and data collection

Initially, the prospective teachers were provided with a succinct overview of the concept of metaphor, including its definition and the process of its formulation. Subsequently, each participant received a worksheet designed to facilitate the creation of their own metaphors. The worksheet contained the prompts: "The printed book is like .... because .... and the e-book is like,.................... because ....". Following a 30-minute brainstorming session, the completed worksheets, containing the metaphors developed by the prospective teachers, were collected for further analysis.

Data analysis

Following the collection of data, any invalid metaphors were systematically removed, and the remaining data were subsequently transferred into a digital format for analysis. The metaphor template developed by Saban (2008) served as the framework for this analytical process. The analysis was conducted according to a series of defined steps, in accordance with the guidelines established by this template.

Coding and elimination: The metaphors collected from the prospective teachers were eliminated from those that were not valid. A separate code was created for each metaphor paper.

Category development: Categories were developed for the obtained metaphors.

Validity and reliability: An expert evaluation was conducted to assess the categories. At the same time, some of the statements of the teacher candidates were presented as examples.

Presentation of category and metaphor distributions: The metaphors used by female and male prospective teachers for printed books and e-books were assessed separately based on the established categories.

Validity and reliability

To enhance the validity and reliability of the research, an expert opinion was solicited. Opinion was taken from an expert in the field of social studies education. This expert evaluation enabled the calculation of the research's reliability by assessing consensus and disagreement rates, following the methodology proposed by Miles and Huberman (1994). Specifically, reliability was quantified using the formula: [Consensus/(Consensus + Disagreement)] × 100. The subsequent assessment conducted by both the expert and the researcher resulted in a commendable reliability level of 90% across the evaluated categories.

Findings

This section explains the metaphors that social studies teacher candidates use towards printed books and e-books in various categories.

Table 2 Metaphorical perceptions of social studies teacher candidates towards printed books

Category	Metaphor	Female (f)	Male (f)	Total
Continuous	Word/Statement		1	1
	Pocket Library	1		1
	Sibling	1		1
	Friend	1		1
Aesthetic	Tree	1		1
	Letter		2	2
	Woven Product		1	1
	Historical Artifact		1	1
	Flower	1	1	2
Concrete	Organ		1	1
	Human	2	1	3
	Tree		1	1
	Trace	1		1
	Oak Tree		1	1
	Museum	1		1
	Shopping Centre	1	1	2
	World		1	1
	Emotion	1		1
	Nature	1		1
	Human	1		1
	Life	1		1
	Movie		1	1
Belonging Valuable	Lamp		1	1
	Plane Tree		1	1
	Friend		1	1
	Mother's Cake	1		1
	Hidden Treasure	2		2
	Home	1		1
Repository	Library	1	1	2
	World		1	1
	Chest	1		1
Guide	Teacher	2	1	3
	Lamp		1	1
	Guide	2	2	4
	Sun	1		1
	Scientist	1	1	2
Pleasant	Tree		1	1
	Summer		1	1
	Nature	1		1
	Therapy	1		1
Relaxing	Oxygen	1		1
	Hospital	1		1

Empathy	Mirror	1		1
Mixed	Washing Machine	1		1
İnnovation	Key	1		1
	Journey	1		1
	Door	1		1
	Bicycle	1		1
Accessible	Computer	1		1
	Time	1		1
	Home	1		1
Permanent	Clay Tablet	1		1
	Historical Artifact		1	1
	Trace		1	1
Reality	Mirror		1	1
Diversity	Refrigerator	1		1
	Pomegranate	1		1
	Rainbow	1		1
Total			55	

When examining the metaphors created by teacher candidates regarding printed books, it is observed that they have produced 55 valid metaphors. These metaphors are organized into several categories: continuous, aesthetic, concrete, belonging, valuable, repository, guide, enjoyable, comforting, empathy, mixed, innovation, accessible, permanent, reality, and variety. The most significant number of metaphors is found in the concrete category, which contains a total of 15 metaphors. When analysing the distribution of metaphors by gender, it is noted that females contributed the most metaphors to the concrete category (9 metaphors). At the same time, males also had their highest count in the same category, with six metaphors.

Below are some of the statements made by social studies teacher candidates regarding the printed book.

A1 "It is similar to a hospital, addressing the gaps in our knowledge and enhancing *our* understanding in various subjects."

A34 "It is similar to a bicycle. Because as you pedal the bicycle, *you* progress, and as you turn the pages of the book, you progress"

A42 "I compare it to clay tablets. Because it is permanent and can be passed down from generation to generation"

A53 "It is similar to a mirror. Because you can find yourself or traces of your own life in the book"

A70 "It is similar to a hidden treasure. Because we gain knowledge as we read"

A66 "It is similar to an oak tree. Because it defies time, because it is solid and deep-rooted"

A57 "It is like a guide. Because it shows people the way"

Table 3 Metaphorical perceptions of social studies teacher candidates towards e-books

Category	Metaphor	Female (f)	Male (f)	Total
Accessible	Helpful		1	1
	Tree		1	1
	Phone	2	1	3
	Car		1	1
	Short Way		1	1
	Bag		1	1
	Sibling		1	1
	Technology		1	1
	Digital Library	6	3	9
	Pocket Dictionary		1	1
	Breath	1		1

	Google	1		1
Artificial	Organ		1	1
	Artificial İntelligence	1	1	2
İnanimate	Winter Season		1	1
	Study Note	1		1
	Prison	1		1
	Free Time	1		1
	Cold House	1		1
İnfinite	Profound		1	1
	Ocean		1	1
	Endless		1	1
	Unlimited	1		1
Abstract	Soul		1	1
	Digital	1		1
	Distant City	1		1
	Dream	1		1
	İmagination	1		1
Opportunity	Moon		1	1
Need/Necessity	Water	1		1
Diversity	Ashura/ Noah's Pudding		1	1
	Market	1		1
Valuable	Treasure		1	1
Aesthetic	Glass	1		1
Speed	Cheetah	1		1
Changing	Garden	1		1
	Light		1	1
Extinction	Internet Network	1		1
	Fair-Weather Friend	1		1
	Flash Memory	1		1
	Friend	1		1
	Food	2		2
Damage	Ray	1		1
Guide	Moon	1		1
Total				56

Upon examining the metaphors employed by teacher candidates in relation to e-books, a total of 56 valid metaphors were identified and categorised. These categories include accessible, artificial, inanimate, infinite, abstract, opportunity, need, variety, valuable, aesthetic, speed, changing, extinction, damage, and guide. Notably, the category of "accessible" emerged as the most frequently represented, with a total of 22 instances (f.22). A gender-based analysis reveals that both female and male candidates predominantly associated e-books with this category, with 10 instances (f.10) among females and 12 instances (f.12) among males.

Below are some of the statements made by social studies teacher candidates regarding the e-book.

A44 "It is like breathing. 8ecause we can easily access it from anywhere, anytime"

A47 "It is like a distant city. Because it does not give the feeling of reading when it is not touched"

A56 "It is like a library. Because we can access all kinds of books"

A69 "It is like a cheetah. Because we can access information in the fastest way"

A54 "It is like Ashura/ Noah's pudding. Because each page has a different taste."

A49 "It is like technology. It allows people to access information in a short way"

A21 "It is like a bag. Because it is always with us"

A6 "It is like a telephone. Because it can be reached at any time".

A23 "It is like friendship. Because it is only with us at certain times"

Discussion, conclusion, and recommendations

The research aimed to analyze the metaphorical perceptions of social studies teacher candidates regarding e-books and printed books. The metaphors created by the teacher candidates for e-books and printed books were organized into specific categories.

The metaphors employed by teacher candidates to describe printed books predominantly fell within the concrete category for both females and males. The metaphors identified include: organ, human, tree, trace, oak tree, museum, repository, world, emotion, nature, life, and film. These findings suggest that the teacher candidates perceive printed books as tangible objects. Furthermore, the metaphors were primarily organized into the categories of aesthetic, valuable, and guide. This indicates that the teacher candidates regard printed books as aesthetically pleasing and valuable artifacts. Additionally, the prevalence of metaphors within the guide category suggests that they view printed books as mentoring tools. Other notable categories in which metaphors were frequently categorized include permanent, enjoyable, and innovative. Teacher candidates expressed that printed books are enduring, pleasurable, and reflective of innovation. Moreover, metaphors were found across categories such as repository, accessibility, permanence, and diversity, where teacher candidates articulated that printed books function as information repositories, are easily accessible, enduring, and diverse. Further metaphors from the prospective teachers were categorized as comforting, empathetic, permanent, and reflective of reality, indicating their perception of printed books as sources of comfort, enduring entities, and vehicles for empathy and self-reflection.

The metaphors created by the teacher candidates to describe e-books were predominantly categorized as being most accessible to both females and males. These metaphors include: helpful, tree, telephone, car, short way, bag, sibling, technology, digital library, pocket dictionary, breath, and Google. Based on these results, the teacher candidates perceived e-books as easily accessible. Furthermore, it was observed that the metaphors predominantly fell into categories described as inanimate, abstract, and extinction. Consequently, the teacher candidates conveyed that they regarded e-books as both inanimate and abstract. Additionally, the other category in which they generated the most metaphors pertained to the notion of extinction. In summary, it can be inferred that the teacher candidates hold the belief that e-books possess the potential to easily vanish.

The metaphors generated by prospective teachers regarding e-books predominantly clustered in several thematic categories, notably those of infinity and artificiality. Participants expressed the notion that e-books possess an infinite quality and are inherently artificial in nature. The second most frequently referenced categories were variety and changeability, with prospective teachers characterizing e-books as diverse tools with dynamic attributes. Additionally, metaphors emerged within categories such as opportunity, need (necessity), valuable, aesthetics, speed, damage, and guidance. These responses indicate that prospective teachers recognized e-books as a valuable resource that offers opportunities for access to information. Furthermore, they emphasized the necessity of e-books, highlighting their perceived value and aesthetic qualities. Many respondents articulated that e-books facilitate faster access to information and serve as helpful guides in the learning process. Conversely, some prospective teachers also attributed negative connotations to e-books, identifying potential damages associated with their use. Ulu (2017) identified categories such as multi-layeredness, information repository, accessibility,

portability, economic advantage, and health considerations in relation to e-books.

The findings indicate that social studies teacher candidates exhibit a pronounced preference for printed books, a tendency likely rooted in their extensive use of printed materials throughout their educational journeys. Elkatmış (2021) conducted a study revealing that university students demonstrate a strong inclination towards printed books, with e-books receiving comparatively less acceptance primarily due to health-related concerns. This suggests that teacher candidates possess a limited familiarity with e-books, which may contribute to their reluctance to embrace this format. Further insights from Özer and Türel (2015) highlighted the dual nature of teacher candidates' perceptions of e-books, as they articulated both positive and negative metaphors. Complementing this, the research by Çelik, Halat, and Fırat (2019) underscored the limited knowledge of teacher candidates regarding e-books, reinforcing the preference for printed books. Additionally, Sarıkaya (2018) found that Turkish teacher candidates exhibited mixed views toward both printed materials and e-books, echoing the complexity of their attitudes toward these reading formats.

Students' use of e-books can enhance their learning and teaching (Appleton, 2004). In addition to this, e-books provide positive contributions to students both psychologically and physically, as well as educationally (Embong, Noor, Hashim, Ali, Shaari, 2012). The fact that e-books are low-cost and accessible is an advantage for students (Woody, Daniel, Baker, 2010). The fact that e-books are easily accessible and cheap has not yet made them fully preferred (Smith, Kukulska Hulme, 2012).

Based on the results of the research, the following points can be suggested:

- Social studies teacher candidates should be provided with e-books that they can use free of charge during their undergraduate education.
- To effectively adapt to technology in the developing and changing world, teacher candidates can be encouraged to use e-books more.
- In a world where resources are dwindling at an alarming rate, projects can be developed with teacher candidates on the importance of using e-books instead of printed books focusing on sustainability and cost savings.

Statement of researchers

In this section, you are expected to declare the information regarding the titles given below.

Researchers' contribution rate statement

The aoutors contributed to the study.

Conflict statement

The authors declare no potential conflicts of interest

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