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Examining the Use of Dictionaries in Mother Tongue Education: A Study of Trends at the K-12 Level

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The objective of this research is to systematically evaluate the effects of dictionary use in native language teaching at the K-12 level, based on research trends. In this study, the principles of the PRISMA protocol were used as the methodology. In this study, a systematic analysis was conducted using the PRISMA checklist to determine the relationship between native language education and dictionary use. Conducted in accordance with PRISMA protocols, the study involved a detailed analysis of 15 research articles that met predetermined criteria, identified through comprehensive searches of the Web of Science, Scopus, ERIC, and EBSCO academic databases. The findings indicated substantial disparities in dictionary utilization practices across diverse educational levels. At the primary school level, traditional printed dictionaries are used to develop fundamental vocabulary and teach proper spelling conventions. At the middle school level, emphasis is placed on enriching vocabulary and enhancing text comprehension through technology-based digital platforms. At the high school level, studies that prioritize the cultivation of academic language proficiency and phonological awareness employ advanced online resources and multifaceted dictionary tools. The methodological diversity observed in the research examined indicates the comprehensive nature of scientific studies in the field of dictionary use. The findings of this study underscore the pivotal role of educators in facilitating language acquisition by judiciously implementing systematic dictionary-use techniques across diverse educational strata.

Introduction

The role of dictionaries in language education

In the context of native language education, words constitute the primary tools of learning. They are also considered the fundamental building blocks of language. In language education, comprehension is inextricably linked to existing vocabulary. The effective use of comprehension skills is reflected in expressive language skills. This suggests that existing

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vocabulary significantly impacts individuals' comprehension and expression abilities. Moreover, reading comprehension is fundamental to academic success across all subjects. Numerous studies have demonstrated a positive relationship between students' vocabulary and academic success (Masrai & Milton, 2021; Milton & Treffers-Daller, 2013; Nagy, 2009; Schmitt, 2014). A rich vocabulary is one of the important factors contributing to students' academic success (Biemiller & Boote, 2006; Bornstein & Haynes, 1998). Vocabulary development is an essential component of education, as it is fundamental for the effective communication of ideas through reading, speaking, and writing. Learning across all subjects relies on comprehension. Students' comprehension skills depend largely on the breadth of their vocabulary. Enhancing vocabulary is essential for promoting linguistic and cognitive development and achieving effective communication (Maden, 2020). Various tools have been developed to improve vocabulary. Dictionaries play a particularly important role in this context. Dictionaries help readers identify and understand unfamiliar words in any given text, thereby supporting comprehension (Brinchmann & Braeken, 2026).

Various strategies are used to support vocabulary acquisition. Dictionary use is one of the fundamental strategies in this regard (Nation & Meara, 2010). Using a dictionary provides students with a valuable resource when they need to determine the precise meaning or correct spelling of a word. Consequently, students can engage in independent vocabulary learning beyond the classroom (Gairns & Redman, 1986). One study found that as the density of unknown words decreased, readers' ability to understand written text increased (Kremmel et al., 2023). Dictionary use is one of the primary means to reduce the number of unfamiliar words and enrich vocabulary.

Using a dictionary at the K-12 level

Each era presents its own educational demands. Keeping pace with contemporary developments requires acquiring the necessary skills. Competent use of one's native language is essential for acquiring 21st-century competencies demanded by the modern world. As a fundamental component of human consciousness, the native language, plays a central role in shaping an individual's thought system (Cüceloğlu, 2016; Vygotsky, 1998). Education is one of the primary domains in which these demands are reflected. K-12 refers to 12 years of continuous formal education, starting from kindergarten and continuing until the final year of high school. The K–12 system aims to progressively develop students' knowledge and while supporting their development across multiple domains. The K–12 years constitute a pivotal period for native language education, during which the foundations for comprehension and expression skills are established. The knowledge acquired during this period provides a foundation for subsequent stages of education. Furthermore, research consistently shows that native language proficiency is fundamental to communication and learning (Sakarya Erkek & Duru, 2024). A close relationship exists between native language education and the utilization of dictionaries. Dictionary use has been shown to significantly influence students' comprehension and expression skills in multiple ways. The use of dictionaries has been shown to positively influence students' reading comprehension, while also supporting accurate spelling and pronunciation.

Literature review

The contemporary era is often described as the ‘age of technology’. This technological era has brought significant changes in the domain of education. Prior to the advent of the internet, which has become ubiquitous in recent years, students relied on printed dictionaries for their language-related needs. The advent of widespread internet access has precipitated the

integration of digital dictionaries into educational settings. Furthermore, studies are being conducted to examine the impact of using both printed and digital dictionaries on reading comprehension outcomes. Several studies have demonstrated a positive relationship between dictionary use and vocabulary development (Qian, 2002; Nation, 2001; Anderson, 2000). Summers (1988) found that dictionary use significantly improved comprehension and production processes compared with not using dictionaries. Several studies have examined the advantages and disadvantages of both printed and electronic dictionaries. Hunt (2009) argues that students achieve more durable vocabulary learning when using printed dictionaries to learn vocabulary. In his 1994 study on reading comprehension, Knight demonstrated that the group that utilized dictionaries performed better than the group that did not.

Both printed and electronic dictionaries, has been shown to enhance incidental vocabulary acquisition during reading. As students cultivate the habit of using dictionaries, they can progressively enhance their capacity to comprehend and interpret linguistically complex texts. The use of a dictionary is particularly beneficial for students who encounter challenges with reading comprehension (Cain & Oakhill, 2006). Amirian and Heshmatifar's (2013) research examined the effect of electronic dictionary use on vocabulary learning at the high school level. The study found that electronic dictionaries were more beneficial than printed dictionaries in this regard. Students reported that both types of dictionaries have their own advantages and disadvantages. Students perceived that electronic dictionaries are more efficient.

Numerous studies in the literature have examined the use of dictionaries in native language education at the K-12 level. These studies have primarily focused on the effects of dictionary use on comprehension skills. Several studies have also examined students' opinions on dictionary use. Dictionary use has been demonstrated to facilitate vocabulary acquisition, as evidenced by extant research. However, some studies have reported that dictionary use does not significantly affect on vocabulary learning. Brinchmann et al. (2026) research, which compared the reading comprehension skills of fifth-grade students, found that dictionary use did not have a significant impact on students' text comprehension. In a study involving students in Grades 5–8, Goodwin et al. (2020) found that dictionary use did not significantly improve students' reading comprehension. In contrast, other studies have shown that dictionary use enhances comprehension skills. Fry and Gosky (2007) found that dictionary use among sixth- to eighth-grade students significantly affected their comprehension of texts. In a study examining seventh-grade students' perceptions on electronic dictionaries, Dağtaş (2014) concluded that many students found electronic dictionaries easy to use, faster, and offering a broader vocabulary; while printed dictionaries were time-consuming, had a smaller vocabulary, and made locating words more difficult.

Research gap

Despite the importance of dictionary use in mother tongue education, where it plays a fundamental role in developing linguistic competence and vocabulary, there is a lack of systematic studies that comprehensively examining the integration of printed and digital dictionary-use strategies into curriculum implementation at the K-12 level. Dictionary use in mother tongue education is undergoing a significant transformation from traditional approaches to technology-supported learning tools in response to ongoing digital transformation. Although existing research has focused on a specific educational level, there is a lack of comprehensive evaluations of the K-12 system as a whole. This study aims to address this gap in the literature by systematically examining the effects of dictionary use at

the kindergarten, primary, secondary, and high school levels. The present study aims to provide educators and researchers with a comprehensive perspective on the role of dictionaries as strategic learning tools in mother tongue education.

Research objective and questions

This study aims to examine the use of dictionaries in mother tongue instruction at the K-12 level comprehensively. Accordingly, the study aims to analyse the current state of published studies on dictionary use in mother tongue education at the K-12 level and the research trends in this area. To achieve this objective, the review addressed the following sub-problems:

(1) What are the methodological characteristics and main objectives of research focusing on dictionary use in mother tongue education at the K-12 level?
(2) What is the distribution of studies examining the relationship between mother tongue education and dictionary use according to their authors?
(3) What is the distribution of studies examining the relationship between mother tongue education and dictionary use according to the K-12 grade level?
(4) What is the distribution of studies examining the relationship between mother tongue education and dictionary use according to their study location?
(5) What is the distribution of studies examining the relationship between mother tongue education and dictionary use according to the journals in which they are published?

Materials and Methods

This study presents a systematic analysis of the use of dictionaries in mother tongue education. A systematic review involves identifying, reviewing, and synthesizing the most relevant studies to answer a specific research question (Kraus et al., 2020). The studies examined in this research focus on research articles focusing on mother tongue education at the K-12 level. The objective of the study was to examine research on dictionary use in mother tongue education across the K–12 level. The methodology followed, the PRISMA Checklist steps were followed sequentially. The PRISMA framework guided the research process, including the identification, screening, eligibility assessment of the selected studies, culminating in their inclusion. This approach enhanced the methodological rigor and transparency of the review.

The process of extracting and synthesizing data from the selected studies was conducted using the PRISMA checklist to minimize errors and ensure data integrity. Two researchers independently extracted data from the articles. The data extracted by the two researchers were then compared at the conclusion of the process. Inconsistencies identified during the comparison of the studies were resolved by returning to the original articles and reaching consensus through discussion.

In the present study, a formal risk-of-bias assessment tool was not used. However, the inclusion and exclusion criteria were clearly defined in accordance with the PRISMA 2020 guidelines, and the screening and decision-making processes were carried out by two independent reviewers. The initial search yielded 194 records. After full-text screening, 15 studies met the inclusion criteria. The review was limited to studies published in English or Turkish, and duplicate records were removed.

Search strategy

No restrictions were placed on the publication year of the studies included in the review. This study aimed to analyze published research articles to identify research trends. The systematic review included articles indexed in Web of Science, Scopus, EBSCO, and the Education Resources Information Center (ERIC) databases. Only articles published in English were included. A comprehensive search strategy was implemented across the selected databases, using a combination of keywords to identify relevant sources. The search strategy included the following keywords: ("Mother Tongue Education" OR "Mother Tongue Teaching") AND ("Dictionary Use" OR "Dictionary Usage") AND ("Kindergarten" OR "Middle School" OR "High School").

Eligibility criteria

The inclusion and exclusion criteria used in this systematic review were established in accordance with the PRISMA 2020 Statement. The inclusion and exclusion criteria are presented in Table 1 below:

Table 1. Inclusion and Exclusion Criteria

Features	Inclusion Criteria	Exclusion Criteria
Participants	The research comprised studies with participants in the K-12 age group.	Studies whose participants are outside the K-12 age group.
Context	The studies under scrutiny focus on K-12 education. This framework also encompasses studies that examine the relationship between dictionary use and mother tongue education.	Studies that do not examine the relationship between dictionary use and mother tongue education in K-12 education
Study Design	Original articles, qualitative studies, quantitative studies, mixed methods studies	Book chapters, systematic reviews, reports
Language of the Study	English, Turkish	English, languages other than Turkish

Search and selection process

A comprehensive search was conducted across EBSCO, Web of Science, Scopus, and the Education Resources Information Center (ERIC) databases was conducted. The initial search was conducted on 20 February 2026, and and updated on 21 April 2026. The initial search identified 2,463 records. Two independent reviewers conducted the screening process to minimize selection bias. The reviewers screened the titles and abstracts against the predefined inclusion and exclusion criteria and excluded records that did not meet the eligibility criteria. Following title and abstract screening, the full texts of the studies deemed suitable were independently reviewed by both researchers. Any disagreements were resolved through discussion until consensus was reached. Articles published in English and Turkish were eligible for inclusion, and duplicate records were removed. After applying the exclusion criteria, 15 studies met the inclusion criteria and were included in the final review.

Study flow

Figure 1 presents the PRISMA flow diagram illustrating the study selection process for the systematic review.

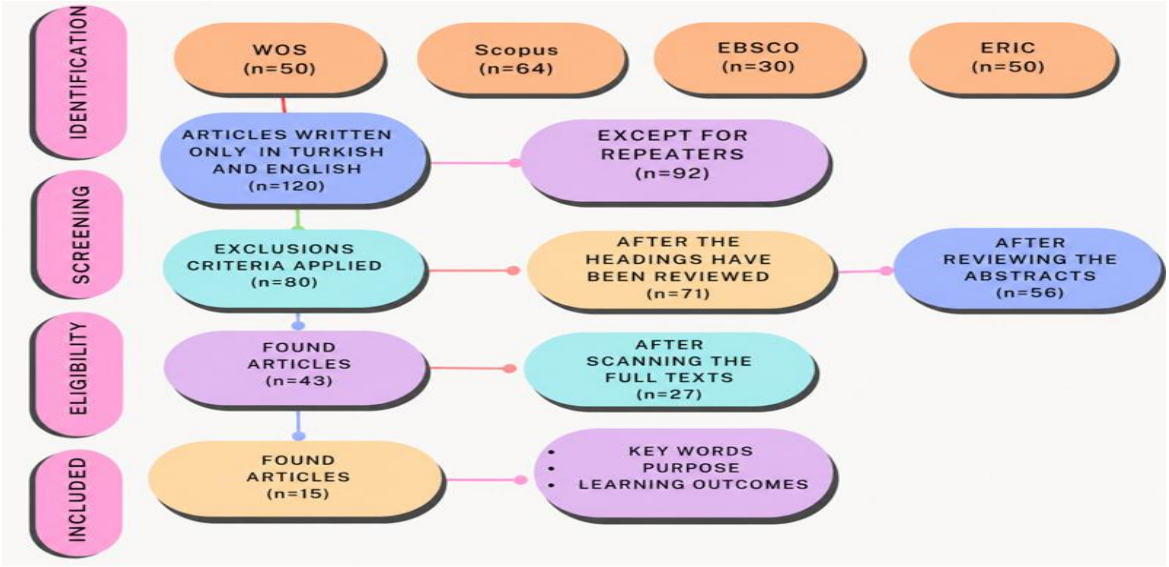


Figure 1. Flowchart

As shown in Figure 1, five databases were searched. The initial search, conducted without applying filters, yielded 194 records. Studies published in languages other than Turkish or English, and duplicate records, were excluded from the analysis. Studies that did not meet the predefined eligibility criteria based on their titles, abstracts, or full texts was also excluded from the study. Following the screening and eligibility assessment to ensure compliance with the inclusion and exclusion criteria, 15 studies met the inclusion criteria and were included in the systematic review.

Analysis

The following steps were followed during the analysis of the studies included in this systematic review. Each article was carefully analysed using predetermined criteria. The predetermined criteria guided the researchers' analytical process, and the reviews were conducted accordingly. Particular attention was paid to the extent to which each study aligned with its stated objectives. The reviewers conducted their analyses independently, and any discrepancies were resolved through subsequent consensus meetings. These meetings enhanced the consistency and credibility of the analysis by providing a framework for systematic assessment.

This review adopted a qualitative approach. No quantitative synthesis was performed. The selected articles were analyzed using qualitative textual analysis. The findings were then interpreted through semantic analysis with particular attention to the aims, methodologies, and findings of the included studies. Accordingly, this review adopts a holistic qualitative perspective rather than a quantitative synthesis of the evidence.

Validity and reliability

To ensure the validity and reliability of this study, several protocols were followed. Consequently, an unbiased systematic analysis process was implemented.

Validity

To ensure the study's validity, inclusion and exclusion criteria were established based on the eligibility criteria outlined in the PRISMA Checklist. The predefined criteria defined

the scope of the review. Eligibility criteria were applied consistently to minimize selection bias. As shown in Figure 5, the flowchart clearly indicates the information sources and search strategies used in the study.

Reliability

The steps followed in the PRISMA protocol are clearly delineated, ensuring that other researchers can obtain similar results by following the same sequence. The process is described step by step detail in the flowchart given in Figure 1.

The reliability of the data is supported by the fact that it was obtained from Web of Science, Scopus, EBSCO, and the Education Resources Information Center (ERIC), which are established academic databases widely used academic databases. In addition, The reliability of the review is further supported by the systematic analytical procedure, as outlined by Donthu et al. (2021). This procedure is designed to define the purpose and scope of the analysis, select the techniques to be used, collect the necessary data, conduct the analysis, and report the results.

Results

Articles are categorized by author, title, year, and level

Table 2. Descriptive record of articles 1

Author/Authors	Title	Year	K-12 Level
Goodwin et al.	Digital Versus Paper Reading Processes and Links to Comprehension for Middle School Students	2020	Middle School
Mlotshwa et al.	The Effect of The Use of Online Dictionaries on Reading Accuracy: Case of Grade 10 English First Additional Language Learners at Dendron Secondary School	2021	High School
Maden	The Effect of Using an Electronic Visual Dictionary on the Secondary School Students' Vocabulary Teaching Achievement	2020	Middle School
Beech	Using A Dictionary: Its Influence on Children's Reading, Spelling, And Phonology	2004	Primary School
Dağtaş	Opinions of Secondary School 7th Class Students Directed Towards Electronic Dictionaries	2014	Middle School
Can & Deniz	Attıtudes of High School Student's Towards Dictionaries	2016	High School
Fry & Gosky	Supporting Social Studies Reading Comprehension with an Electronic Pop-up Dictionary	2007	Middle School

Brinchmann & Braeken	Rock-Paper-Screen: Fifth-graders' Comprehension of Simple and Enhanced Digital Text	2026	Primary School
Hamilton	The Efficacy of Dictionary Use While Reading for Learning New Words	2012	High School
Melanlıoğlu	Secondary School Students' Dictionary Use Habits: A Qualitative Research	2013	Middle School
Göçer & Garip	Dictionary Reading Studies and Its Importance In Improving Active Vocabulary	2021	Middle School
Özkan	Instruction of Words in 8th Grade Turkish Course Books Which Are Targeted to Get Acquired to Students And Theır Relation to Internal Lexicon (The Case Of Mersin)	2013	Middle School
Çevik & Tosunoğlu	An Experimental Study to Enrich Primary School 2nd Grade Students' Vocabulary	2020	Primary School
Maden & Durukan	Development Electronic Visual Dictionary For Secondary School Students: A Design Based Research	2019	Middle School
Aslan	Investigation of Teachers' Opinions on the Use of Dictionaries and Gaining the Habit of Reading Dictionaries for Secondary School Students	2025	Middle School

As shown in Table 2, the distribution of studies included in the review is presented between 2004 and 2026. A scarcity of studies is evident in the published literature, with only a small number conducted in 2004 and 2020. An increase in the number of studies is apparent in 2020, followed by a decline after 2020. The highest number of studies was published in 2020. Research focusing specifically on dictionary use has been conducted at different educational levels. The distribution of studies examined by K-12 level shows that those conducted at the middle school level (n = 9) are the most prevalent. Primary and secondary school studies ranked second. No studies at the preschool level were identified in the reviewed literature.

Articles are categorized by place of study, journal, and year

Table 3. Descriptive record of articles 2

	Author	Place of Study	Journal Name	Year
1	Goodwin et al.	Amerika	*American Educational Research Journal*	2020
2	Maden	Türkiye	*International Journal of Education Science and Technology*	2020
3	Mlotshwa	Afrika	*Turkish Online Journal of Qualitative Inquiry*	2021
4	Brinchmann & Braeken	Norveç	*Learning and Individual Differences*	2026
5	Fry & Gosky	Amerika	*Journal of Research on Technology in Education*	2007
6	Dağtaş	Türkiye	*The Journal of Academic Social Science*	2014
7	Can & Deniz	Türkiye	*Milli Eğitim Dergisi*	2016
8	Melanlıoğlu	Türkiye	*International Journal of Turkish Literature Culture Education*	2013
9	Beech	Birleşik Krallık	*Reading Psychology*	2004
10	Hamilton	Amerika	*American Annals of the Deaf*	2012
11	Aslan	Türkiye	*Journal of Currıculum and Educatıonal Studıes*	2025
12	Göçer & Garip	Türkiye	*Internatıonal Journal Of Fıeld Educatıon*	2021
13	Özkan	Türkiye	*Turkish Studies - International Periodical For The Languages, Literature and History of Turkish or Turkic*	2013
14	Çevik	Türkiye	*Journal of Mother Tongue Education*	2020
15	Maden & Durukan	Türkiye	*Turkish Studies Educational Sciences*	2019

Table 3 shows data on the authors, research location, journal name, and year of the studies. The included studies were authored by 14 different author groups. The distribution of study locations by country is outlined as follows: Türkiye (9), the United States (3), Africa (1), Norway (1) and the United Kingdom (1). It is evident that all the journals listed under the "journal names" heading are distinct entities. A total of 9 journals published studies from Türkiye, the country contributing the largest number of studies. Research originating from Türkiye demonstrates a heterogeneous distribution. Moreover, an article originating in Africa was published in a journal based in Türkiye. A similar phenomenon was observed in studies conducted in America, which were published in three different journals. Research studies undertaken in Norway, Africa, and the United Kingdom have been published in a range of academic journals. The most recent study included in the review was conducted in Norway. The authors' use of a variety of research sites and journals indicates international research interest of dictionary use at the K-12 level. The distribution by author shows that the majority of authors have published only a single study, with Maden as the exception, who contributed two studies. Of the two studies, one is single-authored and the other is two-authored.

Citation analysis

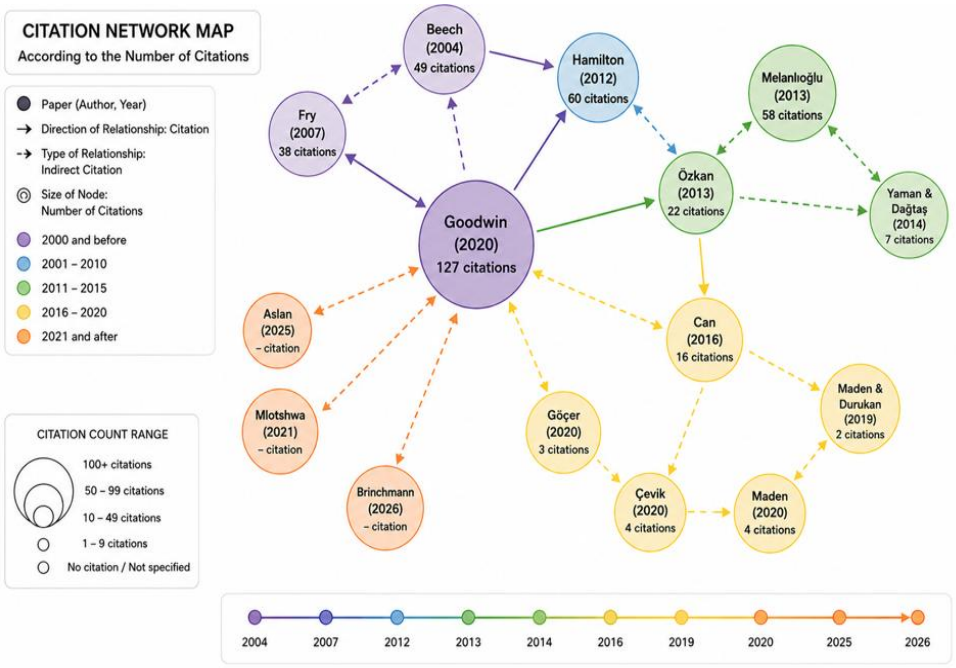


Figure 2. Citation network

Figure 2 presents the citation relationships among the studies included in the systematic review. An examination of the citation network depicted in Figure 2 reveals that the study by Goodwin et al. (2020) exerts the greatest influence. However, "the studies by Hamilton (2012), Melanlıoğlu (2013), and Beech (2004) are also among the most highly cited. With respect to trends over time, the findings suggest that studies on Turkish language education increased in 2010 and subsequent years, while studies focusing on digitalization have become more prominent in the literature since 2020.

Distribution to journals

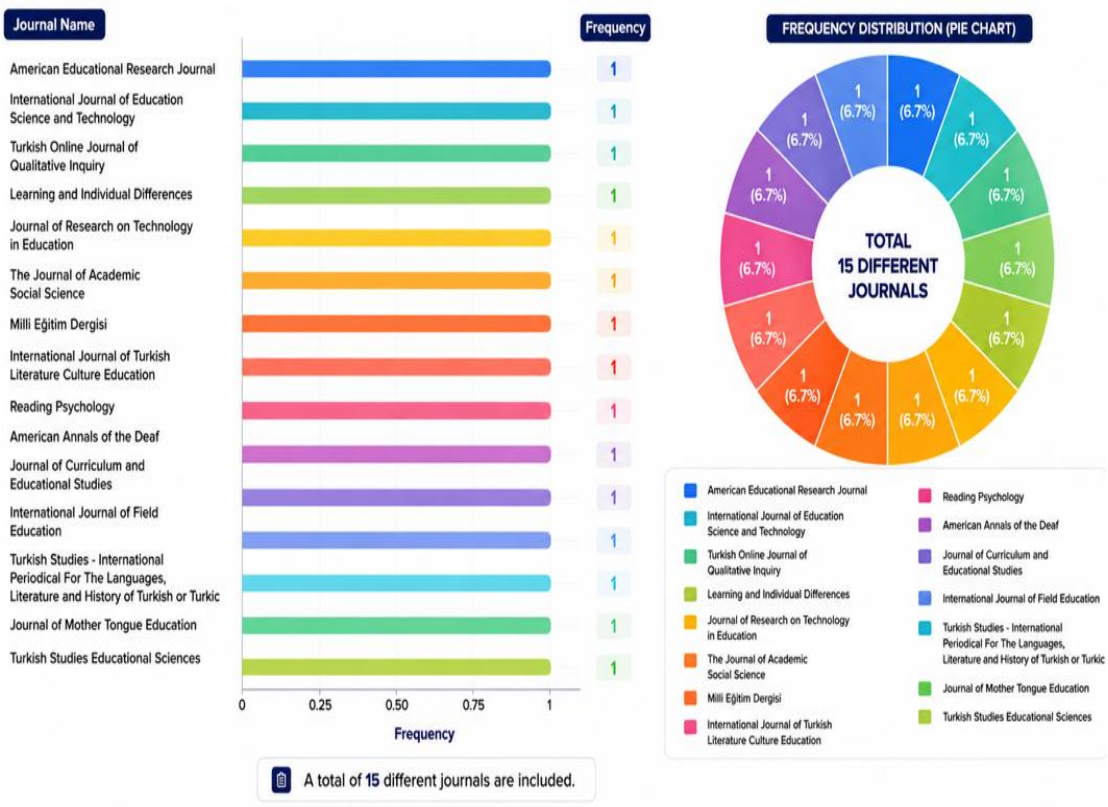


Figure 3. Distribution by journal name

Figure 3 presents the distribution of journals represented in the review. The review included 15 journals. Each journal contributed one study to the review.

Distribution across indexes

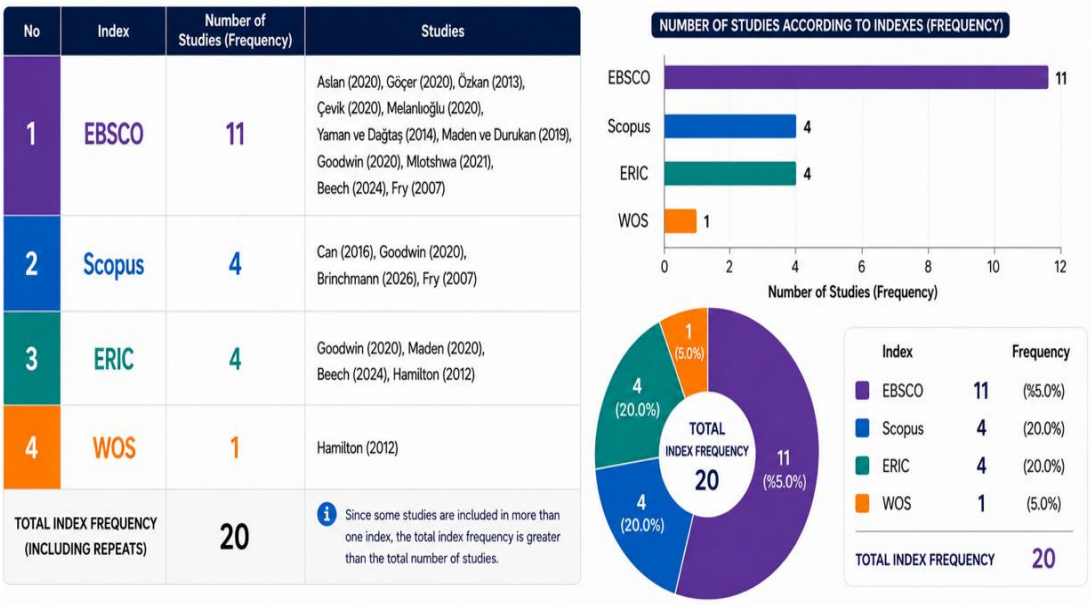


Figure 4. Distribution across indexes

Figure 4 presents the distribution of the included studies across the selected indexing databases. The distribution of the journals by indexing database, in descending order, is as follows: EBSCO (11), Scopus (4), ERIC (4), and WoS (1). Most studies were indexed in EBSCO. Scopus and ERIC each ranked second. Web of Science included the fewest studies. The total number of studies is 15, yet the total index frequency is 20, because some studies are included in more than one index. The following studies were indexed in more than one database: Goodwin (3), Beech (2), Hamilton (2), Fry (2).

Distribution by publication language and indexes

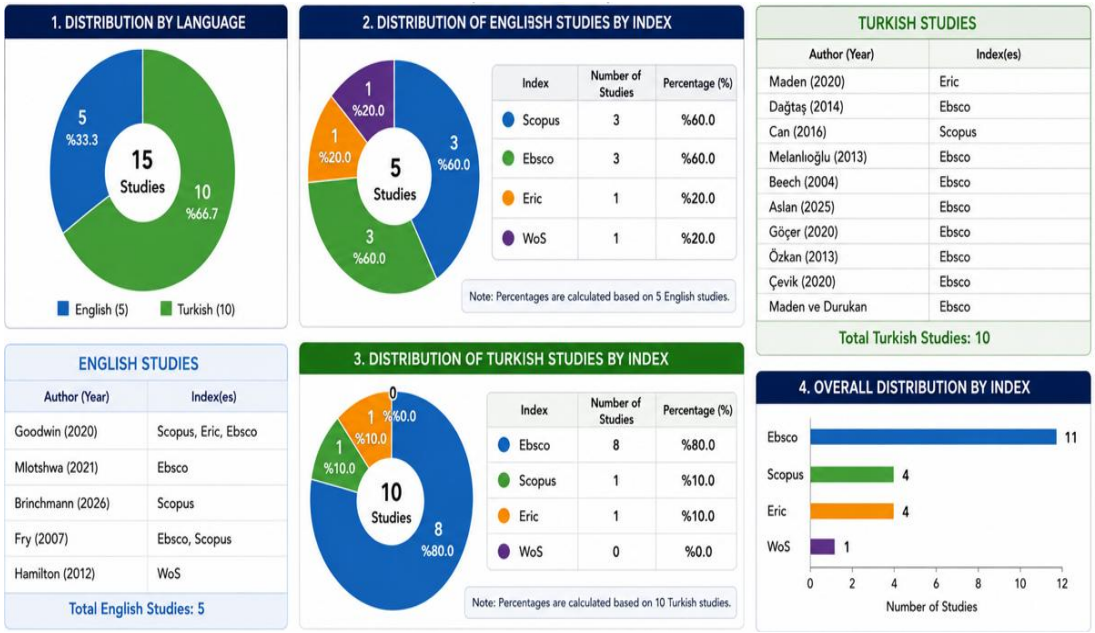


Figure 5. Distribution according to publication language and indexes

Figure 5 presents the distribution of the included studies by publication language and indexing database. An analysis of the distribution by publication language reveals that 10 studies are in Turkish and 5 are in English. While EBSCO accounts for the largest proportion of Turkish-language studies, English-language studies are distributed across Scopus, EBSCO, ERIC, and Web of Science. This distribution indicates that English-language studies are represented across a wider range of international indexing databases.

Conclusions

A total of 15 studies that met the specified criteria were included in the analysis. In this section, the findings from the selected articles are presented and categorized according to the research questions.

Research methodology and objectives

In the first study conducted at the primary school level, Beech (2004) examined children's dictionary usage patterns, skills, and frequency of use, and investigated the relationships among these factors and reading, spelling, and phonological (phonetic) development. In the study, 241 children aged 7 to 11 years were divided into two age groups: under 9 and over 9. This was done in order to observe developmental differences between the two age groups. The study examined the potential of dictionary use to improve independent learning and language skills in children through two different groups. In addition to

vocabulary, spelling, and nonsensical word reading tests, the speed and accuracy of word searches in the dictionary were measured. The study used a quantitative research method.
Brinchmann and Braeken's (2026) study sought to elucidate the impact of varied presentation formats (i.e. paper, simple digital, and advanced digital) on the reading comprehension aptitudes of 5th-grade students. The research, based on experiments conducted with 338 students, found no significant difference in comprehension between paper and digital reading. The study collected data on participants' past reading comprehension levels, word-reading speed/efficiency, and daily digital device use. The study population comprised 338 fifth-grade students. The study employed a quantitative design, incorporating controlled comparison and correlational analysis. Both studies conducted at the primary school level used quantitative research methodologies.

In a study conducted at the middle school level, Goodwin (2020) sought to compare the digital and paper-based reading processes (e.g., note-taking, marking, and going back) of students in 5th to 8th grade and to determine the effect of these processes on reading comprehension. The objective of the study was to ascertain the correlation between reading strategies employed in diverse environments and the attainment of comprehension success. In the study, which was conducted with a sample of 371 middle school students (grades 5, 6, 7, and 8), participants were presented with a reading task in a standardized test format, both in digital and paper formats. A quantitative design was employed in the research, which was conducted through a controlled reading task.

Maden's (2020) research investigated the impact of the "Electronic Visual Dictionary" software, designed specifically for fifth-grade students, on their vocabulary learning success. The study examined the hypothesis that this digital tool would lead to greater success than traditional methods. The study, conducted with 5th-grade students, used a pre-test-post-test control-group experimental design.

In her study, Dağtaş (2014) conducted a comprehensive examination of 7th-grade students' perspectives on electronic dictionaries. The objective of the present study was to ascertain how students experienced these digital tools and what advantages or disadvantages they perceived when compared with printed dictionaries. The research used a qualitative method.

Melanlıoğlu (2013) sought to more precisely ascertain the dictionary usage habits of middle school students. The study was initiated to address the paucity of scientific data on students' awareness of dictionary use, with a view to enhancing the quality of school dictionaries. The research was designed to ensure equal participation from all levels. The study group comprised 32 students, with 8 from each of the fifth, sixth, seventh, and eighth grades of middle school. The study used a qualitative research methodology to achieve a profound understanding of students' attitudes and habits.

Fry and Gosky (2007) examined the effect of pop-up dictionaries embedded in online social studies texts on middle school students' reading comprehension. The objective of the study was to determine whether this digital intervention produced a substantial difference in student scores compared with conventional paper-based reading or digital reading without dictionary support. The sample comprised 129 middle school students. The study used a quantitative research design to clearly measure the effects of the variables.

In a study conducted at high school level, Mlotshwa et al. (2021) examined the effects of online dictionary use on the reading skills of 10th-grade students attending a rural state

secondary school in South Africa. A qualitative approach was adopted to facilitate a deeper understanding of the research outcomes.

Can and Deniz (2016) explored the attitudes of secondary school students in Years 9, 10, and 11 towards dictionaries and to examine whether these attitudes varied significantly according to various variables (gender, grade level, family income, parental education level, and native language). The objective of the study was to ascertain the impact of students' positive or negative attitudes towards dictionaries on their dictionary usage habits. The study's sample comprised 404 students. The study employed a quantitative descriptive design.

Hamilton's (2012) study sought to determine the relative efficacy of various lexicons used by high school students with hearing loss in acquiring the meanings of unfamiliar words during reading. The objective of the study was to ascertain which dictionary was more efficacious in facilitating both immediate and permanent word recall. The research was designed as an experimental study that measured the performance of three types of dictionaries.

Aslan (2025) conducted a study to examine the fundamental theoretical and practical perspectives of Turkish language educators on school dictionaries. The study examined Turkish language educators' opinions on the qualitative and quantitative characteristics of school dictionaries prepared for middle school students and their utilization. The objective of the research was to ascertain the primary purposes for which Turkish language teachers utilize school dictionaries and the characteristics of an ideal school dictionary. The research used a case study design, a qualitative research method.

Göçer and Garip's (2021) study aims to promote the use of dictionaries by introducing them to middle school students. The study employed a qualitative research method, in which observations were conducted during the dictionary-reading activities conducted with the students, and students' opinions will be sought at the conclusion of the process.

Özkan (2013) sought to examine the instruction of vocabulary related to the themes in eighth-grade Turkish language textbooks and the potential for incorporating these terms into students' internal lexicon. The study population consisted of eighth-grade primary school students in the Silifke district of Mersin province during the 2010-2011 academic year. The sample comprised one hundred students. The study employed a descriptive survey model.

Çevik and Tosunoğlu's (2020) study examined the impact of two distinct teaching techniques on the vocabulary of second-grade primary school students. Furthermore, the study investigated the distribution of students who learned idioms using the picture-story technique and the difference in success rates between traditional vocabulary-teaching techniques and idiom-teaching using the picture-story technique. The sample consisted of 64 students attending primary schools in Kırıkkale province under the jurisdiction of the Ministry of National Education during the 2009-2010 academic year. The study employed an experimental design.

Maden and Durukan (2019) sought to develop an Electronic Visual Dictionary (e-DS) for fifth-grade middle school students as part of their research. The objective of the study was to design a visual dictionary of words selected from a Turkish language textbook and to refine it based on student and teacher feedback. The research group comprised 34 students and 2 Turkish language teachers from the 2016-2017 academic year, and 35 students and 2 Turkish language teachers from the 2017-2018 academic year. The study adopted a design-based

research (DBR) methodology.

The use of technology and digital tools

This theme encompasses studies focusing on the impact of electronic, online, or visual digital tools as an alternative to traditional dictionaries. Maden (2020) demonstrated that electronic visual dictionaries have a significant impact on vocabulary teaching. The study demonstrated that integrating computers and other electronic tools into vocabulary instruction enhances learning outcomes. In addition, it was found that the use of electronic visual dictionary software is more effective than conventional teaching methods in enhancing academic achievement in word meaning.

Mlotshwa et al. (2021) found that, the utilization of online dictionaries has been demonstrated to enhance students' pronunciation and vocabulary proficiency. The participants expressed a willingness to use online dictionaries for vocabulary acquisition. The conclusion drawn from this analysis was that the use of online dictionaries in the context of native language education yields favorable outcomes, primarily because they help students improve their pronunciation and apply linguistic principles within grammatically correct sentences. One of the common benefits of online dictionaries is the expeditious access to the meaning of neologisms that they facilitate. However, it is important to note that acquiring precise and accurate pronunciation of new words is also a significant benefit.

Fry and Gosky (2007) demonstrated that pop-up dictionaries function as a practical technological solution, thereby supporting students' academic achievement whilst also helping to maintain subject diversity within the school curriculum. The use of pop-up dictionaries is an effective support mechanism for readers who encounter comprehension difficulties.

In Dağtaş's (2014) study, the majority of students preferred electronic dictionaries, citing the convenience of typing a word and instantly accessing its definition. Searching in printed dictionaries was regarded as a hindrance. Electronic dictionaries are more engaging than their printed counterparts. This positively influences students' willingness to use dictionaries.

In a study by Maden and Durukan (2019), fifth-grade students expressed favorable opinions of e-GS and indicated a desire for its implementation in Turkish lessons. Furthermore, students indicated a desire for the dictionary to be prepared for other subjects as well. Turkish teachers have also called for the dictionary to be expanded to encompass other subjects. The findings suggest that the electronic dictionary, which offers both visual and auditory features, is an effective teaching technology for vocabulary instruction and can be used in Turkish lessons.

The effect of dictionary use on reading and language skills

Research investigating the direct relationships among dictionary use, reading comprehension, spelling, and phonological skills falls under this heading.

Goodwin et al. (2020) found that the qualitative use of digital tools (e.g., strategic highlighting/dictionary use) is positively correlated with comprehension outcomes, thereby challenging the prevailing emphasis on quantitative measures of tool use. The use of conventional paper-based methods can impede comprehension, particularly when used excessively or carelessly. Conversely, digital tools have been shown to enhance efficiency, thereby helping students structure their thoughts more effectively.

Beech (2004) found that is effective in supporting writing skills to support writing skills. However, weakness in dictionary use in children with reading difficulties is directly related to the general slowness and errors in their reading and phonological processing. The strongest correlation between dictionary use and writing skills is evident during early childhood.

Hamilton (2012) conceptualized dictionary use as encompasses two key aspects. Firstly, it is conceptualised as a 'meaning-seeking tool', and secondly, as a vital intervention tool that fosters independence, addresses gaps in contextual strategies, and enhances vocabulary. This, in turn, paves the way for academic success, particularly in reading comprehension.

Brinchmann and Braeken (2026) found that when appropriate conditions (i.e. flexible time and level-appropriate text) are provided, the digital reading environment does not harm the text comprehension skills of fifth-grade students. Despite alterations to the visual presentation of written words brought about by tablet-based reading, it has been determined that this does not have a detrimental effect on students' ability to recognize word forms (spellings). The study by Brinchmann and Braeken (2026) found no substantial difference in reading comprehension between digital dictionaries and traditional print dictionaries, as students performed comparably in both environments. The findings of this research suggest that students' behaviors and usage patterns are the primary determinants.

Aslan's (2025) study focuses on the effects of dictionary use, particularly on reading, vocabulary development, and language skills. Using a dictionary to clarify unfamiliar terminology enhances students' vocabulary and ensures a more precise interpretation of the text.

Göçer and Garip (2021) argued, dictionary reading time has been shown to enhance students' vocabulary, speaking, and writing skills, and to support their comprehension and expression abilities.

Özkan (2013) demonstrates that the primary function of dictionary use is not limited to acquiring the meaning of words, but also encompasses the permanent enhancement of linguistic skills through the integration of words into the internal dictionary (internalization).

Çevik and Tosunoğlu (2020) proposed that the conventional dictionary-based approach to developing language skills is inadequate, particularly for abstract concepts and idioms. Instead, she posits that a pedagogical approach grounded in visual, auditory, and storytelling elements is more effective at fostering vocabulary and comprehension skills.

Maden and Durukan (2019) demonstrated that electronic visual dictionaries facilitate the transition from traditional dictionary use to a digital, interactive format, presenting not only word meanings but also their contexts, pronunciations, and visual representations. The use of these tools has been shown to enhance reading fluency and develop students' language skills by providing visual and contextual representations of vocabulary.

Research conducted at the primary school level has demonstrated that dictionary use can facilitate spelling, vocabulary, and reading fluency. Although the findings vary across studies, several reported positive effects.

Student attitudes, opinions, and habits

Research conducted under this heading focuses on the psychological attitudes students develop towards dictionaries and their usage routines, rather than on the technical success of dictionary use.

Can and Deniz (2016) found that an increase in students' positive sentiments towards dictionaries would increase the likelihood of effective dictionary use, thereby fostering habitual use. The utilisation of a dictionary has been demonstrated to enhance the "semantic structures" that underpin cognitive processes. Regular use has been shown to enhance an individual's vocabulary and improve their conceptual thinking. The research results indicate that secondary school students' general psychological approaches (attitudes) towards dictionary use are high and positive.

Melanlıoğlu (2013) considered dictionary use not merely as a process of finding word meanings, but as a social habit and learning strategy shaped within the triangle of teachers, families, and students. As students progress through the school years, their tendency to use dictionaries also increases. However, the efficacy of this practice in fostering enduring life skills depends on enhancing the visual appeal of the dictionaries, incorporating teacher-led in-class activities, and cultivating students' inclination to verify their self-assessments.

In Dağtaş's (2014) research, students viewed electronic dictionaries as a "fast but unreliable, and encouraging mental laziness" tool, while positioning printed dictionaries as "difficult and time-consuming, but instructive and reliable" sources of information. Despite their inclination towards speed, their psychological dependence and trust remained with printed sources. The utilisation of electronic dictionaries by students is predicated on their expeditious and accessible nature. Furthermore, students have indicated that electronic dictionaries are not always accurate sources of information. Students have been found to consider the information contained within printed dictionaries to be both accurate and reliable. Despite the perception of the process of browsing through the pages of a printed dictionary as "time-consuming" and "difficult", it is argued that the time spent in this process makes the information more permanent.

The studies by Can and Deniz (2016) and Melanlıoğlu (2013) demonstrates that students' attitudes and habits significantly impact dictionary use. Specifically, positive attitudes have been shown to enhance both the frequency and the quality of dictionary use.

Göçer and Garip (2021) found that dictionary reading activities were effective in altering students' perception of dictionaries from "boring" to an educational and entertaining perspective. Students actively engaged in the learning process, as evidenced by their active participation in the process, including word selection. The application has been developed to facilitate the creation of a comprehensive dictionary culture, enabling students to become familiar with the various types of dictionaries.

Özkan (2013) found that students adopted words related to daily life and their areas of interest much more easily and included them in their "internal lexicons." The study revealed that female students exhibited a more active and positive attitude towards language acquisition than their male counterparts. Furthermore, she proposed that the irregular distribution of themes in textbooks impeded students' ability to internalise vocabulary.

According to Çevik and Tosunoğlu (2020), students demonstrate low achievement and low

interest in traditional and dictionary-based teaching methods. In contrast, they exhibit high learning achievement and adapt well to visual and storytelling materials.

Maden and Durukan (2019) reported that students have adopted a favorable disposition towards a process that incorporates visual, auditory, and interactive technologies as an alternative to conventional dictionary use. The use of e-GDS led to a transformation in students' vocabulary-learning habits, moving from a purely visual approach to a multidimensional learning process that encompasses the comprehension of diverse semantic relationships.

Distribution of studies according to authors

An examination of the studies by authorship reveals that multi-author teams conduct the majority of studies, although single-author studies are also present. The following table presents the distribution of studies by authorship in the examination of dictionary usage, while acknowledging the presence of single-author studies in the extant literature.

Distribution of studies according to educational levels

An examination of the distribution of studies by educational level reveals that middle school is the most prominent level in research focusing on dictionary use. A total of nine studies have been conducted at the middle school level, with three studies conducted at each of the secondary and primary school levels. No preschool-level studies were identified in the reviewed literature. This distribution indicates that research on dictionary use remains concentrated at the middle school level, with comparatively limited evidence from primary, preschool, and secondary education.

Distribution of research by study location

Research on dictionary use shows an international distribution. However, a distinct concentration is observed at the country level. Türkiye is the most represented country, with 9 studies. Türkiye is followed by the United States, Norway, the United Kingdom, and one study conducted in Africa. The inclusion of a recent study from Norway suggests continuing international interest in dictionary use in K–12 education. This distribution indicates that dictionary use continues to be investigated across different countries and educational contexts.

Distribution of studies by journal

All studies were published in 15 journals. Nine of the journals were based in Türkiye, three in the United States, and the remaining journals in other countries. The remaining studies were published in journals based in other countries. This distribution suggests growing international research interest in dictionary use.

Discussion

The primary objective of this study is to systematically examine the use of dictionaries in mother tongue education at the K-12 level. Rather than examining dictionary use directly, this study synthesizes the existing literature on dictionary use in mother tongue education at the K–12 level. In this study, 15 articles were analyzed. A review of the literature reveals an absence of systematic studies directly focusing on the use of dictionaries in mother tongue education. A substantial body of research has examined the use of dictionaries in the context of mother tongue education, as reflected in studies by (Abecassis, 2010; Bartelds, 2021;

Fakhritdinovna, 2023; Gavriilidou et al., 2024; Irmetovna, 2021; Margalitadze & Meladze, 2023; Wolfer et al., 2018). Previous studies have examined vocabulary and spelling development (Abecassis, 2010; Fakhritdinovna, 2023; Motjope et al., 2020) as well as dictionary-use strategies (Gavriilidou et al., 2024; Irmetovna, 2021; Merwe, 2020).
The reviewed studies demonstrate that dictionary use is an integral component of the native language learning process from primary school to the high school level. Furthermore, it was concluded that dictionary format (printed or digital) and usage strategies directly affect the effectiveness of the process.

The results of the study indicate that students find digital dictionaries more "engaging" and "faster" than their printed counterparts. The findings of Dağtaş (2014) and Maden (2020) demonstrate that incorporating speed and visual aids enhances student motivation. However, this does not imply that printed dictionaries are entirely superfluous; Brinchmann and Braeken (2026) research indicates that there is no substantial difference in comprehension between paper and digital media, suggesting that the primary concern lies in the method of use rather than the medium itself.

It is important to emphasize that dictionaries serve not only as tools for finding meaning but also as reading strategies. Goodwin et al. (2020) found that the strategic utilisation of digital tools (through highlighting and dictionary support) enhances comprehension success, while unplanned use on paper does not yield equivalent results. This finding suggests that educators should instruct students not only in the utilisation of dictionaries, but also in their incorporation into the reading process. Pop-up dictionaries, as examined by Fry and Gosky (2007), are highlighted as not disrupting the flow of reading and providing support to the reading process.

In addition to contributing to semantic knowledge, dictionaries are also employed to cultivate phonological awareness. As posited by Mlotshwa et al. (2021) and Beech (2004), lexicons were found to play an important role on vocabulary development, alongside pronunciation and phonological knowledge. In particular, the audio pronunciation features offered by online dictionaries have been shown to facilitate students' acquisition of oral language skills in language education.

The studies by Maden (2020) and Fry and Gosky (2007) revealed that electronic/online dictionaries positively affect student motivation and dictionary usage skills; however, it was observed that this depends on the classroom context and teaching approaches. Furthermore, an examination of extant studies on student attitudes (Can & Deniz, 2016; Melanlıoğlu, 2013) reveals that dictionary use is frequently perceived as a "homework-oriented" obligation. To challenge this perception, as evidenced by Hamilton's (2012) study, there is a need for the widespread use of visual and interactive dictionaries tailored to the specific needs of different user groups (e.g., individuals with hearing loss).

Recommendations

The limitations of the reviewed evidence indicate the need for larger sample sizes and longitudinal studies in the future. Most existing studies in this field concentrate on reading. It is recommended that further research be conducted on the impact of dictionary use on students' written expression skills and word choices. It is imperative that the impact of new-generation AI-based lexicons and contextual translation tools on mother tongue learning at the K-12 level be investigated.

Limitations

The review was limited to articles published in Turkish and English. Significant studies conducted in other languages may have been overlooked. Because the review included both quantitative and qualitative studies, it was not possible to synthesize the findings using a single quantitative measure. The review is also limited by the selected databases and the 15 studies that met the inclusion criteria. Future research should place greater emphasis on primary and secondary education, where the evidence base remains limited.

Declarations

Ethical Approval: *This article does not contain any studies with human participants performed by any of the authors.*
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