Revista Românească pentru Educație Multidimensională
ISSN: 2066-7329 | e-ISSN: 2067-9270
Abstracting & Indexing | Clarivate Analytics - Web of Science (WoS); EBSCO; Google Scholar; ICI Journals Master List - Index Copernicus; Ideas RePeC; Econpapers; Socionet; CEEOL; Philpapers; KVK; WorldCat; CrossRef; J-GATE

2025, Volume 17, Issue 2, pages: 1-37 | https://doi.org/10.18662/rrem/17.2/972
Submitted: March 17, 2025 | *Accepted for publication:* April 15, 2025

Cognates in Foreign Language Learning: A Cognitive and Linguodidactic Perspective

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Abstract: *This theoretical study offers a conceptual framework grounded in empirical literature to examine the cognitive and linguodidactic potential of cognates in foreign language learning. Focusing on languages with both similar and distinct writing systems, the paper explores how cognates – words sharing etymological roots and forms – facilitate vocabulary acquisition by activating prior knowledge and promoting cross-linguistic transfer. In today's multilingual education, recognizing and systematically leveraging linguistic similarities between languages, particularly cognates, is essential for promoting language mastery. This study aims to guide readers in understanding how such similarities can be integrated into language teaching to reduce cognitive load and enhance learning outcomes.*
Central to this process is the priming effect, a key psycholinguistic mechanism that enhances mental lexicon activation and word recognition. While benefits such as accelerated vocabulary development are highlighted, challenges like false cognates are reframed as opportunities for fostering metacognitive awareness and refining learning strategies. Special attention is given to innovative approaches, including AI-assisted tools and associative techniques, aimed at maximizing the advantages of cognates in diverse linguistic contexts. The study does not present original experimental data but synthesizes and builds upon existing research to bridge cognitive theory with didactic practice. It raises open questions regarding the long-term role of cognates in bilingual development and the integration of technology into language learning. Ultimately, the article contributes to advancing multilingual education by offering insights into cross-linguistic learning strategies and proposing directions for future inquiry.

Keywords: *cognates, priming effect, linguodidactics, mental lexicon, cross-linguistic transfer, writing systems.*

How to cite: Oberste-Berghaus, N. (2025). Cognates in foreign language learning: a cognitive and linguodidactic perspective. *Revista Românească pentru Educație Multidimensională, 17*(2), 1-37. https://doi.org/10.18662/rrem/17.2/972

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Introduction: Cognates in the Context of Modern Linguistics

In today's globalized society where multilingualism is increasingly becoming the norm, foreign language education faces the challenge of designing learning processes that are not only efficient and inclusive but also cognitively grounded. A central yet often underestimated resource in this context is the use of *cognates* – lexical items that share a common etymological origin and exhibit similar forms and meanings across different languages (Crystal, 2012; Matthews, 1997). Their ability to activate prior linguistic knowledge and establish semantic bridges makes them a valuable tool for facilitating linguistic transfer between a learner's first and additional languages (Ringbom, 2007; Jessner, 2008).

Psycholinguistic research has convincingly demonstrated that cognates ease access to the mental lexicon and accelerate word recognition (Costa et al., 2000; Dijkstra et al., 2010), there remains a lack of an integrative didactic framework that systematically harnesses their potential in practice – particularly for language pairs with divergent writing systems or limited genealogical proximity (Otwinowska & Szewczyk, 2019; Salhi, 2019). Moreover, technological innovations, especially those driven by artificial intelligence (AI), are gaining prominence in discussions surrounding personalized and efficient language instruction (Warschauer & Xu, 2024).

Modern foreign language didactics, which spans various educational levels – from primary school to professional training – there is an increasing focus on developing teaching strategies that expand evidence-based methods to optimize the learning process in diverse ways. The primary aims are to enhance learning efficiency, reduce learners' cognitive load, and minimize entropy in information processing.

The significance of this investigation arises from the observation that the formal and semantic similarities of linguistic units such as cognates (e.g., interlingual homonyms, internationalisms, or interlingual technical terms) have been insufficiently explored regarding their potential for foreign language acquisition. In particular, their cognitive and associative didactic functions have received limited attention. However, the advent of innovative educational environments provides new opportunities to leverage genetically related and phonetically similar lexemes, especially in terms of their didactic applications.

A preliminary review of relevant research highlights that cognates are not only essential elements of associative methods in foreign language acquisition but also offer significant potential for developing innovative linguodidactic approaches. Linguodidactic strategies – understood as

teaching methods grounded in linguistic and cognitive science – form the analytical core of this study. These strategies serve as the basis for translating theoretical insights into pedagogical tools, particularly in the context of cognate-based learning across multilingual environments. They facilitate the learning process by activating prior knowledge from a learner's native language or an already acquired foreign language and transferring it to the new target language.

This study contributes to linguistic theory by examining the role of cognates in activating the mental lexicon. Drawing on models such as Common Underlying Proficiency (Cummins, 1981), it explores how cross-linguistic interactions can be enhanced through cognates. In this context, the concept of the mental lexicon (Levelt, 1989) is extended to include interlingual processes, focusing on how lexical items are perceived and processed in both related and unrelated languages. Based on this theoretical foundation, the study pursues the following objectives:

1. To define the theoretical foundations of cognate usage in language acquisition.
2. To examine the cognitive mechanisms and psycholinguistic evidence that support their use.
3. To propose linguodidactic strategies, including AI-assisted methods for optimizing cognate-based learning.
4. To explore implications for multilingual learners across typologically diverse languages and writing systems.

The study focuses on linguistic and didactic units, with particular emphasis on the phenomenon of cognates. It introduces a new field of inquiry centered on languages with similar and different writing systems, where one of these languages may serve as the learners' primary or native language. Moreover, it incorporates international discourse and prior experiences with cognates, which are shown to be crucial for language acquisition irrespective of the writing system.

In this context, not only is a widely acknowledged challenge in multilingual pedagogy addressed, but a novel theoretical perspective is also offered by critically re-evaluating how cognates are conceptualized and applied in foreign language instruction. By drawing on international research, the study positions itself within current academic debates and proposes a cross-linguistically adaptable framework that integrates cognitive, psycholinguistic, and AI-supported approaches. In doing so, it contributes to a globally relevant discourse by promoting evidence-based, transferable strategies for inclusive and effective multilingual education.

The primary aim is to explore the linguodidactic potential of cognates in both related and unrelated languages. Current discussions, prior findings, and established methods are systematically analyzed to identify effective approaches for leveraging cognates in language learning. These include both traditional and innovative strategies applicable to heterographic and homographic writing systems.

By critically reassessing how cognates are conceptualized and applied, this research addresses a recognized gap in multilingual pedagogy. It introduces a novel, evidence-based approach to inclusive language instruction that aligns with international discourse and current academic debates. Crucially, cognates not only serve as lexical tools but also function as cognitive and cultural bridges between languages. Their shared roots and structural similarities reveal the interconnected development of languages across time and space. In this sense, cognates dissolve rigid boundaries between linguistic systems, enabling smoother and more intuitive transitions from one language to another. This perspective reframes language learning not as the acquisition of separate systems, but as a continuum of overlapping knowledge, shaped by shared human experience.

Building on these theoretical premises, the following section outlines a systematic review methodology aimed at synthesizing empirical evidence and translating it into practical strategies for multilingual instruction.

Methodology

Systematic review approach

Methodologically, this study employs a systematic literature review based on PRISMA (2015) guidelines to integrate empirical, theoretical, and technological perspectives and translate them into a practice-oriented model for multilingual instruction. The methodological approach includes:

- **Selection Criteria:** Sources were selected based on their relevance to cognate theory, cognitive processing, and educational technology in multilingual contexts. Priority was given to peer-reviewed empirical studies, psycholinguistic experiments, and AI-integrated language learning literature. Peer-reviewed studies published between 2000–2024 that focus on cognate-based learning, cross-linguistic transfer, and the cognitive and linguodidactic potential of cognates.
- **Data Collection:** Comprehensive literature search conducted using Scopus, Web of Science, and Google Scholar, with a focus on empirical studies, meta-analyses, and experimental research. Literature saturation was considered achieved after identifying 55+ unique sources

covering all major themes, with recurring citations confirming topic maturity and consensus.

- **Analysis:** Thematic coding and synthesis of empirical findings, theoretical advancements, and methodological innovations in cognate-based language acquisition.

This study adopts a progression from theoretical premises to practical applications. It begins by examining current research on cognates, followed by an analysis of previously addressed questions and the identification of open research problems that can be extrapolated to the linguodidactic domain of foreign language acquisition. Furthermore, related fields such as psycholinguistics, neuropedagogy, and machine translation are considered. The interdisciplinary approach is particularly significant, as it creates opportunities for educational innovation and experimental methodologies.

Empirical validation strategies

To strengthen the study's empirical foundation, this research integrates key experimental and theoretical insights from recent studies on cognate processing, multilingual cognition, and AI-enhanced language learning. The following areas form the empirical backbone of this work:

- Bilingual and Multilingual Lexical Processing: Recent investigations into cross-linguistic lexical access and the cognitive mechanisms underlying cognate recognition offer critical insight into how learners navigate multiple language systems (Vanlangendonck et al., 2020; Rabinovich et al., 2018). These studies demonstrate that cognates typically activate shared semantic and phonological networks, facilitating lexical access across languages. However, as Vanlangendonck et al. (2020) show, this facilitation effect is not unconditional. When cognates are embedded in mixed stimulus lists alongside unrelated words, they can actually produce inhibitory effects rather than speeding up processing. This finding highlights the importance of stimulus context and task design in both psycholinguistic research and educational applications, suggesting that the didactic use of cognates must be systematic and context-sensitive to avoid cognitive overload or confusion.
- Defining Cognates in Experimental Contexts: As Roembke, Koch, and Philipp (2024) emphasize, the definition of a cognate should not rely solely on formal similarity. Instead, it must account for empirical evidence of functional activation – such as processing speed and cross-linguistic priming – in bilingual speakers. Their work

underscores the importance of using clearly defined, psycholinguistically validated cognate pairs in experimental research. This study adopts their functional perspective to guide the selection and interpretation of theoretical models.

- Cognitive and Psycholinguistic Perspectives: Studies on the mental lexicon, the priming effect, and interlingual interference in multilingual learners (Szubko-Sitarek, 2015; Uzun, 2024) provide further evidence for the dynamic interaction between known and new lexical items in language acquisition. This view is supported by Lalor and Kirsner (2000), who argue that priming tasks simulate natural bilingual processing by activating shared representations in the mental lexicon (Lalor & Kirsner, 2000a, 143–145). These findings support the assumption that cognates can strengthen neural associations and reduce cognitive load.
- AI-Driven Approaches to Cognate Learning: This study also builds on recent work that explores the role of artificial intelligence in supporting vocabulary acquisition through cognate-based methodologies. Tools such as automated error detection systems, adaptive learning platforms, and cognate visualization interfaces aim to enhance metalinguistic awareness and mitigate interference errors. Particular emphasis is placed on AI-assisted cognate mapping across diverse writing systems and typologically unrelated languages, a promising frontier in multilingual pedagogy.

In addition, this research synthesizes linguistic and didactic studies on cognates in foreign language instruction, with special attention to the role of digital tools and psycholinguistic principles in multilingual educational contexts. It also examines cross-linguistic transfer in both homographic and heterographic language pairs to explore the full range of cognate facilitation effects.

Definition of cognates and linguistic classifications

Cognates are linguistic units characterized by shared semantic, formal, and etymological features. E. Uchida (2001, 5) identifies three primary categories of cognates: full cognates (less frequent), partial cognates (more common), and false cognates (or 'pseudocognates'), which are phonetically similar but differ in meaning. According to the Oxford Dictionary of Linguistics, cognates are word pairs in different languages that share a common etymological origin and often exhibit phonological or orthographic similarities (Matthews, 1997: 58). For instance, the Spanish 'norte' and the German 'Norden' both originate from the Proto-Indo-

European root 'ner-, ('left' or 'below'), originally referring to 'left of the rising sun' (Köbler, 1995).

In general linguistics, cognates are defined as words 'historically derived from the same root as another form' (Crystal, 2008: 83). Due to their shared origin, cognates often display similarities in pronunciation and spelling (Costa et al., 2000). Parashkevov (2004) provides an extensive account of etymological doublets in German, illustrating how formally and semantically similar word pairs can evolve from a common root yet develop distinct meanings or usage contexts across time. Examples include the English 'grave' (/greɪv/) and the German 'Grab' (/ɡraːp/), as well as the English 'fish' (/fɪʃ/) and the German 'Fisch' (/fɪʃ/). However, the degree of similarity among cognates varies across languages (Schepens et al., 2013; Vanlangendonck et al., 2020). In addition, Schepens, Dijkstra, and Grootjen (2012) provide a quantitative account of orthographic similarity between languages using Levenshtein distance. Their cross-linguistic analysis of European languages demonstrates that the distribution of cognates closely correlates with typological language proximity. Research demonstrates that cognates enhance the representation and processing of languages by fostering interactions between linguistic systems (Dijkstra et al., 2010; Guediche et al., 2020).

The linguodidactic potential of cognates

The linguodidactic potential of cognates lies in their isomorphism, encompassing both formal (e.g., morphological, phonetic, orthographic) and semantic (e.g., genetic-etymological, synonymous) similarities. These characteristics make cognates highly effective tools for applying associative methods in the acquisition of first and second foreign languages. Associative methods based on cognates represent some of the oldest traditions in foreign language teaching (Sell, 1977). However, recent advancements in linguistics, machine learning, and psycholinguistics have expanded the possibilities for leveraging cognates in innovative ways.

Modern technologies have refined the traditional associative method, giving rise to associative-integrative and associative-informative approaches. These approaches emphasize multimodal presentations of linguistic and cultural materials, which enhance learning outcomes through interactive engagement between learners and digital tools (Grekova, 2023).

Practical applications of cognates and methods in foreign language teaching

The Direct Method, which places exclusive focus on the target language, has long been regarded as a cornerstone in multilingual didactics. Early pioneers of language teaching, such as Palmer (1921), Fries (1945), and Krashen (1981), emphasized its importance in minimizing language interference and enabling learners to use the target language naturally through immersion.

Contemporary scholars, including Richards and Rodgers (2014) and Kumaravadivelu (2006), affirm that the Direct Method remains relevant in modern language education, particularly when integrated with communicative and task-based approaches. These enhancements expand the methodological framework by incorporating interactive and context-based learning formats. This evolution demonstrates that the Direct Method is not merely a traditional approach but a dynamic and adaptable strategy, especially effective in multilingual environments. It helps reduce language barriers and promotes immersive learning through deliberate linguistic interactions, supporting multilingual competence.

Innovative approaches

- AI-Assisted Learning Methods: Artificial intelligence (AI) offers groundbreaking opportunities to enhance the teaching of cognates. AI algorithms can analyze large linguistic datasets to identify high-value cognates, tailor content for individual learners, and even predict potential challenges, such as false friends, ensuring optimized learning pathways. For instance, AI-driven applications can deliver customized vocabulary lists that emphasize cognates with immediate relevance to learners' needs.
- Interlingual Association Methods: These approaches utilize cognates to create explicit connections between a learner's native language and the target language. By highlighting similarities in structure, meaning, and phonology, learners can draw on existing knowledge, accelerating vocabulary acquisition. Practical applications include word-matching exercises, interactive digital tools that visualize cognate networks, and projects encouraging learners to trace etymological roots.
- Context-Based Learning: Incorporating cognates into meaningful, real-world scenarios strengthens memory retention and contextual understanding. For example, learners might engage in role-playing

exercises or read short stories enriched with cognates, helping them to apply vocabulary naturally. Additionally, multimedia tools, such as videos or interactive apps, can contextualize cognates within specific cultural or professional domains, fostering deeper engagement.

Examples of AI-assisted methods in cognate learning

The integration of artificial intelligence (AI) into language education has gained growing recognition for its ability to personalize instruction, provide instant feedback, and support learner autonomy. Empirical studies have shown that AI-powered tools significantly enhance learner engagement, with 72.5% of students reporting improved personalization and over 80% appreciating real-time feedback (Jegede, 2024). These technologies adapt dynamically to the learner's linguistic background, proficiency, and learning pace, leading to more effective vocabulary acquisition and skill development (Lawrance et al., 2024; Okolo et al., 2024). Furthermore, AI feedback mechanisms – such as intelligent tutoring systems, automated writing evaluation, and speech recognition – have been found to improve accuracy and foster metalinguistic awareness (Yeşilyurt, 2023). Systematic reviews confirm that such tools not only facilitate cognitive processing but also promote self-regulated learning and cross-linguistic transfer (Mohebbi, 2024). These affordances make AI-driven solutions especially promising for enhancing cognate-based learning in multilingual settings.

The practical implications of these findings can be seen in a range of AI-assisted methods that specifically support cognate-based language learning. The following examples outline how such tools can personalize vocabulary acquisition, provide targeted feedback, and promote metalinguistic awareness through dynamic, learner-centered approaches:

1. Personalized Cognate Profiling

AI applications analyze the learner's vocabulary, language background, and proficiency level to generate tailored lists of high-value cognates.
Example: A Ukrainian learner studying German receives a custom list of German cognates with strong overlap to Ukrainian (e.g., *Universität, Musik*), while potential pitfalls such as false friends (*aktuell ≠ actual*) are flagged.
Tool Suggestion: *Cognate Finder, Duolingo's Smart Tips*

2. Real-Time Error Detection and Feedback

AI systems detect typical cognate-related errors in writing or speech and provide immediate corrective feedback.
Example: In a writing task, a sentence like "*This news is actual*" is flagged and corrected to "*This news is current*," with an explanation based on interference

from the learner's native language.
Tool Suggestion: *Grammarly, ChatGPT-based writing assistants, Microsoft Editor*

3. Interactive Cognate Mapping and Visualization

AI-powered visualization tools show cross-linguistic relationships between cognates, helping learners grasp phonetic, orthographic, and semantic patterns across languages.
Example: A digital "Cognate Map" displays the semantic field of *hospital* across English, French, German, and Spanish, allowing learners to compare spelling, pronunciation, and meaning.
Tool Suggestion: *CognateFinder.org, Lexical Tutor*, custom NLP-based visualization tools

4. Adaptive Cognate-Based Language Games

AI adjusts game difficulty in real time based on learner performance, emphasizing high-frequency cognates and revisiting false friends as needed.
Example: A vocabulary quiz prioritizes cognates and integrates spaced repetition. Learners are rewarded for correctly identifying true vs. false cognates in context.
Tool Suggestion: *Duolingo, Memrise, Wordwall* (AI-augmented)

5. Contextual Reading Support with Cognate *Highlighting*

AI-enhanced reading platforms highlight cognates in authentic texts and offer in-line glossaries or translation support.
Example: While reading a news article, the word *information* is automatically identified as a cognate and visually highlighted. Clicking it reveals the translation, usage, and cognate network.
Tool Suggestion: *LingQ, Readlang, Rewordify*

Practical examples

1. Interactive Cognate Maps: Digital platforms like Cognate Finder can generate maps of related words across multiple languages, visually demonstrating how cognates connect linguistic systems.
2. AI Vocabulary Coaches: Tools such as Quizlet, augmented with AI, can adaptively quiz learners on cognates, prioritizing those that align with their learning progress and flagging false cognates for further review.
3. Role-Playing with Cognates: Learners participate in scenarios, such as booking a hotel or attending a business meeting, where cognates are deliberately integrated into dialogues. These exercises reinforce both vocabulary and communicative competence.

4. Gamification: Games like "Cognate Clash" or cross-linguistic puzzles can make learning more engaging, rewarding learners for identifying and using cognates correctly.

Challenges

While cognates offer numerous advantages, they also present challenges such as false friends and linguistic interference. False friends, or misleadingly similar words across languages, can lead to misunderstandings and errors in usage. Additionally, linguistic interference occurs when learners apply rules or patterns from their native language to the target language inappropriately.

This article proposes targeted didactic strategies to mitigate these challenges, ensuring that learners can maximize the benefits of cognates while minimizing potential pitfalls. These strategies include:

- Awareness Building: Educating learners about common false friends and their correct usage to prevent errors. For example, highlighting differences between ‚*actual*' (English) and ‚*aktuell*' (German), or ‚*library*' (English) and ‚*librería*' (Spanish).
- Contextual Learning: Embedding false friends and potentially confusing cognates in realistic contexts helps learners discern their appropriate usage. For instance, practice exercises could involve sentence completion or dialogue creation, where the correct meaning of false friends is emphasized.
- Reinforcement Techniques: Using spaced repetition systems (SRS) to revisit tricky cognates and false friends, ensuring learners internalize correct meanings over time.
- AI-Powered Error Detection: Leveraging AI tools to detect and correct errors related to false friends in written or spoken language, providing immediate feedback to learners.

By addressing these challenges proactively, educators can foster more precise language acquisition and reduce the risk of errors, while still leveraging the cognitive advantages of cognates.

Psycholinguistic perspective on the direct method

Within the framework of the Direct Method, the use of other languages is often discouraged due to the potential risk of interference errors. However, recent psycholinguistic research has demonstrated that languages interact and are interconnected within the brain, forming a dynamic and interdependent network. Scholars such as Cummins (1981),

Pavlenko (2001), Bialystok (2009), and Wiggins & Lambert (1977) have shown that metalinguistic competencies and interlingual connections significantly enhance language acquisition. Cummins (1981) highlights the importance of a shared cognitive foundation (Common Underlying Proficiency), which facilitates the transfer of linguistic skills across languages. Similarly, Bialystok (2009) emphasizes the cognitive benefits of multilingualism, such as improved executive control and enhanced problem-solving abilities.

Cognates in psycholinguistic research

Cognates have become a focal point in psycholinguistic studies due to their ability to strengthen interlingual connections and reduce cognitive load during language acquisition. Traditional research often examines the perception and recognition of cognates in controlled environments, focusing on language fragments where identical or similar words are directly activated in discourse. These studies are particularly insightful when a third language is introduced, allowing researchers to analyze the perception of similarities and differences between two target languages.

For example, Szubko-Sitarek (2011) demonstrated that trilingual participants exhibit simultaneous activation, parallel processing, and interaction across all three languages. This suggests that the presence of a third language enhances the "affinity effect," increasing sensitivity to similarities between cognates across languages. Trilingual individuals process cognates faster and more accurately than non-cognates, underscoring the cognitive efficiency afforded by multilingualism. This finding is further supported by Zhu and Mok (2020), who demonstrated that Asian adult trilinguals could visually recognize cognates and interlingual homographs across two non-native languages with high accuracy, suggesting robust cross-linguistic activation even outside of L1 contexts.

Further supporting this perspective, Rabinovich, Tsvetkov, and Wintner (2018) explored the influence of a learner's native language on lexical choices in a second language. Their findings revealed that advanced non-native speakers frequently rely on cognates from their native language during spontaneous speech production, illustrating the deep interconnection between linguistic systems. Similarly, Versteeg (2019) found that Dutch-German bilingual children performed significantly better on naming tasks involving cognates compared to non-cognates, suggesting that cognates are more readily accessible in the mental lexicon.

Experimental evidence and advances

Lalor and Kirsner (2000b) explored transfer effects between English and Italian cognates, using priming experiments to show that cognates facilitate faster word recognition across languages. Their findings align with theories suggesting that cognates are processed in overlapping neural networks, reducing the cognitive effort required for word retrieval. Möller (2009) and Schwall (2019) further analyzed factors influencing cognate recognition in Germanic languages, emphasizing that phonological similarities and synchronous transparency play critical roles in successful identification.

These studies collectively highlight the unique role of cognates as linguistic bridges, enabling learners to draw on prior knowledge and streamline language processing. Moreover, they underscore the potential for integrating cognates into psycholinguistic and didactic frameworks to enhance language acquisition.

Pedagogical Implications

Building on these insights, educators can adopt targeted strategies to leverage the benefits of cognates while addressing potential challenges, such as false friends. Examples include:

- Explicit Teaching: Introducing learners to cognates with clear explanations of their meanings and usage, while highlighting common false friends to prevent misunderstandings.
- Contextual Learning Activities: Designing role-playing scenarios or storytelling tasks that integrate cognates across multiple languages to reinforce their usage in real-world contexts.
- AI-Powered Tools: Employing AI-based platforms to identify cognates, track learner progress, and provide immediate feedback on errors related to false friends or misuse.
- Multilingual Cognitive Training: Encouraging learners to engage with cognates in multilingual contexts to strengthen interlingual connections and promote cognitive flexibility.

By incorporating these approaches, educators can enhance learners' ability to recognize and effectively use cognates, optimizing their overall language acquisition process.

Cognates and linguodidactic implications

Psycholinguistics provides deeper insights into the associative and cross-linguistic processing of cognates than traditional linguodidactics. It highlights that:

1. Development of Metalinguistic Skills: Metalinguistic abilities acquired during first and second language learning enhance learners' sensitivity to cross-linguistic analogies, contextual recognition, and intuitive analysis, enabling them to draw meaningful connections between languages (Apeltauer, 1997).
2. Perception of Relatedness: These skills help learners perceive languages as psychotypically closer, which increases the pedagogical effectiveness of positive language transfer and multidimensional convergence (Singleton & Aronin, 2018, 88).

Risks and opportunities of cognates in foreign language teaching

Cognates create a zone of familiarity between languages, which can ease language acquisition. However, this familiarity also carries risks, particularly in unrelated languages with distinct writing systems. False cognates and misunderstandings may arise, but these challenges are not without value.

Daulton (2008) observes that while learners are more prone to errors when identifying cognates in language pairs like English and Japanese, these mistakes also foster metacognitive growth. By critically analyzing errors, learners develop greater awareness of language patterns and refine their processing strategies.

Champ (2014) underscores that English-speaking learners benefit from the extensive borrowing of European words (*gairaigo*) in Japanese, especially during the early stages of language acquisition. These cognates act as scaffolding, facilitating vocabulary learning and supporting learners as they build connections between languages.

Automated corpora and experimental psycholinguistics

Research on cross-linguistic distributions of high-frequency and related words highlights both the challenges and opportunities in the analysis of cognates (Schepens et al., 2013). Complementing this, Schepens et al. (2012) apply Levenshtein distance to systematically quantify orthographic similarity across languages, laying the groundwork for computational approaches to cognate identification in multilingual corpora. Automated systems for identifying and selecting orthographically, phonetically, and

semantically related cognates have paved the way for innovative didactic applications. Despite orthographic inconsistencies, these systems hold significant potential for creating machine-generated corpora and lexical pairings that can be integrated into language teaching.

Otwinowska and Szewczyk (2019) investigated the perception and processing of cognates and false cognates in English language instruction. Their findings reveal:

- Familiar cognates were processed more efficiently than false cognates.
- Ecologically valid tasks showed moderate success in leveraging interlingual similarities for vocabulary acquisition.
- False cognates, as interlingual homographs, served complementary roles in perception and translation tasks.

The authors emphasize the importance of formal similarities for experimental psycholinguistics and second language acquisition research (Otwinowska & Szewczyk, 2019, 974–975).

Practical applications in language teaching

1. AI-Driven Lexical Resources: Automated tools can generate tailored vocabulary lists, prioritizing high-frequency cognates and flagging false cognates to enhance learner awareness. These tools can be integrated into interactive learning platforms for personalized feedback.
2. Cognate Mapping Exercises: Visual tools that illustrate relationships between cognates across languages help learners understand linguistic connections and improve recall.
3. Authentic Tasks: Educators can design tasks where learners use cognates in realistic contexts, such as creating bilingual glossaries or translating short texts, to deepen comprehension and engagement.
4. Error Analysis Activities**:** Incorporating false cognates into exercises where learners analyze and correct common errors helps develop critical thinking and metalinguistic awareness.

Practical applications in language acquisition

1. Priming-Based Learning Activities: Educators can use priming techniques to activate learners' mental lexicons. For example, providing learners with related words in their native language before introducing new vocabulary in the target language enhances recall and comprehension.

2. Interference Awareness Training: Learners can benefit from activities that explicitly address interference risks. For instance, tasks comparing false cognates with their accurate meanings encourage learners to critically evaluate linguistic input.
3. Contextualized Vocabulary Practice: Using new linguistic structures in context-rich scenarios – such as dialogues, role-playing, or multimedia content – strengthens neural connections and improves language retention.
4. Neurocognitive Games: Interactive tools like memory games or digital simulations can reinforce the connections between previously acquired knowledge and new linguistic input, aligning with the mental lexicon framework.

Experimental studies on priming and transfer effects

Lalor and Kirsner (2000b) conducted two experiments to investigate transfer effects between English and Italian words. Their study employed standard repetition priming, a classical laboratory experiment, as well as a comparative analysis of frequency effects for high- and low-frequency words. The results indicated that transfer effects were restricted to morphologically related words. Moreover, the transfer was asymmetrical: while word processing in the second language was facilitated, the effect on the first language was minimal. These findings support functional explanatory models of the mental lexicon, which propose that pre-existing neural connections are utilized efficiently (Lalor & Kirsner, 2000b, 358–398).

Earlier, Lutjeharms (1999) argued that cognates are co-stored within the mental lexicon, which reduces the cognitive effort required for learning. By leveraging existing neural pathways, less effort is needed compared to creating entirely new lexical entries. These insights emphasize the efficiency of cognates as learning aids and their central role in psycholinguistic research.

The exploration of the mental lexicon and the associated role of cognates provides valuable insights into the mechanisms of language learning. Findings from experimental studies show that cognates facilitate the learning process by efficiently utilizing existing cognitive resources. They not only offer advantages in language acquisition but also highlight the close connection between linguistic structures and cognitive processes. These insights form the foundation for innovative approaches in language teaching and open new perspectives for utilizing cognates in foreign language education. Building on experimental insights, the following section situates these findings within a broader psycholinguistic framework.

From interlanguage to cognate priming: a psycholinguistic perspective

Over the past two decades, research in psycholinguistics has made significant advancements, particularly in understanding mental processes involved in learning. Pioneering studies by Levelt (1989), Gass & Selinker (1992), Lutjeharms (1999), Marx (2004), Targonska (2004), Herdina & Jessner (2002), and Szubko-Sitarek (2015) have established the concept of the mental lexicon as central to language acquisition. This concept describes the cognitive storage and processing of all formal and semantic aspects of words within a neural network. This aligns with Gass and Selinker's (1992) notion of the interlanguage system, where learners form evolving mental representations shaped by both prior linguistic knowledge and new input. These internal systems are continually restructured as learners encounter and process additional language data.

Recent studies illustrate that acquiring new linguistic structures heavily relies on pre-existing competencies. The brain integrates new linguistic information by accessing established neural networks, facilitating the learning process and enhancing the efficiency of language acquisition.

These interlanguage mechanisms are particularly relevant when examining how cognates trigger cross-linguistic activation through the priming effect.

The role of cognates in effective foreign language acquisition can be further explored through the analysis of the article *Speaking Two Languages at Once* by Spalek, Hoshino, Wu, Damian, and Thierry (2014). The authors argue that formal characteristics of cognates, such as sound and spelling – particularly when a cognate originates from the learner's native language – facilitate unconscious recognition and lead to faster positive responses (i.e., correct answers). In their study, they state: "We show that German-English bilinguals performing a simple picture-naming task exclusively in English spontaneously access the phonological form of non-produced German words" (Spalek et al., 2014, 226). This phenomenon is based on the activation of phonological segments and connections in both languages, with cognates automatically and unconsciously activating mental representations of words in both L1 (native language) and L2 (second language). This process accelerates the acquisition and comprehension of vocabulary.

The mental lexicon and cognates

Nickel (2017, 19) highlights that when learning a new word, the mental lexicon stores a variety of additional information, including denotative and connotative meanings, pronunciation, spelling, as well as morphological and syntactic properties. This complex storage underscores the pivotal role of the mental lexicon in language acquisition. Nickel also points out that cognitive analogies, particularly during initial learning stages, are crucial for linking new linguistic information to prior knowledge. As Lutjeharms (2004) has emphasized, structured access to the mental lexicon plays a key role in vocabulary acquisition, particularly when learners work with semantically related units such as cognates.

Cognates, as related words with shared etymological roots, serve as a valuable learning aid. However, they not only exhibit similarities but also significant differences that are distinct to each language. Linguistic borrowing – the adoption of words from a foreign language – is a globally prevalent phenomenon. Nickel (2017, 22) notes that many of today's cognates have been borrowed from English. This development underscores the universal principles of language categorization and their close connection to the organization of semantic and conceptual memory within the mental lexicon (Neuner-Anfindsen, 2005, 80).

Building on this, Lutjeharms (2019) explores how multilingual speakers manage and organize lexical knowledge across languages within a multilingual mental lexicon. Her findings suggest that cross-linguistic activation – especially through cognates – can either facilitate or interfere with word retrieval, depending on language proximity, proficiency, and context. This aligns with Jessner's (2008) DST framework, which views lexical development as a dynamic, interconnected system shaped by cognitive and metalinguistic factors in multilingual learners. According to Ringbom (2007), identifying structural similarities across languages supports positive transfer by triggering the mental lexicon more effectively, which aids comprehension and long-term retention. Didactically, this suggests that systematic work with cognates not only supports vocabulary expansion but also enhances metalinguistic awareness and promotes effective interlingual transfer.

The priming effect and cross-linguistic learning

From a psychological and neurolinguistic perspective, the priming effect plays a critical role in language learning. This effect describes how the perception of a cognate in one language facilitates faster recognition of a corresponding word in another language. Spalek and colleagues (2014) found

that the priming effect is more pronounced and longer-lasting in L2 compared to L1. This sustained effect supports the retention of phonological patterns and simplifies the learning process. An even more remarkable neurophysiological phenomenon is the parallel activation and congruence of cognates across both languages, leading to a "competition between languages." Spalek et al. (2014) note: "The late activation of L2 does not impair L1, and the slow activation of L2 phonology does not affect L1 processing. This indicates that the influence of the foreign language on the native language is limited, making cognates particularly useful for learners: They aid L2 learning without significantly interfering with L1 usage" (p. 230).

Cognates thus play a central role in linking phonological elements across languages. They not only facilitate the acquisition of new words in L2 but also strengthen the consolidation of learned material by activating L1 as a foundation for L2 learning.

Priming mechanisms: hypotheses and applications

Two possible mechanisms underpin the priming effects observed with cognates:

1. Strengthening Activation of Cognates

When encountering a cognate in one language, individuals activate similar neural connections for the corresponding word in another language. This is due to shared lexical or semantic features stored in memory.

2. Activation of Similar Concepts

The priming of cognates often relies on conceptual similarity. Cognates convey identical conceptual information, enabling learners to better grasp the meaning of a word, even when pronunciation or spelling differs slightly.

Psycholinguistic studies further reveal that trilingual learners exhibit greater sensitivity to cognates compared to learners acquiring only one foreign language based on their native language. Researchers have introduced the concept of a multilingual mental lexicon to describe the interaction of linguistic and interlingual factors in the brains of multilingual individuals (Szubko-Sitarek, 2015).

Priming effects have also been studied in typologically distant languages such as Tunisian Arabic and German. Salhi (2019) notes: "Interestingly, despite the typological distance between Tunisian and German, priming effects were observed, albeit with slightly reduced magnitude" (p. 78). These effects are attributed to the cumulative perception of internationalisms, often of Latin origin, which are also present in English and French.

Potential for machine learning and ai integration

The priming effect also holds promise for applications in machine learning, particularly in the development of algorithms for cognate processing across languages with diverse scripts. Salhi (2019) describes an experiment where participants determined whether a second presented word sequence was a valid word by pressing a key. Participants first encountered a simple cue in language 1, followed by the target word in language 2. A reduced reaction time for recognizing the target word after exposure to a similar stimulus indicated a facilitation effect (Salhi, 2019, 73). This effect was observed even with cognates lacking orthographic similarity.

In addition, cross-linguistic activation effects have been demonstrated across European and Asian languages, spanning three to four languages. For example, the word *radio* exhibits parallels in German, Tunisian Arabic, French, and English (Salhi, 2019, 95).

The priming effect underscores the critical role of cognates in language acquisition, highlighting their utility in both psycholinguistic research and educational applications. Cognates facilitate faster word recognition, enhance vocabulary retention, and strengthen cross-linguistic connections, making them indispensable tools in multilingual education. Moreover, their integration into AI-driven language learning systems offers promising avenues for personalized and efficient language instruction.

The use of cognates in foreign language acquisition

Numerous methods have been developed in recent years to incorporate cognates into the learning of unrelated languages and those with distinct writing systems. These approaches are becoming increasingly central to multilingual didactics and provide fresh perspectives for effective foreign language instruction.

Key research contributions

- English-Turkish Cognate Database: Uzun and Salihoğlu (2021) created a comprehensive database cataloging cognates and false homogeneous words between English and Turkish. Their experiments demonstrated the database's value in enhancing reading comprehension and exploring bilingualism in English-Turkish contexts (Uzun & Salihoğlu, 2021, 236).
- Bulgarian-Turkish Cognate Study: Uzun (2024) developed a list of 2,022 cognates between Bulgarian and Turkish, aimed at promoting interlingual vocabulary acquisition and raising awareness of linguistic

affinities. This project underscores the central role of cognates in fostering bilingualism and linguistic awareness.

Methods for enhancing cognitive skills

Uzun (2024, 6) systematically identified and emphasized seven key approaches for integrating cognates into language teaching. These strategies highlight the potential of cognates to enhance vocabulary acquisition, linguistic awareness, and cross-linguistic processing. Uzun concludes that these methods not only support language learning but also encourage metacognitive development, fostering a deeper understanding of linguistic relationships and cultural nuances. The seven points Uzun marked are elaborated as follows:

1. Etymology Exploration: Uzun stresses the importance of encouraging students to delve into the historical and linguistic roots of cognates. This activity not only builds an appreciation for language evolution but also strengthens learners' understanding of how languages are interconnected. For example, analyzing the shared origins of the English word *hospital* and its Spanish counterpart *hospital* demonstrates the influence of Latin on both languages.
2. Interactive Games and Competitions: Uzun highlights the effectiveness of games and competitions in making language learning enjoyable and engaging. Activities like "Cognate Match" or team-based contests involving the identification of true and false cognates foster collaboration, reinforce vocabulary retention, and motivate learners through healthy competition.
3. Story Creation with Cognates: Creating stories with specific cognates encourages learners to integrate new vocabulary into meaningful contexts. Uzun points out that this method not only reinforces word usage but also develops creativity and linguistic flexibility. For instance, students could write short narratives incorporating domain-specific cognates, such as scientific or technological terms.
4. Domain-Specific Cognate Clusters: Focusing on specialized vocabulary through cognate clusters within specific domains (e.g., science, technology, arts) accelerates comprehension and retention of technical terms. Uzun illustrates how this method can prepare learners for academic or professional language use, making it particularly relevant for advanced learners.
5. Pronunciation Challenges: Uzun recommends pronunciation-focused exercises to highlight subtle differences in how cognates are pronounced across languages. This approach sharpens learners'

phonetic awareness and improves their attention to detail, reducing errors in spoken communication. For example, students could compare the pronunciation of *doctor* in English and *doktor* in German.

6. Cultural Comparisons Through Cognates: Using cognates to explore cultural nuances between languages adds a rich cross-cultural dimension to language learning. Uzun argues that this approach helps students understand how language reflects cultural contexts, deepening their appreciation for both linguistics and cultural studies. For instance, comparing the use of borrowed terms in culinary traditions (e.g., *croissant* in English and French) provides insights into shared and distinct cultural identities.
7. Research Projects on Cognates: Assigning independent research projects, as Uzun suggests, empowers students to investigate the role of cognates in linguistic phenomena or specific industries. This method fosters critical thinking and inquiry, as students explore topics like the impact of loanwords in globalized industries or the historical spread of cognates through colonialism and trade.

Uzun's work provides a comprehensive framework for utilizing cognates in modern language education. By marking these seven approaches, Uzun emphasizes their relevance in enhancing linguistic competence, promoting metacognitive skills, and fostering cultural awareness. These strategies not only address the practical needs of learners but also align with broader educational goals, such as preparing students for multilingual and multicultural environments.

Effective methods for utilizing cognates in language teaching

In addition to these seven approaches, Uzun (2024,5-6) emphasizes the integration of cognates into established teaching methods, such as Total Physical Response (TPR) and storytelling-based instruction. By combining these methods with cognate-based strategies, learners are better able to understand and retain new vocabulary while building confidence in language learning. Uzun identifies several key benefits:

1. Vocabulary Expansion Through Related Words: Cognates allow learners to quickly expand their vocabulary by leveraging familiar structures from their native language, reducing cognitive load and accelerating comprehension.
2. Improved Reading Comprehension: Recognizing cognates in texts enables learners to infer meanings of unfamiliar words, reinforcing contextual analysis and critical thinking.

3. Enhanced Pronunciation Skills: Cognates often share phonetic similarities across languages, making pronunciation more intuitive and reducing errors in spoken communication.
4. Cultural Connections: Cognates provide insights into historical and cultural links between languages, deepening learners' appreciation of linguistic diversity. For instance, shared words like *pasta* (Italian) and *paste* (Romanian) reflect cultural exchanges over time.
5. Facilitated Interlingual Transfer: Leveraging prior knowledge from the native language simplifies the acquisition of new linguistic structures, fostering confidence in tackling unfamiliar material.

Uzun's work bridges theoretical insights and practical applications, offering a comprehensive framework for incorporating cognates into modern language education. By explicitly linking cognates to established teaching methods, such as storytelling and TPR, Uzun demonstrates how a multimodal approach engages learners on cognitive, linguistic, and cultural levels. Additionally, Uzun highlights the psychological benefits of cognates, including boosting learner confidence and reducing anxiety in language learning.

This integrated framework equips educators to tailor cognate-based instruction to diverse learner groups, addressing practical needs while promoting metalinguistic and cultural awareness. Uzun's contributions align with broader educational goals, preparing students for success in multilingual and multicultural environments.

Artificial intelligence and cognates

Otwinowska and Szewczyk (2019) highlight the potential of AI-driven systems to identify and process cognates, significantly enhancing language learning. Despite their current benefits, further advancements in software design and methodological approaches are necessary to fully exploit the potential of these technologies. Modern foreign language didactics increasingly integrates AI and machine learning to streamline vocabulary acquisition and facilitate language processing.

The innovative use of automated tools for learning foreign languages with cognates, supported by artificial intelligence (AI), offers unique advantages. These include improved learning efficiency and a simplified approach to acquiring new vocabulary. This is particularly promising for:

- Languages with similar scripts (e.g., English and French or Ukrainian and Bulgarian), where visual similarities between cognates can aid intuitive recognition and learning.

- Languages with distinct scripts (e.g., Ukrainian and German or English and Japanese), where AI can adapt content through transliteration, alphabetization, and gradual association building to bridge orthographic differences. Additionally, phoneme-grapheme associations can be formed more quickly in such cases, facilitating faster reading and speaking acquisition. This allows learners to develop fluency and comprehension skills more effectively, even when dealing with unfamiliar writing systems

Key functions of AI in cognate-based learning

1. Recognition and Visualization: For languages with similar scripts, AI systems can quickly identify visual and orthographic similarities between cognates, presenting them in ways that promote intuitive connections.
2. Support for Orthographic Divergences: In languages with different writing systems, AI platforms can facilitate learning through consistent transliteration, contextualized exercises, and alphabet training, enabling learners to link related words more effectively.
3. Dynamic Personalization: AI tools adapt to the learner's proficiency level, linguistic background, and familiarity with cognates, creating a tailored learning experience that addresses individual challenges.
4. Real-Time Feedback and Error Correction: AI systems can identify and correct errors instantly, enhancing learner accuracy and reinforcing correct usage.
5. Engagement Through Multimodal Learning: By combining text, audio, visuals, and interactive activities, AI platforms increase motivation and engagement, catering to diverse learning styles.

Practical applications for language teaching

1. Interactive Learning Modules: AI-powered applications can integrate cognate recognition into game-based learning, quizzes, and vocabulary-building exercises, making language acquisition engaging and dynamic.
2. Cross-Linguistic Exercises: Tools that compare and contrast cognates between languages enable learners to develop cross-linguistic awareness and improve cognitive flexibility.
3. Support for Diverse Linguistic Backgrounds: For learners with varied native languages, AI tools can identify language-specific cognates and false friends, tailoring content to their linguistic context.

4. Visualization Tools: Dynamic cognate maps or networks help learners understand the relationships between words, enhancing memory retention and comprehension.
5. Collaborative Learning: AI platforms can facilitate group activities where learners collectively explore and analyze cognates, fostering teamwork and collaborative skills.

Significance for modern language didactics

The integration of AI into cognate-based learning represents a significant advancement in language teaching. By utilizing technology, educators can:

- Reduce Cognitive Load: AI streamlines the processing of linguistic similarities, making it easier for learners to connect new vocabulary to prior knowledge.
- Facilitate Multilingual Learning: AI tools support the transition between languages, enhancing cross-linguistic transfer and interlingual awareness.
- Promote Inclusivity: Personalized learning ensures that learners with diverse needs and linguistic backgrounds benefit equally from cognate-based approaches.
- Enhance Engagement: The interactive and dynamic nature of AI-supported learning increases motivation and sustains learner interest.

Future directions

To maximize the potential of AI in cognate-based education, future research and development should focus on:

- Improving transliteration and visualization algorithms for unrelated languages.
- Expanding databases of cognates and false friends across diverse language pairs.
- Integrating advanced feedback mechanisms that provide context-specific corrections.
- Exploring the impact of multimodal learning environments on long-term retention and cognitive processing.

Deduction

Cognates are words that share a similar form and meaning across two or more languages due to a common etymological origin. They can be attributed to three central linguistic phenomena – genesis, form, and

semantics – which are particularly significant in language acquisition. Their use allows learners to acquire new vocabulary faster by associating it with previously known concepts. This reduces cognitive load and fosters a sense of connection between the languages involved.

Innovative approaches to integrating cognates include thematic vocabulary games, rapid association exercises, and the use of multimedia platforms. These methods make a wide range of cognates accessible to learners, facilitating an accelerated learning process. At the same time, this approach deepens learners' engagement with cultural contexts, contributing to a more profound understanding and longer-lasting internalization of linguistic structures.

Research shows that learning two foreign languages simultaneously enhances the ability to recognize cognates and linguistic relationships. This not only improves linguistic competence but also encourages the exploration of cultural similarities. Psycholinguistic and cultural studies particularly highlight key phenomena such as associativity, contextuality, and priming.

Cross-linguistic repetition methods that incorporate cognates – words with similar spelling and meaning across different languages – are regarded as effective techniques for foreign language acquisition. These methods simultaneously activate relevant lexical elements in both languages. The underlying principle assumes that cognates with similarities in form and meaning (e.g., '*problem'* in German and '*problema'* in Ukrainian) can serve as priming stimuli, thereby accelerating the recognition or retrieval of equivalents between languages.

The use of priming cognates can help learners identify words from their first language and use them as cues for the target language. However, according to Wlosowicz (2010), challenges may arise. Morphological similarities, such as differing suffixes and endings, can lead to interference, negative transfer, or even the spontaneous creation of neologisms.

To avoid idealizing cognates as universal tools for foreign language learning, it is essential to systematically analyze both their positive and negative effects. Table 1 provides a structured overview of these aspects.

Table 1: Positive and Negative Effects of Cognates

Advantages	Disadvantages
Positive Transfer: Similarities in form and meaning make it easier for learners to acquire new words by transferring knowledge from their native language to the target language, e.g., 'concert' (EN) ↔ 'Konzert' (DE) ↔ 'kontsert' (UKR), 'hotel' (EN) ↔ 'Hotel' (DE) ↔ 'hotel' (SP) ↔ 'hotel' (UKR).	**Linguistic Interference:** Similarity between related words may lead to mistakes in usage or pronunciation due to applying native language structures inappropriately in the target language.
Vocabulary Expansion: Cognates offer an effective way to expand vocabulary, especially in the early stages of learning, by aiding the understanding of basic concepts and ideas. Example: Basic vocabulary recognition: - DE: 'Information', 'Musik', 'Universität' - EN: 'Information', 'Music', 'University' - UKR: 'Informatsiia', 'Muzyka', 'Universytet'. Exercise: Learners create a list of words they know from their native language and find corresponding cognates in the target language, forming simple sentences such as 'The university is large' → 'Universytet velykyi'	**False Friends:** Cognates that look similar but have different meanings cause confusion, e.g., ‚rock' (EN: stone) ↔ 'Rock' (DE: skirt), 'Blatt' (DE: 'sheet of paper') ↔ 'Blat' (PL: 'criminal network'), 'Krug' (DE: 'jug') ↔ 'Kruk' (UKR: 'raven').
Facilitating Text Comprehension: Familiar words in texts help learners derive meanings of sentences more easily. **Result:** Learners can quickly grasp the general meaning of the sentence (*A musician performed at a university concert hall, attracting students*), even if they don't understand every single word, due to the cognates acting as clues. This reduces cognitive load and improves reading. **For a Ukrainian-speaking learner:** Cognates like 'musician' ('muzykant'), 'concert' ('kontsert'), 'university' ('universytet'), and 'auditorium' ('audytoriia') help establish connections with familiar words in their native language.	**Accidental Homonyms:** Words that look similar but have no common origin or meaning lead to misunderstandings, e.g., 'coin' (EN: 'coin') ↔ 'coin' (FR: 'corner'). These misunderstandings can hinder learning efficiency.

Efficient Language Acquisition: Familiar cognates enable faster vocabulary building and efficient language learning. Activities include: **- Cognate Lists:** Thematic word lists for classroom use. **- Matching Exercises:** Matching native language words with their cognates in the target language. **- Context Exercises:** Completing sentences with cognates to practice correct usage. **- Speed Reading:** Reading texts with many cognates to improve comprehension and word recognition.	**Illusion of Competence:** Familiarity with cognates may give learners a false sense of understanding, leading to misuse.
Improving Pronunciation Skills: Cognates aid in pronunciation training by providing a familiar written form that helps distinguish differences. For example, comparing ‚**family‘** (EN: /ˈfæmɪli/) and ‚**famille‘** (FR: /faˈmij/) improves learners' pronunciation through awareness of contrasts.	**Pronunciation Challenges:** Cognates with different pronunciation patterns across languages can confuse learners, e.g., 'family' (EN) vs. 'famille' (FR).
Communication Aid: Using cognates facilitates basic communication even with limited language knowledge. Example Dialogue: - German to English Speaker A: *Welche Musik hörst du gern?* Speaker B: Ich mag klassische Musik und Pop. Speaker A: *What kind of music do you like?* Speaker B: I enjoy classical music and pop.	**Contextual Limitations:** Cognates with similar meanings may have restricted usage depending on the context, making accurate application challenging. For instance, 'aktuell' (DE: current) vs. 'actual' (EN: real). A German speaker might say, 'This news is actual', instead of the correct 'This news is current'.
Visual Connections in Different Writing Systems: Cognates help learners quickly grasp reading in new writing systems by establishing visual connections between letters and graphemes. For example, 'Dach' (DE) and 'dakh‘ (UKR), 'arubaito' (JAP) ↔ 'Work/Job' (from the German 'Arbeit') enable learners to link familiar meanings with unfamiliar characters.	**Transfer of Grammatical Rules:** Learners may incorrectly transfer grammatical structures from their native language to the target language due to the perceived closeness created by cognates. For example, a German speaker might say, ‚I go to home‘ instead of the correct ‚I am going home‘.

Motivation and Confidence: Recognizing cognates boosts learners' confidence and motivation by providing quick successes in understanding words, sentences, and paragraphs.	

Cognates as Effective Language Bridges in Learning New Languages

Cognates can serve as effective language bridges in the process of learning new languages, as they create a connection between the native language and the target language. Due to their similar form and meaning, cognates allow learners to build on pre-existing knowledge and transfer it to the new language. This not only facilitates vocabulary acquisition but also reduces cognitive load by enabling learners to recognize and utilize familiar patterns.

- **Reduction in Learning Time:** Familiar cognates make it easier to quickly access the vocabulary of the target language.
- **Promotion of Interlingual Transfer:** Learners can apply their knowledge from one language to another.
- **Cultural Connections:** Cognates reveal historical and cultural relationships between languages, strengthening intercultural understanding.

(Source: Own Representation)

Discussion

Existing findings emphasize that cognates represent effective support in foreign language acquisition, particularly for related languages or those with similar writing systems. Methods such as using cognate lists, exploring etymologies, and strategically employing AI technologies have shown that they can accelerate the learning process and boost learners' motivation.

While research on related languages is well-established, significant gaps remain in the study of cognates between unrelated languages with different writing systems. Initial studies, such as Salhi's (2019) work, demonstrate that positive priming effects can also occur in distant language pairs like Tunisian and German. However, systematic investigations into the long-term effects of cognates in such contexts, as well as the challenges arising from typological and cultural differences, are still lacking.

To address these gaps, it is essential to focus more on interlingual processes in unrelated languages. Future research could explore how cognates can be deliberately used as bridges between languages with differing writing systems to improve learning outcomes. The integration of technological tools, such as AI and multimodal teaching methods, holds significant potential for advancing multilingual pedagogy and enhancing foreign language instruction.

Open research questions

Although promising, the study of cognates leaves several unresolved issues, particularly in languages with different writing systems. Future research should address questions such as:

1. How do cognates between languages with distinct writing systems influence reading and translation speeds?
2. What strategies are most effective in teaching visually distinct language pairs?
3. Which cognitive levels – phonological, semantic, or orthographic – play a central role in the comprehension of cognates?
4. How are cognates organized within the mental lexicon? Is retrieval selective or interlingual, and what factors influence this process?

Additional questions include:

- How do writing systems affect the long-term storage of cognates in memory?
- What cognitive strategies can improve the recognition and use of cognates?
- How can AI and other technological tools optimize the use of cognates in language learning?

Furthermore, machine learning presents promising opportunities. Developing algorithms for selecting relevant cognates and precisely measuring reaction times could enhance language acquisition processes. Advances in hardware technology, such as simulating priming effects and creating neuropedagogical resources, could further optimize the teaching and learning of cognates.

Conclusion and outlook for future research

This paper presents a novel approach to multilingual didactics by proposing a cognitive-AI framework for the strategic use of cognates. The author's synthesis of psycholinguistic and instructional theory contributes to filling a significant gap in cross-linguistic pedagogy, particularly for learners working across distinct language families and writing systems.

Cognates offer tremendous potential for foreign language instruction and linguistic research. By establishing interlingual connections, they simplify learning processes and provide new perspectives on the mental lexicon and cross-linguistic interference.

This article demonstrates that the systematic study and deliberate didactic use of cognates can serve as a solid foundation for modern pedagogy. Further research is essential to explore their full potential –

especially in contexts involving unrelated languages and distinct writing systems. By leveraging cognates, educators and researchers can develop innovative tools and methods that significantly enhance the efficiency and accessibility of multilingual education.

Linguistic similarities between a learner's first language and the target language can significantly support the acquisition of a foreign language. For multilingual learners – particularly those whose first language shares lexical roots with the target language – cognates function as effective bridges into new linguistic systems.

The deliberate use of cognates:

- enhances learners' lexical competence, and
- sharpens their awareness of structural similarities across languages.

These positive effects foster linguistic confidence and promote a deeper understanding of language systems and interlingual relationships.

Looking ahead, this contribution invites further discussion and research on how cognate-based approaches can be refined and adapted for broader multilingual contexts. Future studies may focus on:

- the long-term retention and recall of cognate-based vocabulary,
- the integration and pedagogical effectiveness of AI-supported cognate tools in the classroom, and
- the impact of cross-linguistic instructional strategies in diverse educational settings.

By expanding both the theoretical and practical exploration of cognates, language pedagogy can move toward more inclusive, efficient, and cognitively grounded models of multilingual education. This approach not only enhances linguistic competence but also highlights the interconnected evolution of languages, emphasizing shared etymologies, cultural exchanges, and historical ties that shape the global linguistic landscape. Recognizing these commonalities fosters deeper intercultural understanding and reinforces the role of language learning as a bridge between communities.

Acknowledgment

I, Nataliia OBERSTE-BERGHAUS, hereby declare that I am the sole author of this paper and take full responsibility for its content. All research, analysis, and writing presented in this work are entirely my own. I have neither received nor sought unauthorized assistance in the production of this paper. Any errors, omissions, or expressed opinions are solely my responsibility. In accordance with the journal's AI policy, no AI tools were used for data analysis or interpretation. AI-assisted tools (e.g., Grammarly, ChatGPT-based paraphrasing tools) were used exclusively to support grammar refinement and

coherence during the writing process. The theoretical framework and all analyses reflect my own original scholarly work.

Limitations of the research

This study is limited by its theoretical nature, relying solely on secondary data and existing literature. While this approach provides a robust foundation for conceptual analysis and model development, it does not capture the complexities of real-time classroom dynamics or learners' individual responses to cognate-based instruction. Future empirical validation is therefore necessary, particularly in testing the effectiveness of AI-assisted cognate mapping – especially in contexts involving unrelated language pairs and distinct writing systems.

Moreover, the study places a strong emphasis on cognitive-linguistic and didactic perspectives, while sociocultural, emotional, and institutional dimensions receive comparatively less attention. These factors, however, can significantly influence the reception and overall success of cognate-based learning strategies. Future interdisciplinary research should aim to incorporate these perspectives to achieve a more comprehensive understanding of the learning process.

Finally, while AI-supported learning methods are discussed, their role remains illustrative rather than empirically grounded. No classroom implementation or systematic evaluation of such tools was conducted. Subsequent research should focus on experimentally assessing the pedagogical impact, user experience, and long-term learning outcomes of AI-integrated cognate instruction in diverse educational settings.

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